

総合カタログ

富士電機半導体

FUJI SEMICONDUCTORS



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IGBT

SiC

IC

MOSFET

Diode

Pressure Sensor

Outline



IGBTモジュールの特長 Features of the IGBT Module

■特長 Features

- パッケージ小型化と出力のパワー UP を実現！
 - ・ 高性能、低損失な第六世代 V シリーズ IGBT チップ・FWD を使用
 - ・ Tj max175°C、連続動作保証 150°C
- 環境に優しいモジュール
 - ・ 豊富な組立性、ハンダレス組立への対応
 - ・ RoHS 対応（一部除外）
- ターンオン特性
 - ・ ノイズー損失トレードオフの改善
 - ・ dv/dt, di/dt 低減によるノイズ・振動の抑制
- ターンオフ特性
 - ・ ソフトスイッチング特性・ターンオフ振動の抑制
- A compact design allows for greater power output
- High performance 6th gen. V series IGBT/FWD chipset
- Tj(max.)=175°C, Tj(op)=150°C
- Environmentally friendly modules
- Easy assemblage, solder free options
- RoHS compliant (Some parts are exceptional. See Part numbers.)
- Turn-on switching characteristics
- Improved noise-loss trade-off
- Reduced turn-on dv/dt, excellent turn-on di/dt
- Turn-off switching characteristic
- Soft switching behavior, turn-off oscillation free

■製品系列 Product lineup

Number of IGBT Switches	Products Category	Page	Internal Configuration				Max V _{CE}				Rated Current					
			IGBT Module				600V	1200V	1700V	3300V	≤50A	>50A ≤150A	>150A ≤300A	>300A ≤600A	>600A ≤1200A	>1200A
			Standard Module	Power Integrated Module	Intelligent Power Module	Discrete IGBT										
1	Standard 1-pack	5	✓				✓						✓	✓		
	Chopper	5	✓			✓	✓			✓	✓	✓				
2	Standard 2-pack	6				✓	✓	✓			✓	✓	✓			
		7	✓				✓	✓				✓	✓			
1,2	High Speed Module	8	✓				✓				✓	✓	✓			
	High Power Module	9	✓				✓	✓	✓				✓	✓	✓	
	PrimePACK™	10	✓				✓	✓					✓	✓	✓	
6	6-pack	12				✓	✓	✓		✓	✓	✓				
		13	✓				✓	✓				✓	✓			
4,12	AT-NPC 3 level	14	Reverse-Blocking IGBTs are integrated.				✓	✓			✓	✓	✓	✓	✓	
1	Discrete RB-IGBT	15				✓					✓					
7	PIM	16		✓			✓	✓		✓	✓					
		17					✓	✓		✓	✓					
6,7	IPM	19			✓		✓			✓		✓	✓			
		20					✓	✓		✓	✓	✓	✓			
1	Discrete IGBT	24				✓	✓			✓	✓	✓	✓			
2	IPM for EV/HEV	25			✓		✓						✓			
6	6-pack for EV/HEV	25	✓				✓						✓			

注: PrimePACK™ はInfineon Technologies社の登録商標です。
 Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

■型式の見方 Part numbers

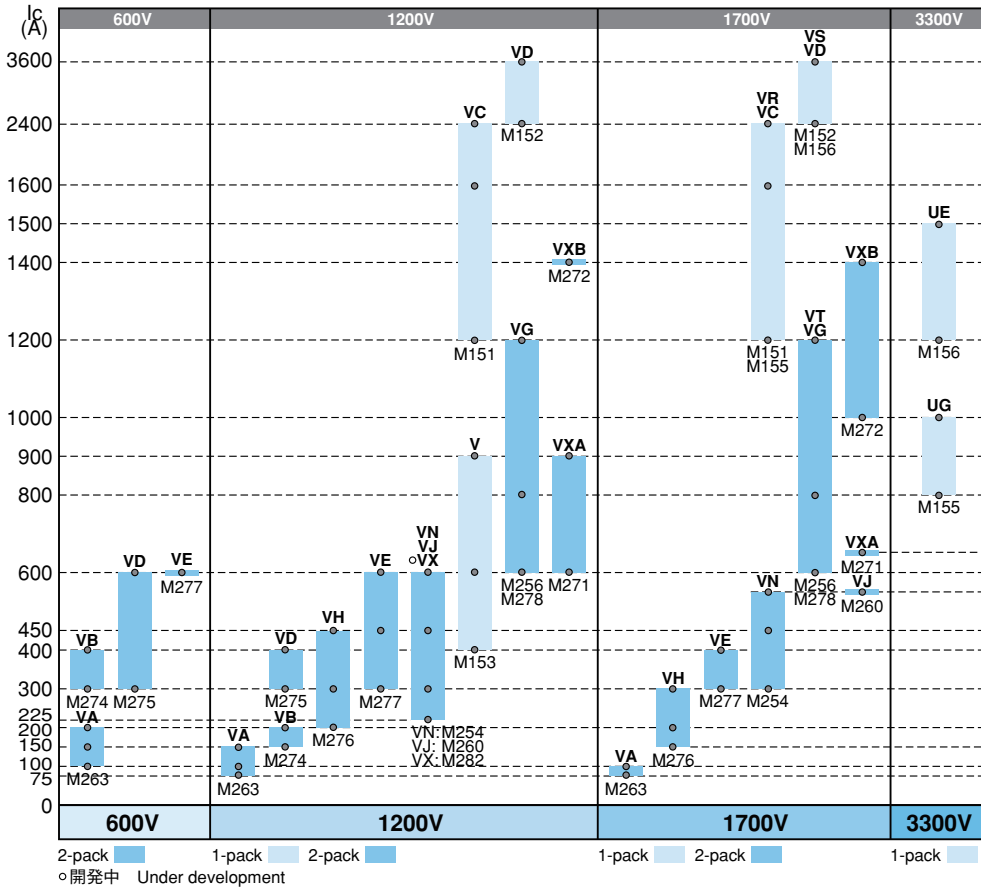
2MBI300VH-120-50 (example)

2	MB	I	300	V	H	120	50
IGBT スイッチ数 Number of IGBT Switches	IGBT モジュール IGBT Module	内部構成 Internal Configuration	Rated Current 定格電流	IGBT デバイス IGBT Device Technology	パッケージ Package Type	最大電圧 Max. V _{CE}	RoHS compliant
		I: Standard Modules	× 1	V: V series (6th Generation)	See the Products Map on the next pages	060: 600V	None, 01 to 49 Non RoHS Compliant
		R: Power Integrated Modules		U: U series (5th Generation)		120: 1200V	50 to 99 RoHS Compliant
		P: Intelligent Power Modules				170: 1700V	
						330: 3300V	

製品系列マップ Products Map

IGBT

● 1-pack / 2-pack Products Map



1-pack

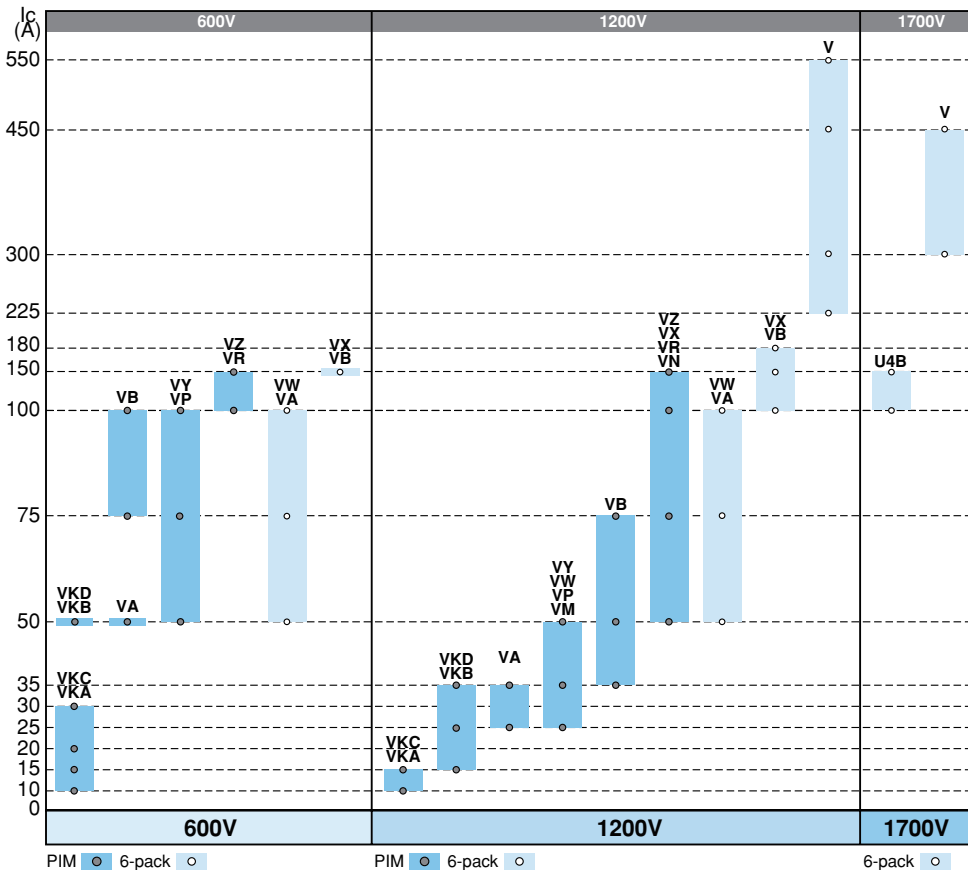
1MBI Ic	IGBT series & Package type	Vces
V	62 × 108 mm	Standard Pack
VC, VR, UG	140 × 130 mm	High Power Module
VD, VS, UE	140 × 190 mm	Module

2-pack

2MBI Ic	IGBT series & Package type	Vces
VA	34 × 94 mm	Standard Pack
VB	45 × 92 mm	
VD	62 × 108 mm	
VE	80 × 110 mm	
VH	62 × 108 mm	
VJ, VN, VX	62 × 150 mm	High Power Module
VG, VT	140 × 130 mm	
VXA	89 × 172 mm	PrimePACK™
VXB	89 × 250 mm	

PrimePACK™はInfineon Technologies社の登録商標です。
PrimePACK™ is registered trademark of Infineon Technologies AG, Germany

● PIM & 6-pack Products Map



Power Integrated Module

7MBR Ic	IGBT series & Package type	Vces
VKA, VKC	33.8 × 62.8 mm	Module
VKB, VKD	56.7 × 62.8 mm	
VA, VM, VP, VW, VY	45 × 107.5 mm	
VB, VN, VR, VX, VZ	62 × 122 mm	

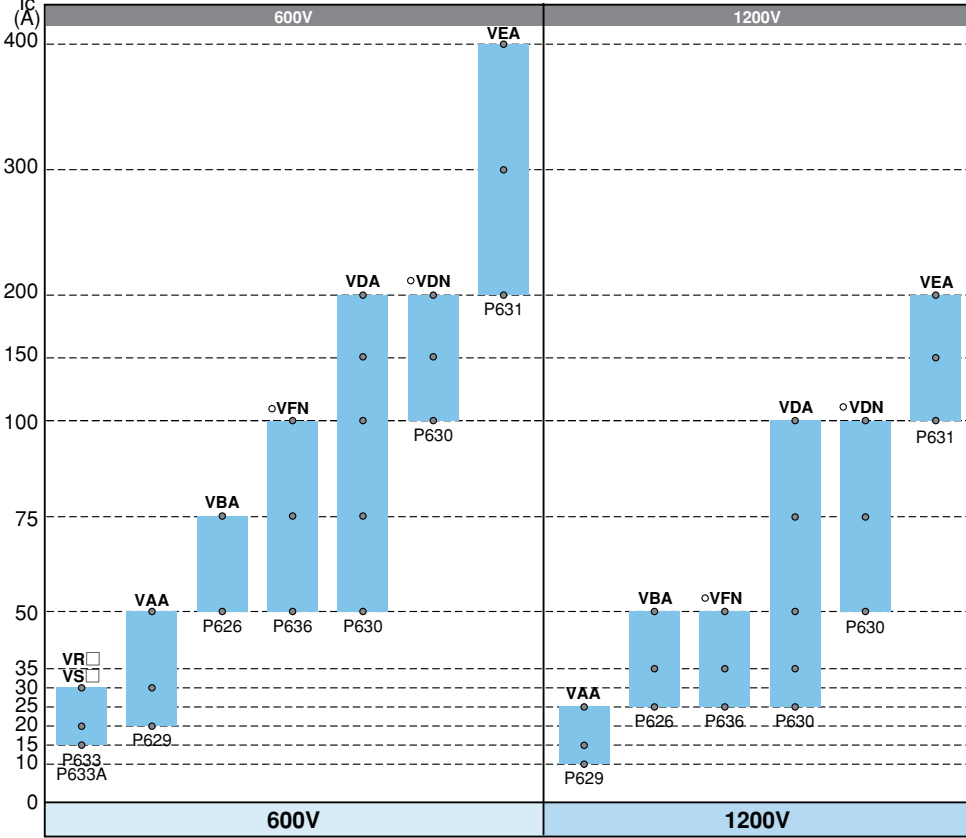
6-pack

6MBI Ic	IGBT series & Package type	Vces
VA, VW	45 × 107.5 mm	Module
VB, VX, U4B	62 × 122 mm	
V	150 × 162 mm	



製品系列マップ Products Map

● Intelligent Power Module Products Map



IGBT series & Package type	- Vces	7 in 1	6 in 1
VR□, VS□	26 × 43 mm	-	○
VAA	49.5 × 70 mm	-	○
VBA	50.2 × 87 mm	-	○
VDA, VDN	84 × 128.5 mm	○	○
VEA	110 × 142 mm	○	○
VFN*	55 × 90 mm	○	○

VR□, VS□, type is Small IPM with High Voltage Driver-IC.
 Thermal impedance of VDN type is lower than VDA type.
 Thermal impedance of VFN type is lower than VBA type.

○開発中 Under development

■ 1個組 1200Vクラス Standard 1-pack 1200 volts class

<p>M153</p>	1200V	
	V series	
	Aluminium oxide DCB	Aluminium nitride DCB
	400A 1MBI400V-120-50	1MBI400VF-120-50
600A 1MBI600V-120-50	1MBI600VF-120-50	
900A 1MBI900V-120-50		

Dimension [mm]

型式 Device type	V _{CES} Volts	V _{GES} Volts	I _C Amps.	P _C Watts	V _{CE(sat)} Typ.	I _C Amps.	スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
							ton Typ.	toff Typ.	tf Typ.		
1MBI400V-120-50	1200	±20	400	2410	1.75	400	0.60	1.10	0.14	M153	380
1MBI600V-120-50	1200	±20	600	3000	1.75	600	0.70	0.90	0.10	M153	380
1MBI900V-120-50	1200	±20	900	4280	1.90	900	0.70	0.85	0.10	M153	380
1MBI400VF-120-50	1200	±20	400	3330	1.75	400	0.60	1.10	0.14	M153	380
1MBI600VF-120-50	1200	±20	600	4680	1.75	600	0.70	0.90	0.10	M153	380

V_{CE(sat)}: at T_J=25°C, Chip

■ チョッパー 600V, 1200Vクラス Chopper 600, 1200 volts class

<p>M262</p>		600V		1200V	
		U series		U series	V series
<p>M259</p>		50A		1MBI50U4F-120L-50	
		75A		1MBI75U4F-120L-50	
		100A		1MBI100U4F-120L-50	
		150A		1MBI150VA-120L-50	
		200A		1MBI200U4H-120L-50	
		300A	1MBI300U2H-060L-50		

Dimension [mm]

型式 Device type	V _{CES} Volts	V _{GES} Volts	I _C Amps.	P _C Watts	V _{CE(sat)} Typ.	I _C Amps.	スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
							ton Typ.	toff Typ.	tf Typ.		
1MBI300U2H-060L-50	600	±20	300	1000	2.45	300	0.40	0.48	0.07	M259	360
1MBI50U4F-120L-50	1200	±20	50	400	2.15	50	0.32	0.41	0.07	M262	180
1MBI75U4F-120L-50	1200	±20	75	400	2.20	75	0.32	0.41	0.07	M262	180
1MBI100U4F-120L-50	1200	±20	100	540	2.20	100	0.32	0.41	0.07	M262	180
1MBI200U4H-120L-50	1200	±20	200	1040	2.25	200	0.32	0.41	0.07	M259	360
● 1MBI150VA-120L-50	1200	±20	150	785	1.85	150	0.60	0.60	0.04	M262	180

●: 新製品 New Products

V_{CE(sat)}: at T_J=25°C, Chip

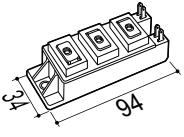
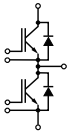
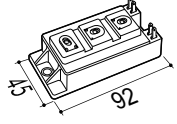
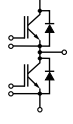
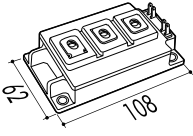
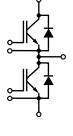
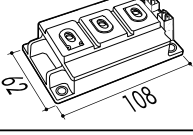
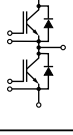
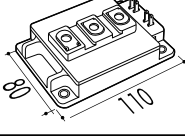
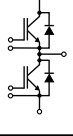
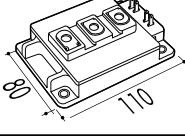
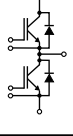
記号 Letter symbols

V _{CES} : コレクタ・エミッタ間電圧	Collector-to-emitter rated voltage (Gate-to-emitter short-circuited)	P _C : 最大損失	Maximum power dissipation
V _{GES} : ゲート・エミッタ間電圧	Gate-to-emitter rated voltage (Collector-to-emitter short-circuited)	V _{CE(sat)} : コレクタ・エミッタ飽和電圧	Collector-to-emitter saturation voltage
I _C : コレクタ電流	Rated collector current	ton: ターンオン時間	Turn-on time
		toff: ターンオフ時間	Turn-off time
		tr: 立下り時間	Fall time



IGBT

■ 2個組 600V, 1200V, 1700Vクラス Standard 2-pack 600, 1200, 1700 volts class

 M263		Ic	600V	1200V	1700V
			V series	V series	V series
 M274		75A		2MBI75VA-120-50	2MBI75VA-170-50
		100A	2MBI100VA-060-50	2MBI100VA-120-50	2MBI100VA-170-50
		150A	2MBI150VA-060-50	2MBI150VA-120-50	
		200A	2MBI200VA-060-50		
 M275		150A		2MBI150VB-120-50	
		200A		2MBI200VB-120-50	
		300A	2MBI300VB-060-50		
		400A	2MBI400VB-060-50		
 M276		300A		2MBI300VD-120-50	
		400A	2MBI400VD-060-50	2MBI400VD-120-50	
		600A	2MBI600VD-060-50		
 M277		150A			2MBI150VH-170-50
		200A		2MBI200VH-120-50	2MBI200VH-170-50
		300A		2MBI300VH-120-50	2MBI300VH-170-50
		450A		2MBI450VH-120-50	
 M277		300A		2MBI300VE-120-50	2MBI300VE-170-50
		400A			2MBI400VE-170-50
		450A		2MBI450VE-120-50	
		600A	2MBI600VE-060-50	2MBI600VE-120-50	

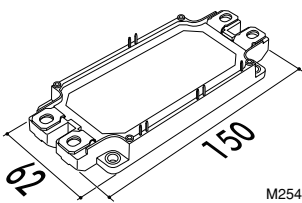
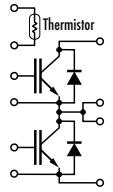
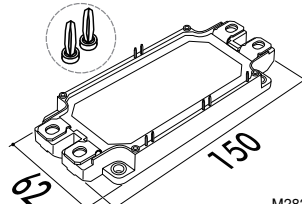
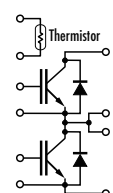
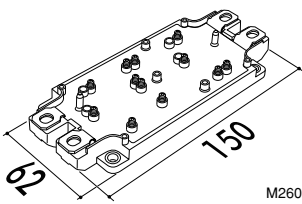
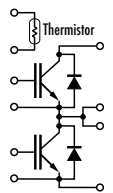
Dimension [mm]

型式 Device type	V _{CES} Volts	V _{GES} Volts	I _c Cont. Amps.	P _c Watts	V _{CE(sat)} (V _{GE} =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					Typ. Volts	I _c Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		Grams
2MBI100VA-060-50	600	±20	100	330	1.60	100	0.65	0.60	0.04	M263	180
2MBI150VA-060-50	600	±20	150	480	1.60	150	0.65	0.60	0.04	M263	180
2MBI200VA-060-50	600	±20	200	640	1.60	200	0.65	0.60	0.04	M263	180
2MBI300VB-060-50	600	±20	300	1360	1.60	300	0.65	0.60	0.07	M274	240
2MBI400VB-060-50	600	±20	400	1970	1.60	400	0.65	0.60	0.07	M274	240
2MBI400VD-060-50	600	±20	400	1970	1.60	400	0.65	0.60	0.07	M275	370
2MBI600VD-060-50	600	±20	600	2940	1.60	600	0.75	0.75	0.07	M275	370
2MBI600VE-060-50	600	±20	600	2940	1.60	600	0.75	0.75	0.07	M277	470
2MBI75VA-120-50	1200	±20	75	390	1.85	75	0.60	0.60	0.04	M263	180
2MBI100VA-120-50	1200	±20	100	555	1.85	100	0.60	0.60	0.04	M263	180
2MBI150VA-120-50	1200	±20	150	785	1.85	150	0.60	0.60	0.04	M263	180
2MBI150VB-120-50	1200	±20	150	1070	1.85	150	0.60	0.80	0.08	M274	240
2MBI200VB-120-50	1200	±20	200	1500	1.75	200	0.60	0.80	0.08	M274	240
2MBI300VD-120-50	1200	±20	300	2200	1.85	300	0.60	0.80	0.08	M275	370
2MBI400VD-120-50	1200	±20	400	3330	1.75	400	0.60	0.80	0.08	M275	370
2MBI200VH-120-50	1200	±20	200	1110	1.75	200	0.60	0.80	0.08	M276	370
2MBI300VH-120-50	1200	±20	300	1600	1.75	300	0.60	0.80	0.08	M276	370
2MBI450VH-120-50	1200	±20	450	2400	1.80	450	0.60	0.80	0.08	M276	370
2MBI300VE-120-50	1200	±20	300	2200	1.85	300	0.60	0.80	0.08	M277	470
2MBI450VE-120-50	1200	±20	450	3350	1.80	450	0.60	0.80	0.08	M277	470
2MBI600VE-120-50	1200	±20	600	4800	1.75	600	0.60	0.80	0.08	M277	470
2MBI75VA-170-50	1700	±20	75	555	2.00	75	1.25	1.30	0.15	M263	180
2MBI100VA-170-50	1700	±20	100	665	2.00	100	1.25	1.30	0.15	M263	180
2MBI150VH-170-50	1700	±20	150	1110	2.00	150	0.95	1.05	0.14	M276	370
2MBI200VH-170-50	1700	±20	200	1250	2.00	200	1.15	1.05	0.14	M276	370
2MBI300VH-170-50	1700	±20	300	1805	2.00	300	1.15	1.05	0.14	M276	370
● 2MBI300VE-170-50	1700	±20	300	2830	2.00	300	1.15	1.05	0.14	M277	470
● 2MBI400VE-170-50	1700	±20	400	3840	2.00	400	1.15	1.05	0.14	M277	470

●: 新製品 New Products

V_{CE(sat)}: at T_j=25°C, Chip

■ 2個組 1200V, 1700Vクラス Standard 2-pack 1200, 1700 volts class

With NTC, solder pins	 M254		Ic	1200V	1700V
				V series	V series
With NTC, Pressfit pins	 M282		225A	2MBI225VN-120-50	
			300A	2MBI300VN-120-50	2MBI300VN-170-50
			450A	2MBI450VN-120-50	2MBI450VN-170-50
			550A		2MBI550VN-170-50
			600A	2MBI600VN-120-50	
With NTC, spring contacts	 M260		225A	2MBI225VJ-120-50	
			300A	2MBI300VJ-120-50	
			450A	2MBI450VJ-120-50	
			550A		2MBI550VJ-170-50
			600A	2MBI600VJ-120-50	

Dimension [mm]

型 式 Device type	V _{CEs} Volts	V _{GES} Volts	I _c Cont. Amps.	P _c Watts	V _{CE(sat)} (V _{GE} =15V) Typ.		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					V _{CE(sat)} Volts	I _c Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	Package	Net mass Grams
2MBI225VN-120-50	1200	±20	225	1070	1.85	225	0.55	1.05	0.11	M254	350
2MBI300VN-120-50	1200	±20	300	1595	1.75	300	0.55	1.05	0.11	M254	350
2MBI450VN-120-50	1200	±20	450	2270	1.75	450	0.55	1.05	0.11	M254	350
2MBI600VN-120-50	1200	±20	600	3750	1.85	600	0.55	1.05	0.11	M254	350
○ 2MBI225VX-120-50	1200	±20	225	1070	1.85	225	0.55	1.05	0.11	M282	350
○ 2MBI300VX-120-50	1200	±20	300	1595	1.85	300	0.55	1.05	0.11	M282	350
○ 2MBI450VX-120-50	1200	±20	450	2270	1.85	450	0.55	1.05	0.11	M282	350
○ 2MBI600VX-120-50	1200	±20	600	3750	1.85	600	0.55	1.05	0.11	M282	350
2MBI225VJ-120-50	1200	±20	225	1070	1.85	225	0.55	1.05	0.11	M260	360
2MBI300VJ-120-50	1200	±20	300	1595	1.75	300	0.55	1.05	0.11	M260	360
2MBI450VJ-120-50	1200	±20	450	2270	1.75	450	0.55	1.05	0.11	M260	360
2MBI600VJ-120-50	1200	±20	600	3750	1.85	600	0.55	1.05	0.11	M260	360
2MBI300VN-170-50	1700	±20	300	1665	2.00	300	0.90	1.30	0.10	M254	350
2MBI450VN-170-50	1700	±20	450	2500	2.00	450	0.90	1.30	0.10	M254	350
2MBI550VN-170-50	1700	±20	550	3750	2.15	550	1.00	1.30	0.10	M254	350
○ 2MBI225VX-170-50	1700	±20	225	1250	2.00	225	0.90	1.20	0.10	M282	350
○ 2MBI300VX-170-50	1700	±20	300	1665	2.00	300	0.90	1.30	0.10	M282	350
○ 2MBI450VX-170-50	1700	±20	450	2500	2.00	450	0.90	1.30	0.10	M282	350
○ 2MBI550VX-170-50	1700	±20	550	3750	2.15	550	1.00	1.30	0.10	M282	350
2MBI550VJ-170-50	1700	±20	550	3750	2.15	550	1.00	1.30	0.10	M260	360

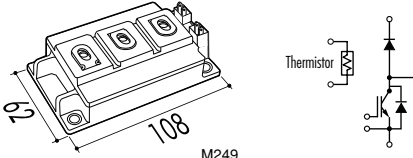
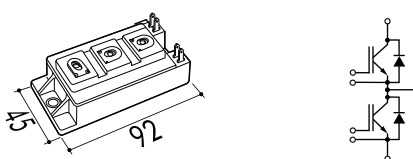
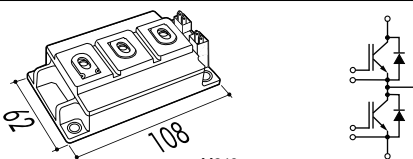
○ : 開発中 Under development

V_{CE(sat)}: at T_j=25°C, Chip

IGBT



■高速IGBTモジュール 1200Vクラス High Speed 1200 volts class

		1200V	
		High Speed IGBT	
Chopper 	Ic	200A	1MBI200HH-120L-50
		300A	1MBI300HH-120L-50
		400A	1MBI400HH-120L-50
2-pack 	100A	2MBI100HB-120-50	
2-pack 	150A	2MBI150HH-120-50	
	200A	2MBI200HH-120-50	

Dimension [mm]

型 式 Device type	V _{CE(S)} Volts	V _{GE(S)} Volts	I _C Cont. Amps.	P _C Watts	V _{CE(sat)} (V _{GE} =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					Typ. Volts	I _C Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		Grams
1MBI200HH-120L-50	1200	±20	200	1390	3.10	200	0.2	0.3	0.05	M249	370
1MBI300HH-120L-50	1200	±20	300	2090	3.20	300	0.2	0.3	0.05	M249	370
1MBI400HH-120L-50	1200	±20	400	2500	3.10	400	0.2	0.4	0.05	M249	370
2MBI100HB-120-50	1200	±20	100	1040	3.10	100	-	0.30	0.05	M233	240
2MBI150HH-120-50	1200	±20	150	1390	3.20	150	-	0.30	0.05	M249	370
2MBI200HH-120-50	1200	±20	200	1790	3.10	200	-	0.30	0.05	M249	370

V_{CE(sat)}: at T_j=25°C, Chip

■ハイパワーモジュール 1200V, 1700V, 3300Vクラス
High Power Module 1200, 1700, 3300 volts class

1-pack		Ic	1200V	1700V		3300V
			V series	V series		U Series
			Cu-baseplate	Cu-baseplate	AlSiC-baseplate	AlSiC-baseplate
		800A				1MBI800UG-330
		1000A				1MBI1000UG-330
		1200A	1MBI1200VC-120P	1MBI1200VC-170E	1MBI1200VR-170E	
		1600A	1MBI1600VC-120P	1MBI1600VC-170E	1MBI1600VR-170E	
		2400A	1MBI2400VC-120P	1MBI2400VC-170E	1MBI2400VR-170E	
1-pack		1200A				1MBI1200UE-330
		1500A				1MBI1500UE-330
		2400A	1MBI2400VD-120P	1MBI2400VD-170E	1MBI2400VS-170E	
		3600A	1MBI3600VD-120P	1MBI3600VD-170E	1MBI3600VS-170E	

Dimension [mm]

型 式 Device type	V _{CES} Volts	V _{GES} Volts	I _c Cont. Amps.	P _c Watts	V _{CE(sat)} (V _{GE} =15V)		スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
					Typ. Volts	I _c Amps.	ton Typ. µsec.	toff Typ. µsec.	tf Typ. µsec.		
1MBI1200VC-120P	1200	±20	1200	7890	1.70	1200	1.73	1.52	0.15	M151	1500
1MBI1600VC-120P	1200	±20	1600	10340	1.70	1600	2.22	1.47	0.19	M151	1500
1MBI2400VC-120P	1200	±20	2400	13630	1.70	2400	3.15	1.93	0.24	M151	1500
1MBI2400VD-120P	1200	±20	2400	15780	1.70	2400	2.38	1.64	0.21	M152	2300
1MBI3600VD-120P	1200	±20	3600	20540	1.70	3600	2.98	2.15	0.27	M152	2300
1MBI1200VC-170E	1700	±20	1200	8820	2.00	1200	2.18	2.20	0.45	M151	1500
1MBI1600VC-170E	1700	±20	1600	11700	2.00	1600	2.28	2.17	0.40	M151	1500
1MBI2400VC-170E	1700	±20	2400	15000	2.00	2400	2.63	2.41	0.38	M151	1500
1MBI2400VD-170E	1700	±20	2400	17640	2.00	2400	2.30	2.22	0.43	M152	2300
1MBI3600VD-170E	1700	±20	3600	22380	2.00	3600	2.27	2.67	0.31	M152	2300
1MBI1200VR-170E	1700	±20	1200	8570	2.00	1200	1.51	2.20	0.45	M155	900
1MBI1600VR-170E	1700	±20	1600	10710	2.00	1600	1.83	2.17	0.40	M155	900
1MBI2400VR-170E	1700	±20	2400	14010	2.00	2400	2.51	2.41	0.38	M155	900
1MBI2400VS-170E	1700	±20	2400	16120	2.00	2400	2.09	2.22	0.43	M156	1300
1MBI3600VS-170E	1700	±20	3600	21120	2.00	3600	2.70	2.66	0.32	M156	1300
1MBI800UG-330	3300	±20	800	9600	2.28	800	3.40	2.40	0.40	M155	900
1MBI1000UG-330	3300	±20	1000	10400	2.46	1000	2.50	2.00	0.50	M155	900
1MBI1200UE-330	3300	±20	1200	14700	2.28	1200	3.40	2.40	0.40	M156	1300
1MBI1500UE-330	3300	±20	1500	15600	2.46	1500	3.10	2.00	0.50	M156	1300

Note: M151, M152: Cu-baseplate M155, M156: AlSiC-baseplate V_{CE(sat)}: at T_j=25°C, Chip Switching time: at T_j=125°C, at T_j=150°C (3300V type only)

2-pack		Ic	1200V	1700V		3300V
			V series	V series		U Series
			Cu-baseplate	Cu-baseplate	AlSiC-baseplate	AlSiC-baseplate
		600A	2MBI600VG-120P	2MBI600VG-170E	2MBI600VT-170E	
		800A	2MBI800VG-120P	2MBI800VG-170E	2MBI800VT-170E	
		1200A	2MBI1200VG-120P	2MBI1200VG-170E	2MBI1200VT-170E	

Dimension [mm]

型 式 Device type	V _{CES} Volts	V _{GES} Volts	I _c Cont. Amps.	P _c Watts	V _{CE(sat)} (V _{GE} =15V)		スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
					Typ. Volts	I _c Amps.	ton Typ. µsec.	toff Typ. µsec.	tf Typ. µsec.		
2MBI600VG-120P	1200	±20	600	3940	1.70	600	1.86	1.25	0.12	M256	1500
2MBI800VG-120P	1200	±20	800	5170	1.70	800	1.97	1.33	0.15	M256	1500
2MBI1200VG-120P	1200	±20	1200	6810	1.70	1200	2.55	1.67	0.16	M256	1500
2MBI600VG-170E	1700	±20	600	4410	2.00	600	2.28	2.07	0.58	M256	1500
2MBI800VG-170E	1700	±20	800	5760	2.00	800	2.41	2.13	0.55	M256	1500
2MBI1200VG-170E	1700	±20	1200	7500	2.00	1200	2.76	2.29	0.33	M256	1500
2MBI600VT-170E	1700	±20	600	4280	2.00	600	1.51	2.07	0.58	M278	900
2MBI800VT-170E	1700	±20	800	5370	2.00	800	2.00	2.13	0.55	M278	900
2MBI1200VT-170E	1700	±20	1200	7040	2.00	1200	2.14	2.29	0.33	M278	900

Note: M256: Cu-baseplate M278: AlSiC-baseplate

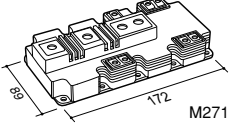




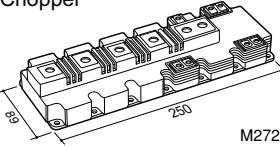




V_{CE(sat)}: at T_j=25°C, Chip Switching time: at T_j=125°C



パワーデバイス/Power Devices (IGBT)

IGBT

PrimePACK™ 1200V, 1700Vクラス PrimePACK™ 1200, 1700 volts class

Chopper	Low Side Thermistor	High Side Thermistor	Ic	1200V		1700V	
				V series		V series	
				Soft turn off Low side configuration	Soft turn off High side configuration	Low switching loss Low side configuration	Low switching loss High side configuration
 M271	 	 	650A			1MBI650VXA-170EL-50	1MBI650VXA-170EH-50
						1MBI650VXA-170EL-54	1MBI650VXA-170EH-54
 M272	 	 	1000A			1MBI1000VXB-170EL-50	1MBI1000VXB-170EH-50
						1MBI1000VXB-170EL-54	1MBI1000VXB-170EH-54
			1400A	1MBI1400VXB-120PL-54	1MBI1400VXB-120PH-54		

Dimension [mm]

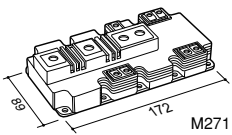




型 式 Device type	V _{CES} Volts	V _{GES} Volts	I _c Cont. Amps.	P _c Watts	V _{CE(sat)} (V _{GE} =15V)		スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
					Typ. Volts	I _c Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		
1MBI1400VXB-120PL-54	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
1MBI1400VXB-120PH-54	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
1MBI650VXA-170EL-50	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI650VXA-170EL-54	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI1000VXB-170EL-50	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1000VXB-170EL-54	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI650VXA-170EH-50	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI650VXA-170EH-54	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
1MBI1000VXB-170EH-50	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
1MBI1000VXB-170EH-54	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250

注: PrimePACK™はInfineon Technologies社の登録商標です。
-54…V_{sat}及びV_Fのランクをラベルに表示

V_{CE(sat)}: at T_j=25°C, Chip

Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

The products with suffix '-54' on this page are labeled to specify the rank of V_{sat} and V_F.

Chopper	Low Side Thermistor	High Side Thermistor	Ic	1200V		1700V	
				V series		V series	
				Boost (Low side) Chopper	Buck (High side) Chopper	Boost (Low side) Chopper	Buck (High side) Chopper
 M271	 	 	900A	1MBI900VXA-120PD-50	1MBI900VXA-120PC-50		
				1MBI900VXA-120PD-54	1MBI900VXA-120PC-54		

Dimension [mm]

型 式 Device type	V _{CES} Volts	V _{GES} Volts	I _c Cont. Amps.	P _c Watts	V _{CE(sat)} (V _{GE} =15V)		スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
					Typ. Volts	I _c Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		
1MBI900VXA-120PC-50	1200	±20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PC-54	1200	±20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PD-50	1200	±20	900	5100	1.65	900	1.10	1.20	0.15	M271	850
1MBI900VXA-120PD-54	1200	±20	900	5100	1.65	900	1.10	1.20	0.15	M271	850

注: PrimePACK™はInfineon Technologies社の登録商標です。

-54…V_{sat}及びV_Fのランクをラベルに表示

逆並列接続ダイオードの電流定格は120Aです。Boost/Buck chopper回路にのみ適用願います。

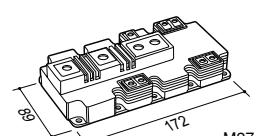
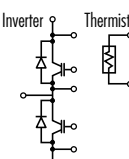
Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

The products with suffix '-54' on this page are labeled to specify the rank of V_{sat} and V_F.

Antiparallel diode current rating is 120A. Application circuit is Boost/Buck chopper only.

V_{CE(sat)}: at T_j=25°C, Chip

PrimePACK™ 1200V, 1700Vクラス PrimePACK™ 1200, 1700 volts class

2-pack	 M271	 Inverter Thermistor	1200V		1700V	
			V series			
			Low switching loss	Soft turn off	Low switching loss	Soft turn off
600A			2MBI600VXA-120E-50			
			2MBI600VXA-120E-54			
650A					2MBI650VXA-170E-50	
					2MBI650VXA-170E-54	
					2MBI650VXA-170EA-50	
					2MBI650VXA-170EA-54	
900A			2MBI900VXA-120E-50	2MBI900VXA-120P-50		
			2MBI900VXA-120E-54	2MBI900VXA-120P-54		
1000A					2MBI1000VXB-170E-50	
					2MBI1000VXB-170E-54	
					2MBI1000VXB-170EA-50	
					2MBI1000VXB-170EA-54	
1400A			2MBI1400VXB-120E-50	2MBI1400VXB-120P-50	2MBI1400VXB-170E-50	2MBI1400VXB-170P-50
			2MBI1400VXB-120E-54	2MBI1400VXB-120P-54	2MBI1400VXB-170E-54	2MBI1400VXB-170P-54

Dimension [mm]

型 式 Device type	V _{CEs} Volts	V _{GES} Volts	I _c Cont. Amps.	P _c Watts	V _{CE(sat)} (V _{GE} =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
					Typ. Volts	I _c Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	Package	Net mass Grams
2MBI600VXA-120E-50	1200	±20	600	3350	1.75	600	1.00	1.20	0.15	M271	850
2MBI600VXA-120E-54	1200	±20	600	3350	1.75	600	1.00	1.20	0.15	M271	850
2MBI900VXA-120E-50	1200	±20	900	5100	1.75	900	1.00	1.20	0.15	M271	850
2MBI900VXA-120E-54	1200	±20	900	5100	1.75	900	1.00	1.20	0.15	M271	850
● 2MBI1400VXB-120E-50	1200	±20	1400	7650	1.75	1400	1.00	1.20	0.15	M272	1250
● 2MBI1400VXB-120E-54	1200	±20	1400	7650	1.75	1400	1.00	1.20	0.15	M272	1250
2MBI900VXA-120P-50	1200	±20	900	5100	1.65	900	1.00	1.20	0.15	M271	850
2MBI900VXA-120P-54	1200	±20	900	5100	1.65	900	1.00	1.20	0.15	M271	850
● 2MBI1400VXB-120E-50	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
● 2MBI1400VXB-120P-54	1200	±20	1400	7650	1.65	1400	1.00	1.20	0.15	M272	1250
2MBI650VXA-170E-50	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
2MBI650VXA-170E-54	1700	±20	650	4150	2.00	650	1.25	1.55	0.15	M271	850
● 2MBI650VXA-170EA-50	1700	±20	650	4150	2.00	650	1.70	1.60	0.11	M271	850
● 2MBI650VXA-170EA-54	1700	±20	650	4150	2.00	650	1.70	1.60	0.11	M271	850
2MBI1000VXB-170E-50	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
2MBI1000VXB-170E-54	1700	±20	1000	6250	2.00	1000	1.25	1.55	0.15	M272	1250
● 2MBI1000VXB-170EA-50	1700	±20	1000	6250	2.00	1000	1.70	1.60	0.11	M272	1250
● 2MBI1000VXB-170EA-54	1700	±20	1000	6250	2.00	1000	1.70	1.60	0.11	M272	1250
2MBI1400VXB-170E-50	1700	±20	1400	8820	2.15	1400	1.25	1.55	0.15	M272	1250
2MBI1400VXB-170E-54	1700	±20	1400	8820	2.15	1400	1.25	1.55	0.15	M272	1250
2MBI1400VXB-170P-50	1700	±20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250
2MBI1400VXB-170P-54	1700	±20	1400	8820	1.90	1400	1.35	1.80	0.20	M272	1250

●: 新製品 New Products

V_{CE(sat)}: at T_j=25°C, Chip

注: PrimePACK™はInfineon Technologies社の登録商標です。

-54...V_{sat}及びV_Fのランクをラベルに表示

本ページでEAの付く型式は、ダイオードの負荷が厳しいアプリケーションに対応し、FWDを最適化したことにより、V_Fおよび熱抵抗を低減。

Note: PrimePACK™ is registered trademark of Infineon Technologies AG, Germany.

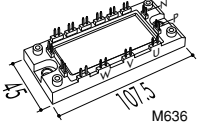
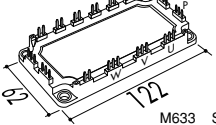
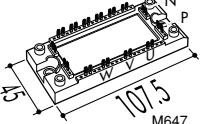
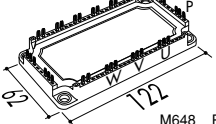
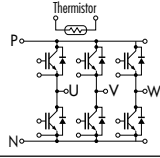
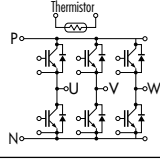
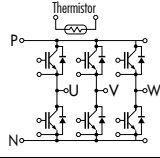
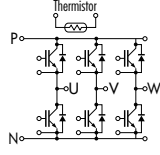
The products with suffix '-54' on this page are labeled to specify the rank of V_{sat} and V_F.

The products with 'EA' on this page have optimized FWD for the application causing heavy load through FWD. The optimized FWD reduces V_F and thermal resistance.



IGBT

■ 6個組 EconoPACK™ 600V, 1200V, 1700Vクラス
6-pack EconoPACK™ 600, 1200, 1700 volts class

With NTC, solder pins	 M636 Solder pins  M633 Solder pins  M647 Press fit pins  M648 Press fit pins	   	600V		1200V		1700V	
			Ic	V series	V series	U series		
			50A	6MBI50VA-060-50	6MBI50VA-120-50			
			75A	6MBI75VA-060-50	6MBI75VA-120-50			
			100A	6MBI100VA-060-50	6MBI100VA-120-50			
			100A		6MBI100VB-120-50	6MBI100U4B-170-50		
			150A	6MBI150VB-060-50	6MBI150VB-120-50	6MBI150U4B-170-50		
			180A		6MBI180VB-120-50			
					6MBI180VB-120-55			
			50A	6MBI50VW-060-50	6MBI50VW-120-50			
			75A	6MBI75VW-060-50	6MBI75VW-120-50			
			100A	6MBI100VW-060-50	6MBI100VW-120-50			
			100A		6MBI100VX-120-50			
			150A	6MBI150VX-060-50	6MBI150VX-120-50			
			180A		6MBI180VX-120-50			
					6MBI180VX-120-55			

Dimension [mm]

型 式 Device type	V _{CES} Volts	V _{GES} Volts	I _C Cont. Amps.	P _C Watts	V _{CE(sat)} Typ. Volts	V _{GE=15V} I _C Amps.	スイッチングタイム Switching time			パッケージ 質量 Package Net mass	
							t _{on} Typ. μsec.	t _{off} Typ. μsec.	t _f Typ. μsec.		Grams
6MBI50VA-060-50	600	±20	50	200	1.6	50	0.36	0.52	0.03	M636	180
6MBI75VA-060-50	600	±20	75	275	1.6	75	0.36	0.52	0.03	M636	180
6MBI100VA-060-50	600	±20	100	335	1.6	100	0.36	0.52	0.03	M636	180
6MBI150VB-060-50	600	±20	150	485	1.6	150	0.36	0.52	0.03	M633	300
6MBI50VW-060-50	600	±20	50	215	1.6	50	0.36	0.52	0.03	M647	200
6MBI75VW-060-50	600	±20	75	300	1.6	75	0.36	0.52	0.03	M647	200
6MBI100VW-060-50	600	±20	100	335	1.6	100	0.36	0.52	0.03	M647	200
6MBI150VX-060-50	600	±20	150	485	1.6	150	0.36	0.52	0.03	M648	300
6MBI50VA-120-50	1200	±20	50	280	1.85	50	0.39	0.53	0.06	M636	180
6MBI75VA-120-50	1200	±20	75	385	1.85	75	0.39	0.53	0.06	M636	180
6MBI100VA-120-50	1200	±20	100	520	1.75	100	0.39	0.53	0.06	M636	180
6MBI100VB-120-50	1200	±20	100	520	1.75	100	0.39	0.53	0.06	M633	300
6MBI150VB-120-50	1200	±20	150	770	1.75	150	0.39	0.53	0.06	M633	300
6MBI180VB-120-50	1200	±20	150	835	1.85	200	0.39	0.53	0.06	M633	300
6MBI180VB-120-55	1200	±20	150	1075	1.85	200	0.39	0.53	0.06	M633	300
6MBI50VW-120-50	1200	±20	50	280	1.85	50	0.39	0.53	0.06	M647	200
6MBI75VW-120-50	1200	±20	75	385	1.85	75	0.39	0.53	0.06	M647	200
6MBI100VW-120-50	1200	±20	100	520	1.75	100	0.39	0.53	0.06	M647	200
6MBI100VX-120-50	1200	±20	100	520	1.75	100	0.39	0.53	0.06	M648	300
6MBI150VX-120-50	1200	±20	150	770	1.75	150	0.39	0.53	0.06	M648	300
6MBI180VX-120-50	1200	±20	150	835	1.85	200	0.39	0.53	0.06	M648	300
6MBI180VX-120-55	1200	±20	150	1075	1.85	200	0.39	0.53	0.06	M648	300
6MBI100U4B-170-50	1700	±20	100	520	2.25	100	0.62	0.55	0.09	M633	300
6MBI150U4B-170-50	1700	±20	150	735	2.25	150	0.62	0.55	0.09	M633	300

注: EconoPACK™はInfineon Technologies社の登録商標です。

6MBI180VB-120-55, 6MBI180VX-120-55は低熱抵抗パッケージ適用

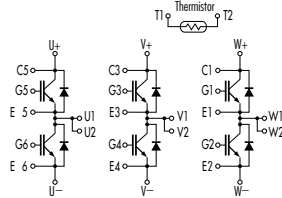
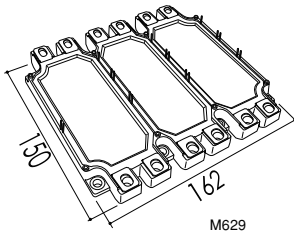
Note: EconoPACK™ is registered trademarks of Infineon Technologies AG, Germany.

6MBI180VB-120-55, 6MBI180VX-120-55; Premium type (Low Thermal Impedance Version)

V_{CE(sat)}: at T_j=25°C, Chip

■ 6個組 EconoPACK™+ 1200V, 1700Vクラス
6-pack EconoPACK™+ 1200, 1700 volts class

With NTC, High power 6-pack



Ic	1200V	1700V
	V series	V series
225A	6MBI225V-120-50	
300A	6MBI300V-120-50	6MBI300V-170-50
450A	6MBI450V-120-50	6MBI450V-170-50
550A	6MBI550V-120-50	

Dimension [mm]

型 式 Device type	V _{CEs} Volts	V _{GES} Volts	I _c Amps.	P _c Watts	V _{CE(sat)} (V _{GE} =15V)		スイッチングタイム Switching time			パッケージ 質量 Package Net mass Grams
					Typ.	I _c	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.	
6MBI225V-120-50	1200	±20	225	1070	1.85	225	0.55	1.05	0.11	M629 950
6MBI300V-120-50	1200	±20	300	1600	1.75	300	0.55	1.05	0.11	M629 950
6MBI450V-120-50	1200	±20	450	2250	1.75	450	0.55	1.05	0.11	M629 950
6MBI550V-120-50	1200	±20	550	2500	1.85	600	0.55	1.05	0.11	M629 950
6MBI300V-170-50	1700	±20	300	1665	2.00	300	0.90	1.30	0.10	M629 950
6MBI450V-170-50	1700	±20	450	2500	2.00	450	0.90	1.30	0.10	M629 950

注: EconoPACK™+はInfineon Technologies社の登録商標です。

Note: EconoPACK™+ is registered trademarks of Infineon Technologies AG, Germany.

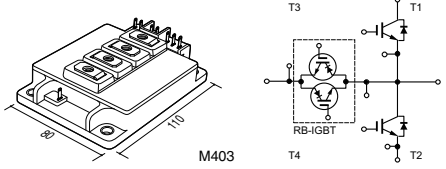
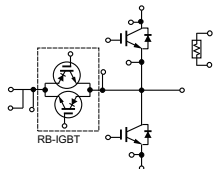
V_{CE(sat)}: at T_j=25°C, Chip



■アドバンスドTタイプNPC3レベル回路 600V, 1200Vクラス Advanced T-type NPC 3-level Circuits 600, 1200 volts class

■特長 Features

- 電力変換効率に優れた T タイプ NPC3 レベル回路に対応
- 1 アームまたは 3 アーム (3 相分) を 1 パッケージに搭載、またモジュールの外部配線が容易
- 低パッケージ内部インダクタンスにより低サージ電圧を実現
- AC-SW 部には RB-IGBT を採用、低損失を実現
- メイン SW 部には最新第 6 世代 IGBT,FWD を採用し低損失を実現
- Applicable to T-type NPC 3-level circuit, for highest power conversion efficiency.
- There are 1-arm or 3-arm (3 phase) circuits in one package and it is easier to makes external wiring of module.
- Lower surge voltage by smaller internal package stray inductance.
- Lower power loss can be achieved by using RB-IGBT as for AC-SW device.
- Lowest power loss can be achieved by using 6th Gen. IGBT and FWD as for Main-SW device.

1-arm		Ic	600V		1200V	
			V series	RB-IGBT	V series	RB-IGBT
1-arm		300A			4MBI300VG-120R-50	600V
		400A	4MBI400VG-060R-50	600V	4MBI300VG-120R1-50	900V
					4MBI400VF-120R-50	600V
		450A			4MBI450VB-120R1-50	900V
		650A			4MBI650VB-120R1-50	900V
		900A			4MBI900VB-120R1-50	900V

Dimension [mm]

型 式 Device type	T1, T2					T3, T4					パッケージ Package	質量 Net mass
	V _{CES}	I _c	P _C	V _{CE(sat)} (V _{GE} =15V)		V _{CES}	I _c	P _C	V _{CE(sat)} (V _{GE} =15V)			
	Volts	Cont. Amps.	Watts	Typ. Volts	I _c Amps.	Volts	Cont. Amps.	Watts	Typ. Volts	I _c Amps.		
4MBI400VG-060R-50	600	400	1135	1.60	400	600	400	1560	2.45	400	M403	460
4MBI300VG-120R-50	1200	300	1250	1.85	300	600	300	1250	2.45	300	M403	460
○ 4MBI300VG-120R1-50	1200	300	1250	1.85	300	900	300	1300	2.40	300	M403	460
○ 4MBI400VF-120R-50	1200	400	1835	2.00	400	600	450	2230	2.45	400	M403	460
○ 4MBI450VB-120R1-50	1200	450	TBD	TBD	450	900	450	TBD	TBD	450	M404	TBD
○ 4MBI650VB-120R1-50	1200	650	TBD	TBD	650	900	650	TBD	TBD	650	M404	TBD
○ 4MBI900VB-120R1-50	1200	900	TBD	TBD	900	900	900	TBD	TBD	900	M404	TBD

○:開発中 Under development

注: 製品名にVFが含まれる型式は低熱抵抗パッケージ適用
Note: Vf type is lower thermal resistance version.

V_{CE(sat)}: at T_j=25°C, Chip

3-arm M1203		600V		1200V	
		V series	RB-IGBT	V series	RB-IGBT
3-arm M1202		50A		12MBI50VN-120-50	600V
		75A		12MBI75VN-120-50	600V
		100A		12MBI100VN-120-50	600V
		50A		12MBI50VX-120-50	600V
		75A		12MBI75VX-120-50	600V
		100A		12MBI100VX-120-50	600V

Dimension [mm]

型 式 Device type	T1, T2					T3, T4					パッケージ Package	質量 Net mass
	V _{CES}	I _C	P _C	V _{CE(sat)} (V _{GE} =15V)		V _{CES}	I _C	P _C	V _{CE(sat)} (V _{GE} =15V)			
	Volts	Cont. Amps.	Watts	Typ. Volts	I _C Amps.	Volts	Cont. Amps.	Watts	Typ. Volts	I _C Amps.		
● 12MBI50VN-120-50	1200	50	230	1.85	50	600	50	235	2.45	50	M1203	302
● 12MBI75VN-120-50	1200	75	320	1.85	75	600	75	305	2.45	75	M1203	302
● 12MBI100VN-120-50	1200	100	430	1.75	100	600	100	400	2.45	100	M1203	302
● 12MBI50VX-120-50	1200	50	230	1.85	50	600	50	235	2.45	50	M1202	302
● 12MBI75VX-120-50	1200	75	320	1.85	75	600	75	305	2.45	75	M1202	302
● 12MBI100VX-120-50	1200	100	430	1.75	100	600	100	400	2.45	100	M1202	302

●:新製品 New Products

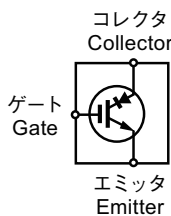
V_{CE(sat)}: at T_J=25°C, Chip

■ ディスクリートRB-IGBT Discrete RB-IGBT Reverse Blocking IGBT

■ 特長 Features

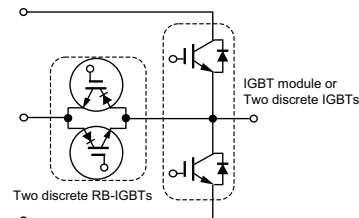
- 富士電機の独自技術により、逆耐圧特性を有する IGBT を 1 チップで実現
- 3 レベルインバータ (T タイプ) への適用で高効率を実現
- 鉛フリー
- Reverse blocking character is realized for 1 chip by Fuji's original technology.
- High efficiency by applying to T-type 3 level inverter circuit.
- Lead Free Package

■ 等価回路 Equivalent circuit



■ 適用例 Application

- Advanced T-type NPC 3-Level circuits



■ 特性 Characteristics

型 式 Device type	絶対最大定格 Maximum Ratings					V _{CE(sat)} (V _{GE} =15V) Typ. Volts	E _{on} (R _g =10Ω) typ. mJ	E _{off} mJ	Q _g typ. nC	trr typ. n sec	パッケージ Package	質量 Net mass Grams
	V _{CES}	I _C	I _{CP}	t _{sc}	P _D							
	Volts	Amps.	Amps.	μsec.	Watts							
FGW85N60RB	600	85	170	10	600	2.45	4.7	2.4	300	165	TO-247-P2	6.0



■小容量PIM（コンバータ部、ブレーキ部内蔵）600V, 1200Vクラス
Small PIM/Built-in converter and brake 600, 1200 volts class

With NTC, press fit pins	ic	600V	1200V
		V series	V series
<p>M726 Press fit pins</p>	10A	7MBR10VKA060-50	7MBR10VKA120-50
	15A	7MBR15VKA060-50	7MBR15VKA120-50
	20A	7MBR20VKA060-50	
	30A	7MBR30VKA060-50	
<p>M727 Press fit pins</p>	15A		7MBR15VKB120-50
	25A		7MBR25VKB120-50
	35A		7MBR35VKB120-50
	50A	7MBR50VKB060-50	
<p>M728 Solder pins</p>	10A	7MBR10VKC060-50	7MBR10VKC120-50
	15A	7MBR15VKC060-50	7MBR15VKC120-50
	20A	7MBR20VKC060-50	
	30A	7MBR30VKC060-50	
<p>M729 Solder pins</p>	15A		7MBR15VKD120-50
	25A		7MBR25VKD120-50
	35A		7MBR35VKD120-50
	50A	7MBR50VKD060-50	

Dimension [mm]

型 式 Device type	インバータ部 Inverter [IGBT]				ブレーキ部 Brake [IGBT+FWD]			コンバータ部 Converter [Diode]		パッケージ Package	質量 Net mass Grams		
	V _{CES}	I _c	P _c	V _{CE(sat)}	V _{CES}	I _c	V _{RRM}	V _{RRM}	I _o				
	Volts	Cont. Amps.	Watts	Typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Typ. Amps.				
7MBR10VKA060-50	600	10	65	1.70	600	10	600	800	10	0.95	360	M726	25
7MBR15VKA060-50	600	15	80	1.70	600	15	600	800	15	1.00	360	M726	25
7MBR20VKA060-50	600	20	90	1.70	600	20	600	800	20	1.05	360	M726	25
7MBR30VKA060-50	600	30	115	1.70	600	30	600	800	30	1.15	360	M726	25
7MBR50VKB060-50	600	50	180	1.60	600	50	600	800	50	1.25	580	M727	45
7MBR10VKC060-50	600	10	65	1.70	600	10	600	800	10	0.95	360	M728	25
7MBR15VKC060-50	600	15	80	1.70	600	15	600	800	15	1.00	360	M728	25
7MBR20VKC060-50	600	20	90	1.70	600	20	600	800	20	1.05	360	M728	25
7MBR30VKC060-50	600	30	115	1.70	600	30	600	800	30	1.15	360	M728	25
7MBR50VKD060-50	600	50	180	1.60	600	50	600	800	50	1.25	580	M729	45
7MBR10VKA120-50	1200	10	110	1.85	1200	10	1200	1600	10	0.95	245	M726	25
7MBR15VKA120-50	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M726	25
7MBR15VKB120-50	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M727	45
7MBR25VKB120-50	1200	25	180	1.85	1200	25	1200	1600	25	1.00	370	M727	45
7MBR35VKB120-50	1200	35	215	1.85	1200	35	1200	1600	35	1.05	370	M727	45
7MBR10VKC120-50	1200	10	110	1.85	1200	10	1200	1600	10	0.95	245	M728	25
7MBR15VKC120-50	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M728	25
7MBR15VKD120-50	1200	15	135	1.90	1200	15	1200	1600	15	1.00	245	M729	45
7MBR25VKD120-50	1200	25	180	1.85	1200	25	1200	1600	25	1.00	370	M729	45
7MBR35VKD120-50	1200	35	215	1.85	1200	35	1200	1600	35	1.05	370	M729	45

V_{CE(sat)}, V_{FM}: at T_j=25°C, Chip

■ PIM (コンバータ部、ブレーキ部内蔵) EconoPIM™ 600V, 1200Vクラス
PIM/Built-in converter and brake EconoPIM™ 600, 1200 volts class

With NTC, solder pins, PIM		Thermistor Circuit Diagram	Power Flow Diagram	Ic	600V	1200V
Device Type					V series	V series
M711	[Image]	[Circuit]	[Flow]	25A		7MBR25VA120-50
				35A		7MBR35VA120-50
				50A	7MBR50VA060-50	
M712	[Image]	[Circuit]	[Flow]	35A		7MBR35VB120-50
				50A		7MBR50VB120-50
				75A	7MBR75VB060-50	7MBR75VB120-50
M719	[Image]	[Circuit]	[Flow]	25A		7MBR25VM120-50
				35A		7MBR35VM120-50
				50A		7MBR50VM120-50
M720	[Image]	[Circuit]	[Flow]	50A		7MBR50VN120-50
				75A		7MBR75VN120-50
				100A		7MBR100VN120-50
M719	[Image]	[Circuit]	[Flow]	100A		7MBR100VP060-50
				150A		7MBR150VP120-50
				25A		7MBR25VP120-50
M720	[Image]	[Circuit]	[Flow]	35A		7MBR35VP120-50
				50A	7MBR50VP060-50	7MBR50VP120-50
				75A	7MBR75VP060-50	
M719	[Image]	[Circuit]	[Flow]	100A	7MBR100VR060-50	7MBR100VR120-50
				150A	7MBR150VR060-50	7MBR150VR120-50
				50A		7MBR50VR120-50
M720	[Image]	[Circuit]	[Flow]	75A		7MBR75VR120-50
				100A	7MBR100VR060-50	7MBR100VR120-50
				150A	7MBR150VR060-50	7MBR150VR120-50

Dimension [mm]

型 式 Device type	インバータ部 Inverter [IGBT]				ブレーキ部 Brake [IGBT+FWD]			コンバータ部 Converter [Diode]				パッケージ Package	質量 Net mass Grams
	V _{CEs} Volts	I _c Cont. Amps.	P _c Watts	V _{CE(sat)} Typ. Volts	V _{CEs} Volts	I _c Cont. Amps.	V _{RRM} Volts	V _{RRM} Volts	I _o Cont. Amps.	V _{FM} Typ. Volts	I _{FSM} Amps.		
7MBR50VA060-50	600	50	200	1.6	600	50	600	800	50	1.3	210	M711	180
7MBR75VB060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M712	300
7MBR100VB060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M712	300
7MBR50VP060-50	600	50	200	1.6	600	50	600	800	50	1.3	210	M719	200
7MBR75VP060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M719	200
7MBR100VP060-50	600	100	430	1.85	600	50	600	800	100	1.25	700	M719	200
7MBR100VR060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M720	310
7MBR150VR060-50	600	150	485	1.6	600	75	600	800	150	1.25	700	M720	310
7MBR25VA120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M711	180
7MBR35VA120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M711	180
7MBR35VB120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M712	300
7MBR50VB120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M712	300
7MBR75VB120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M712	300
7MBR25VM120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M719	200
7MBR35VM120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M719	200
7MBR50VM120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M719	200
7MBR50VN120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M720	310
7MBR75VN120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M720	310
7MBR100VN120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M720	310
7MBR150VN120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M720	310
7MBR25VP120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M719	200
7MBR35VP120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M719	200
7MBR50VP120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M719	200
7MBR50VR120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M720	310
7MBR75VR120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M720	310
7MBR100VR120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M720	310
7MBR150VR120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M720	310

注: EconoPIM™はInfineon Technologies社の登録商標です。

Note: EconoPIM™ is registered trademarks of Infineon Technologies AG, Germany.

VCE (sat), VFM: at Tj=25°C, Chip



IGBT

■ PIM (コンバータ部、ブレーキ部内蔵) EconoPIM™ 600V, 1200Vクラス
 PIM/Built-in converter and brake EconoPIM™ 600, 1200 volts class

With NTC, press fit pins. PIM		600V		1200V	
		V series		V series	
		Ic			
		25A			7MBR25VW120-50
		35A			7MBR35VW120-50
		50A			7MBR50VW120-50
		50A			7MBR50VX120-50
		75A			7MBR75VX120-50
		100A			7MBR100VX120-50
		150A			7MBR150VX120-50
		25A			7MBR25VY120-50
		35A			7MBR35VY120-50
		50A	7MBR50VY060-50		7MBR50VY120-50
		75A	7MBR75VY060-50		
		100A	7MBR100VY060-50		
	50A			7MBR50VZ120-50	
	75A			7MBR75VZ120-50	
	100A	7MBR100VZ060-50		7MBR100VZ120-50	
	150A	7MBR150VZ060-50		7MBR150VZ120-50	

Dimension [mm]

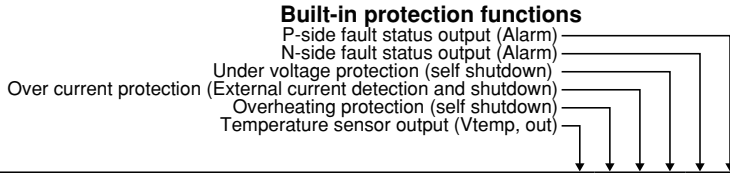
型 式 Device type	インバータ部 Inverter [IGBT]				ブレーキ部 Brake [IGBT+FWD]			コンバータ部 Converter [Diode]				パッケージ Package	質量 Net mass Grams
	V _{CES}	I _c	P _c	V _{CE(sat)}	V _{CES}	I _c	V _{RRM}	V _{RRM}	I _o	V _{FM}	I _{FSM}		
	Volts	Cont. Amps.	Watts	Typ. Volts	Volts	Cont. Amps.	Volts	Volts	Cont. Amps.	Typ. Volts	Amps.		
7MBR50VY060-50	600	50	215	1.6	600	50	600	800	50	1.3	210	M721	200
7MBR75VY060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M721	200
7MBR100VY060-50	600	100	430	1.85	600	50	600	800	100	1.25	700	M721	200
7MBR100VZ060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M722	310
7MBR150VZ060-50	600	150	485	1.6	600	75	600	800	150	1.25	700	M722	310
7MBR25VW120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.4	155	M721	200
7MBR35VW120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M721	200
7MBR50VW120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M721	200
7MBR50VX120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M722	310
7MBR75VX120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M722	310
7MBR100VX120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M722	310
7MBR150VX120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M722	310
7MBR25VY120-50	1200	25	170	1.85	1200	25	1200	1600	25	1.42	155	M721	200
7MBR35VY120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M721	200
7MBR50VY120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M721	200
7MBR50VZ120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M722	310
7MBR75VZ120-50	1200	75	385	1.85	1200	50	1200	1600	75	1.4	520	M722	310
7MBR100VZ120-50	1200	100	520	1.75	1200	75	1200	1600	100	1.5	520	M722	310
7MBR150VZ120-50	1200	150	885	1.85	1200	100	1200	1600	150	1.4	780	M722	310

注: EconoPIM™はInfineon Technologies社の登録商標です。
 Note: EconoPIM™ is registered trademarks of Infineon Technologies AG, Germany.

V_{CE(sat)}, V_{FM}: at T_j=25°C, Chip

■小容量IPM (Intelligent Power Module) 600Vクラス
Small IPM (Intelligent Power Module) 600 volts class

IGBT



Small IPM with High Voltage Driver-IC without Brake-Chopper		600V V series	
Package	Model	IC	Features
P633	15A 6MBP15VRA060-50	✓	✓
	15A 6MBP15VRD060-50	✓	✓
P633A	15A 6MBP15VSG060-50	✓	✓
	20A 6MBP20VSA060-50	✓	✓
P633A	30A 6MBP30VSA060-50	✓	✓
	15A 6MBP15VRB060-50	✓	✓
P633	15A 6MBP15VRC060-50	✓	✓
	15A 6MBP15VSH060-50	✓	✓
P633A	20A 6MBP20VSC060-50	✓	✓
	30A 6MBP30VSC060-50	✓	✓

Dimension [mm]

型式 Device type	インバータ部 Inverter			制御部 Control			保護機能 Protection function					パッケージ 質量 Package Net mass		
	V _{CE(sat)} Typ. Volts	I _c Typ. Amps.	V _{CE(sat)} Typ. Volts	V _{CC(L)} Typ. Volts	Boot-strap Diode	Input signal Active logic and Voltage level	UV V _{CC(L)} VB(*)	OC ※1	Vtemp ※2	TOH ※2	Alarm出力 VFO fault output		Package	Net mass Grams
6MBP15VRA060-50	600	15	1.80	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633	9.3
● 6MBP15VRD060-50	600	15	1.55	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633	9.3
● 6MBP15VSG060-50	600	15	1.50	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633A	9.3
● 6MBP20VSA060-50	600	20	1.44	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633A	9.3
● 6MBP30VSA060-50	600	30	1.44	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	-	N-side(UV,OC)		P633A	9.3
6MBP15VRB060-50	600	15	1.80	15	Built-in	High(3.3/5V)	P&N-side	N-side	-	N-side(125±10°C)	N-side(UV,OC,TOH)		P633	9.3
6MBP15VRC060-50	600	15	1.80	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	N-side(125±10°C)	N-side(UV,OC,TOH)		P633	9.3
● 6MBP15VSH060-50	600	15	1.50	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	N-side(125±10°C)	N-side(UV,OC,TOH)		P633A	9.3
● 6MBP20VSC060-50	600	20	1.44	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	N-side(125±10°C)	N-side(UV,OC,TOH)		P633A	9.3
● 6MBP30VSC060-50	600	30	1.44	15	Built-in	High(3.3/5V)	P&N-side	N-side	N-side	N-side(125±10°C)	N-side(UV,OC,TOH)		P633A	9.3

●: 新製品 New Products

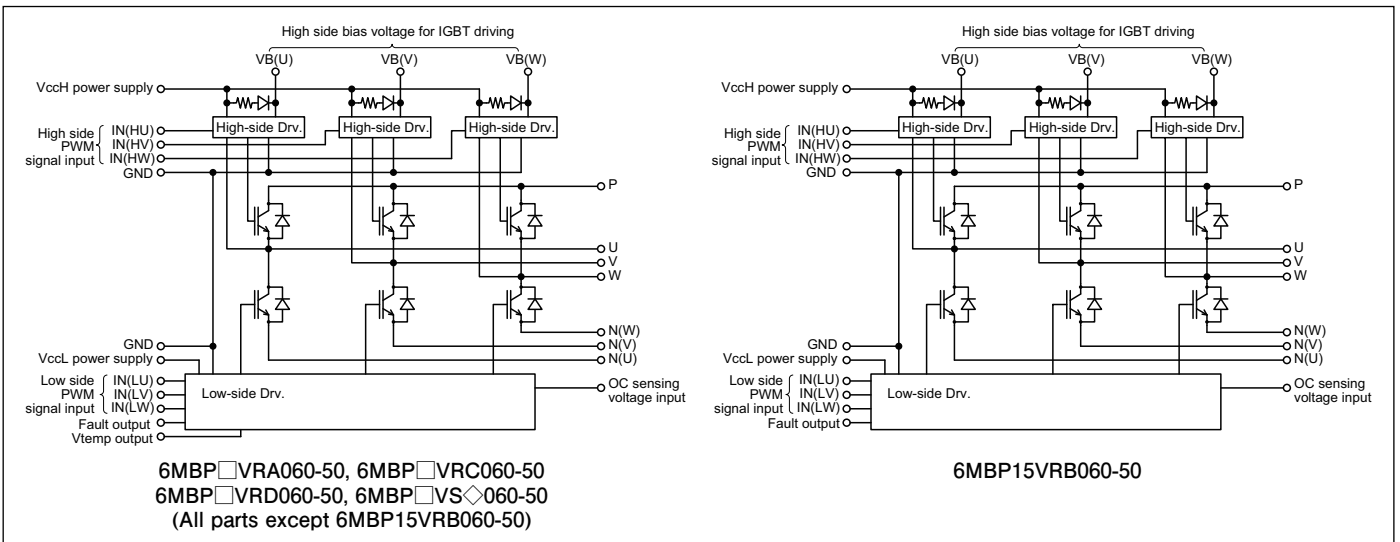
※1 外部電流検出方式

※1 External current detection

※2 LVIC内での温度検出

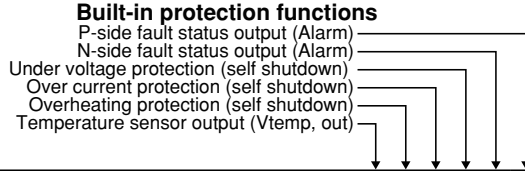
※2 Temperature detection in LVIC

●ブロック図 Block Diagram





■ IPM (Intelligent Power Module) 600V, 1200Vクラス
 IPM (Intelligent Power Module) 600, 1200 volts class



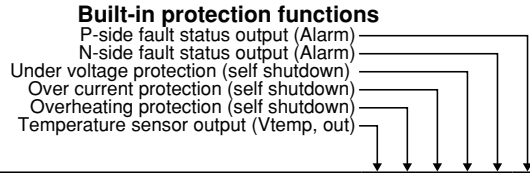
Without Brake-Chopper	P629	P629	P629	P629	P629	Ic	600V	1200V
							V series	V series
	P629	✓	✓	✓	✓	10A		6MBP10VAA120-50
						15A		6MBP15VAA120-50
						20A	6MBP20VAA060-50	
						25A		6MBP25VAA120-50
						30A	6MBP30VAA060-50	
						50A	6MBP50VAA060-50	
	P626	✓	✓	✓	✓	25A		6MBP25VBA120-50
						35A		6MBP35VBA120-50
						50A	6MBP50VBA060-50	6MBP50VBA120-50
						75A	6MBP75VBA060-50	
	P636	✓	✓	✓	✓	25A		6MBP25VFN120-50
						35A		6MBP35VFN120-50
						50A	6MBP50VFN060-50	6MBP50VFN120-50
						75A	6MBP75VFN060-50	
						100A	6MBP100VFN060-50	
	P636	✓	✓	✓	✓	25A		7MBP25VFN120-50
						35A		7MBP35VFN120-50
						50A	7MBP50VFN060-50	7MBP50VFN120-50
						75A	7MBP75VFN060-50	
						100A	7MBP100VFN060-50	

Dimension [mm]

型 式 Device type	インバータ部 Inverter			ブレーキ部 Brake		制御部 Control				パッケージ 質量 Package Net mass				
	V _{CE(S)} Volts	I _c Amps.	V _{CE(sat)} Typ. Volts	V _{CE(S)} Volts	I _c Amps.	V _{CC} Typ. Volts	I _{OC(INV)} Min. Amps.	V _{UV} Volts	T _{JOH} Min. °C	Alarm OC(typ.) ms	UV(typ.) ms	T _{JOH} (typ.) ms	Package	Net mass Grams
6MBP20VAA060-50	600	20	1.4	-	-	15	30	11.0 to 12.5	150	2	4	8	P629	80
6MBP30VAA060-50	600	30	1.4	-	-	15	45	11.0 to 12.5	150	2	4	8	P629	80
6MBP50VAA060-50	600	50	1.4	-	-	15	75	11.0 to 12.5	150	2	4	8	P629	80
6MBP50VBA060-50	600	50	1.4	-	-	15	75	11.0 to 12.5	150	2	4	8	P626	100
6MBP75VBA060-50	600	75	1.4	-	-	15	113	11.0 to 12.5	150	2	4	8	P626	100
○ 6MBP50VFN060-50	600	50	TBD	-	-	15	100	11.0 to 12.5	150	2	4	8	P636	190
○ 6MBP75VFN060-50	600	75	TBD	-	-	15	150	11.0 to 12.5	150	2	4	8	P636	190
○ 6MBP100VFN060-50	600	100	TBD	-	-	15	200	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP50VFN060-50	600	50	TBD	600	30	15	100	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP75VFN060-50	600	75	TBD	600	50	15	150	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP100VFN060-50	600	100	TBD	600	50	15	200	11.0 to 12.5	150	2	4	8	P636	190
6MBP10VAA120-50	1200	10	1.7	-	-	15	15	11.0 to 12.5	150	2	4	8	P629	80
6MBP15VAA120-50	1200	15	1.7	-	-	15	23	11.0 to 12.5	150	2	4	8	P629	80
6MBP25VAA120-50	1200	25	1.7	-	-	15	38	11.0 to 12.5	150	2	4	8	P629	80
6MBP25VBA120-50	1200	25	1.7	-	-	15	38	11.0 to 12.5	150	2	4	8	P626	100
6MBP35VBA120-50	1200	35	1.7	-	-	15	53	11.0 to 12.5	150	2	4	8	P626	100
6MBP50VBA120-50	1200	50	1.7	-	-	15	75	11.0 to 12.5	150	2	4	8	P626	100
○ 6MBP25VFN120-50	1200	25	TBD	-	-	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 6MBP35VFN120-50	1200	35	TBD	-	-	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 6MBP50VFN120-50	1200	50	TBD	-	-	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP25VFN120-50	1200	25	TBD	1200	15	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP35VFN120-50	1200	35	TBD	1200	25	15	TBD	11.0 to 12.5	150	2	4	8	P636	190
○ 7MBP50VFN120-50	1200	50	TBD	1200	25	15	TBD	11.0 to 12.5	150	2	4	8	P636	190

○ : 開発中 Under development

■ IPM (Intelligent Power Module) 600V, 1200Vクラス
 IPM (Intelligent Power Module) 600, 1200 volts class



	P630	Protection Functions					Ic	600V	1200V	
		✓	✓	✓	✓	✓		V series	V series	
Without Brake-Chopper							25A		6MBP25VDA120-50	
							35A		6MBP35VDA120-50	
							50A	6MBP50VDA060-50	6MBP50VDA120-50	
									6MBP50VDN120-50	
							75A	6MBP75VDA060-50	6MBP75VDA120-50	
									6MBP75VDN120-50	
				✓	✓	✓	✓	100A	6MBP100VDA060-50	6MBP100VDA120-50
									6MBP100VDN060-50	6MBP100VDN120-50
								150A	6MBP150VDA060-50	
									6MBP150VDN060-50	
With Brake-Chopper							25A		7MBP25VDA120-50	
							35A		7MBP35VDA120-50	
							50A	7MBP50VDA060-50	7MBP50VDA120-50	
									7MBP50VDN120-50	
							75A	7MBP75VDA060-50	7MBP75VDA120-50	
									7MBP75VDN120-50	
				✓	✓	✓	✓	100A	7MBP100VDA060-50	7MBP100VDA120-50
									7MBP100VDN060-50	7MBP100VDN120-50
								150A	7MBP150VDA060-50	
									7MBP150VDN060-50	
Without Brake-Chopper							100A		6MBP100VEA120-50	
							150A		6MBP150VEA120-50	
							200A	6MBP200VEA060-50	6MBP200VEA120-50	
				✓	✓	✓	✓	300A	6MBP300VEA060-50	
								400A	6MBP400VEA060-50	
With Brake-Chopper							100A		7MBP100VEA120-50	
							150A		7MBP150VEA120-50	
							200A	7MBP200VEA060-50	7MBP200VEA120-50	
				✓	✓	✓	✓	300A	7MBP300VEA060-50	
								400A	7MBP400VEA060-50	

Dimension [mm]



パワーデバイス/Power Devices (IGBT)

IGBT

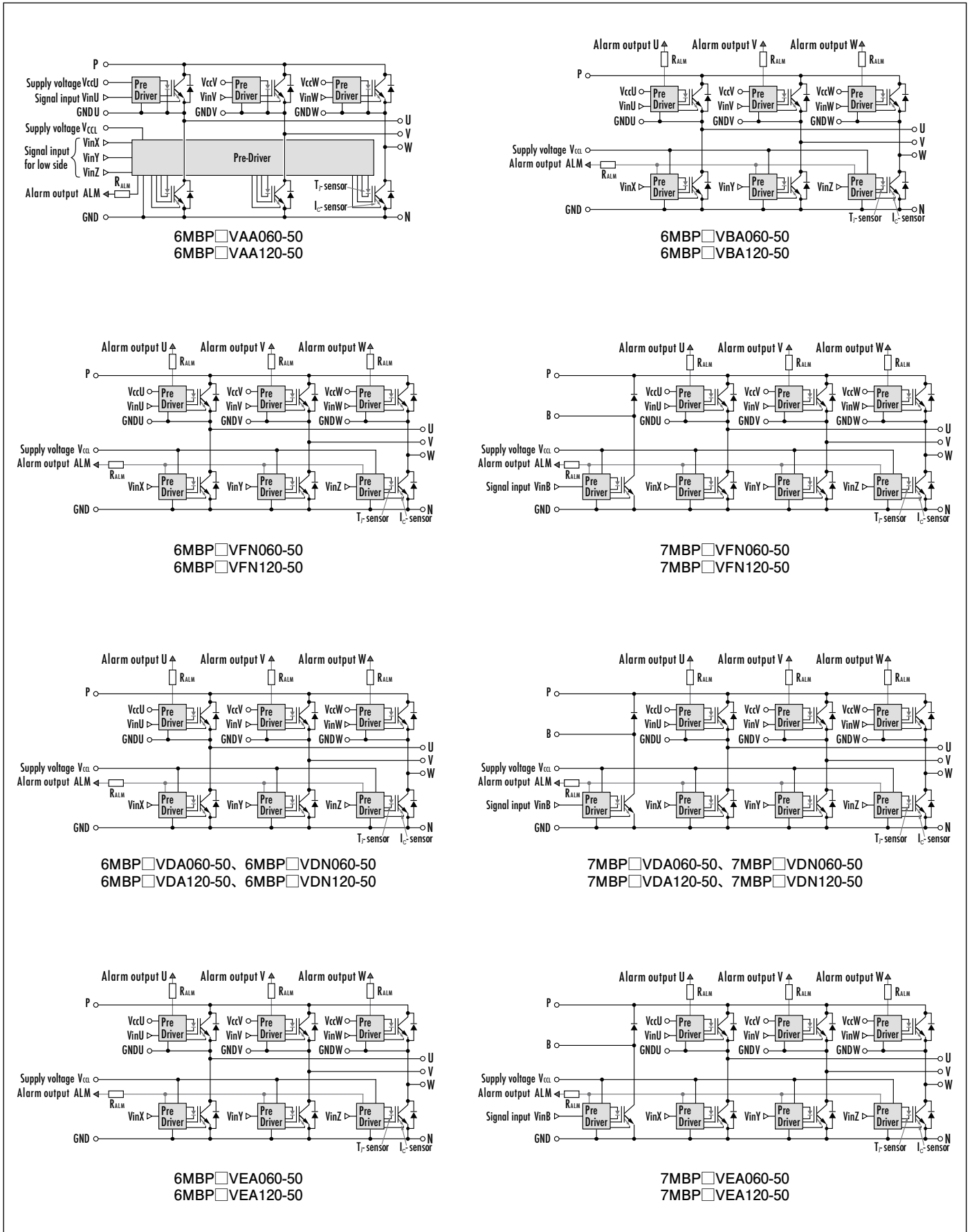
型 式 Device type	インバータ部 Inverter			ブレーキ部 Brake		制御部 Control						パッケージ 質量 Package Net mass		
	V_{CES}	I_c	$V_{CE(sat)}$	V_{CES}	I_c	V_{cc}	$I_{oc}[INV]$	V_{UV}	T_{jOH}	Alarm	UV(typ.)	$T_{jOH}(typ.)$	Package	Net mass Grams
	Volts	Amps.	Volts	Volts	Amps.	Volts	Amps.	Volts	°C	ms	ms	ms		
6MBP50VDA060-50	600	50	1.4	-	-	15	75	11.0 to 12.5	150	2	4	8	P630	290
6MBP75VDA060-50	600	75	1.4	-	-	15	113	11.0 to 12.5	150	2	4	8	P630	290
6MBP100VDA060-50	600	100	1.4	-	-	15	150	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP100VDN060-50	600	100	1.4	-	-	15	150	11.0 to 12.5	150	2	4	8	P630	290
6MBP150VDA060-50	600	150	1.4	-	-	15	225	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP150VDN060-50	600	150	1.4	-	-	15	225	11.0 to 12.5	150	2	4	8	P630	290
6MBP200VDA060-50	600	200	1.4	-	-	15	300	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP200VDN060-50	600	200	1.4	-	-	15	300	11.0 to 12.5	150	2	4	8	P630	290
7MBP50VDA060-50	600	50	1.4	600	30	15	75	11.0 to 12.5	150	2	4	8	P630	290
7MBP75VDA060-50	600	75	1.4	600	50	15	113	11.0 to 12.5	150	2	4	8	P630	290
7MBP100VDA060-50	600	100	1.4	600	50	15	150	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP100VDN060-50	600	100	1.4	600	50	15	150	11.0 to 12.5	150	2	4	8	P630	290
7MBP150VDA060-50	600	150	1.4	600	75	15	225	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP150VDN060-50	600	150	1.4	600	75	15	225	11.0 to 12.5	150	2	4	8	P630	290
7MBP200VDA060-50	600	200	1.4	600	100	15	300	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP200VDN060-50	600	200	1.4	600	100	15	300	11.0 to 12.5	150	2	4	8	P630	290
6MBP200VEA060-50	600	200	1.25	-	-	15	300	11.0 to 12.5	150	2	4	8	P631	950
6MBP300VEA060-50	600	300	1.25	-	-	15	450	11.0 to 12.5	150	2	4	8	P631	950
6MBP400VEA060-50	600	400	1.25	-	-	15	600	11.0 to 12.5	150	2	4	8	P631	950
7MBP200VEA060-50	600	200	1.25	600	100	15	300	11.0 to 12.5	150	2	4	8	P631	950
7MBP300VEA060-50	600	300	1.25	600	150	15	450	11.0 to 12.5	150	2	4	8	P631	950
7MBP400VEA060-50	600	400	1.25	600	200	15	600	11.0 to 12.5	150	2	4	8	P631	950
6MBP25VDA120-50	1200	25	1.7	-	-	15	38	11.0 to 12.5	150	2	4	8	P630	290
6MBP35VDA120-50	1200	35	1.7	-	-	15	53	11.0 to 12.5	150	2	4	8	P630	290
6MBP50VDA120-50	1200	50	1.7	-	-	15	75	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP50VDN120-50	1200	50	1.7	-	-	15	75	11.0 to 12.5	150	2	4	8	P630	290
6MBP75VDA120-50	1200	75	1.7	-	-	15	113	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP75VDN120-50	1200	75	1.7	-	-	15	113	11.0 to 12.5	150	2	4	8	P630	290
6MBP100VDA120-50	1200	100	1.7	-	-	15	150	11.0 to 12.5	150	2	4	8	P630	290
○ 6MBP100VDN120-50	1200	100	1.7	-	-	15	150	11.0 to 12.5	150	2	4	8	P630	290
7MBP25VDA120-50	1200	25	1.7	1200	15	15	38	11.0 to 12.5	150	2	4	8	P630	290
7MBP35VDA120-50	1200	35	1.7	1200	15	15	53	11.0 to 12.5	150	2	4	8	P630	290
7MBP50VDA120-50	1200	50	1.7	1200	25	15	75	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP50VDN120-50	1200	50	1.7	1200	25	15	75	11.0 to 12.5	150	2	4	8	P630	290
7MBP75VDA120-50	1200	75	1.7	1200	35	15	113	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP75VDN120-50	1200	75	1.7	1200	35	15	113	11.0 to 12.5	150	2	4	8	P630	290
7MBP100VDA120-50	1200	100	1.7	1200	50	15	150	11.0 to 12.5	150	2	4	8	P630	290
○ 7MBP100VDN120-50	1200	100	1.7	1200	50	15	150	11.0 to 12.5	150	2	4	8	P630	290
6MBP100VEA120-50	1200	100	1.7	-	-	15	150	11.0 to 12.5	150	2	4	8	P631	950
6MBP150VEA120-50	1200	150	1.7	-	-	15	225	11.0 to 12.5	150	2	4	8	P631	950
6MBP200VEA120-50	1200	200	1.7	-	-	15	300	11.0 to 12.5	150	2	4	8	P631	950
7MBP100VEA120-50	1200	100	1.7	1200	50	15	150	11.0 to 12.5	150	2	4	8	P631	950
7MBP150VEA120-50	1200	150	1.7	1200	75	15	225	11.0 to 12.5	150	2	4	8	P631	950
7MBP200VEA120-50	1200	200	1.7	1200	100	15	300	11.0 to 12.5	150	2	4	8	P631	950

○:開発中 Under development

注:本ページでVDNの付く型式は高放熱特性。

Note: The products with "VDN" on this page have high heat dissipation characteristics.

●ブロック図 Block Diagram





■ ディスクリートIGBT Vシリーズ 600V, 1200Vクラス Discrete IGBTs V series 600V, 1200V class

IGBT in field-stop technology and trench-gate structure with Ultra fast FWD
600Vクラス 600 volts class

型 式 Device type	絶対最大定格 Maximum Ratings				$V_{CE(sat)}$ ($V_{GE}=15V$) Typ. Volts	E_{on} ($R_g=10\Omega$) typ. mJ	E_{off} mJ	Q_g typ. nC	V_F		Q_{rr} typ. μC	パッケージ Package	質量 Net mass Grams
	V_{CES}	I_C	I_{CP}	P_D					I_F				
	Volts	Amps. $T_c=100^\circ C$	Amps.	Watts						Amps.			
FGW30N60VD	600	30	60	230	1.6	1.2	0.7	225	1.5	25	0.7	TO-247-P2	6.0
FGW35N60H	600	35	105	230	1.5	0.9	0.85	210	-	-	-	TO-247-P2	6.0
FGW35N60HD	600	35	105	230	1.5	0.9	0.85	210	2.0	15	0.06	TO-247-P2	6.0
● FGW35N60HC	600	35	105	230	1.5	0.95	0.85	210	2.35	35	0.13	TO-247-P2	6.0
FGW50N60H	600	50	150	360	1.5	1.4	1.7	305	-	-	-	TO-247-P2	6.0
FGW50N60HD	600	50	150	360	1.5	1.4	1.7	305	2.0	25	0.08	TO-247-P2	6.0
● FGW50N60HC	600	50	150	360	1.5	1.5	1.7	305	2.3	50	0.07	TO-247-P2	6.0
FGW50N60VD	600	50	100	360	1.6	2.4	1.4	360	1.5	35	0.75	TO-247-P2	6.0
FGW75N60H	600	75	225	500	1.5	3.0	4.2	460	-	-	0.12	TO-247-P2	6.0
FGW75N60HD	600	75	225	500	1.5	3.0	4.2	460	2.0	35	0.13	TO-247-P2	6.0

●: 新製品 New Products

1200Vクラス 1200 volts class

型 式 Device type	絶対最大定格 Maximum Ratings				$V_{CE(sat)}$ ($V_{GE}=15V$) Typ. Volts	E_{on} ($R_g=10\Omega$) typ. mJ	E_{off} mJ	Q_g typ. nC	V_F		Q_{rr} typ. μC	パッケージ Package	質量 Net mass Grams
	V_{CES}	I_C	I_{CP}	P_D					I_F				
	Volts	Amps. $T_c=100^\circ C$	Amps.	Watts						Amps.			
FGW15N120H	1200	15	45	155	1.8	0.6	0.8	140	-	-	-	TO-247-P2	6.0
FGW15N120HD	1200	15	45	155	1.8	0.6	0.8	140	2.2	12	0.6	TO-247-P2	6.0
FGW15N120VD	1200	15	30	155	1.85	1.1	0.8	150	1.7	15	0.85	TO-247-P2	6.0
FGW25N120VD	1200	25	50	260	1.85	2.2	1.4	235	1.7	25	1.2	TO-247-P2	6.0
FGW30N120H	1200	30	90	260	1.8	1.6	1.5	230	-	-	-	TO-247-P2	6.0
FGW30N120HD	1200	30	90	260	1.8	1.6	1.5	230	2.2	20	0.95	TO-247-P2	6.0
FGW40N120H	1200	40	120	340	1.8	2.8	1.8	300	-	-	-	TO-247-P2	6.0
FGW40N120HD	1200	40	120	340	1.8	2.8	1.8	300	2.2	30	1.35	TO-247-P2	6.0
FGW40N120VD	1200	40	80	340	1.85	4.3	2.2	320	1.7	30	1.45	TO-247-P2	6.0

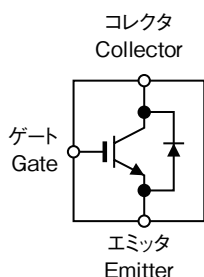
■ 型式の見方 Part numbers

FGW35N60HD (example)

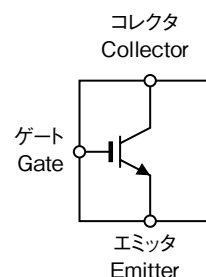
F	G		W		35	N		60		HD	
社名 Company	機種コード Device code		パッケージコード Package type		定格電流 Current	極性 Polarity		定格電圧 Voltage		シリーズ Series	
Fuji	G	IGBT	W	TO-247	×1	N	N-ch	60	600V	H	High Speed V w/o FWD
								120	1200V	HC	High Speed V with FWD
										HD	
										VD	V series with FWD

■ 等価回路 Equivalent circuit

(a) ダイオード内蔵
with Diode



(b) ダイオードなし
without Diode



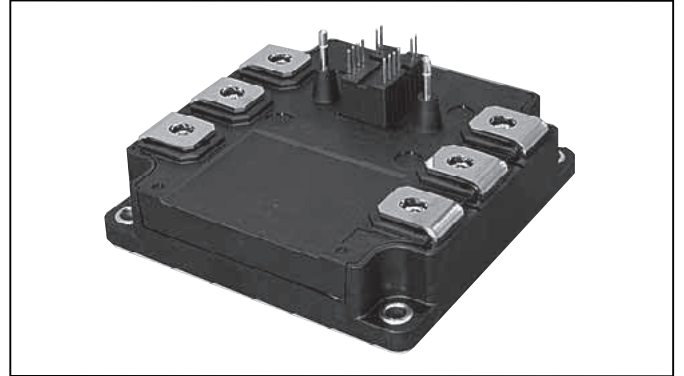
EV, HEV用IGBT IPMの特長

Features of IGBT IPM for Electric Vehicle and Hybrid Electric Vehicle

■特長 Features

- ドライブ回路、保護機能内蔵
- 光絶縁
(信号入力、IGBT チップ温度モニター、異常検出時アラーム出力)
- 短絡保護、過熱保護、制御電圧低下保護
- 鉛フリー

- Including circuit board which has IGBT drive and protection function
- Optical isolated
(signal input, IGBT's temperature monitor, alarm output)
- Detection and protection
(short-circuit, over-temperature, under-voltage)
- Lead Free Package



■特性 Characteristics

(T_J=25°C)

型式 Device type	V _{CES} Volts	I _c (Cont) Amps.	V _{CE(sat)} Typ. Volts	V _F Typ. Volts	パッケージ Package	質量 Net mass Grams
2MBP600UN-120V	1200	600	2.00	2.20	P401	680g

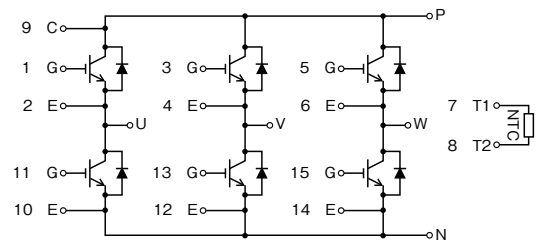
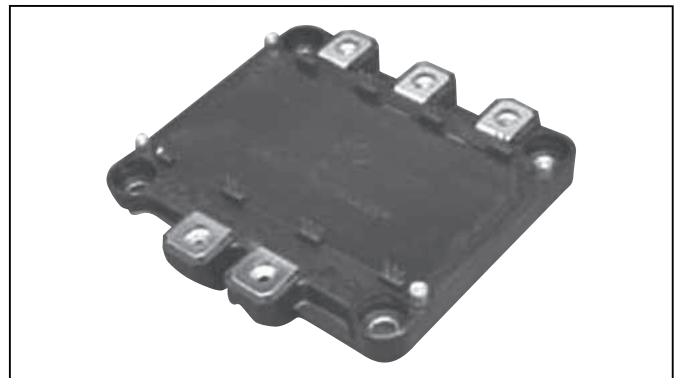
EV, HEV用IGBTモジュールの特長

Features of IGBT Module for Electric Vehicle and Hybrid Electric Vehicle

■特長 Features

- 第6世代 “V シリーズ” 650V-IGBT
- 直接水冷銅フィンベース
- 高パワー密度および小型パッケージ
- RoHS 対応

- 6th Generation “V-series” 650V-IGBT
- Direct liquid Cooling Fin-base with copper
- High power density and small package size
- RoHS compliant



■特性 Characteristics

V_{CE(sat)}: at T_J=25°C, Chip

型式 Device type	V _{CES} Volts	I _c (Cont) Amps.	I _c (Peak) Amps.	V _{CE(sat)} Typ. Volts	V _F Typ. Volts	パッケージ Package	質量 Net mass Grams
○ 6MBI400VW-065V	650	200	400	2.00 (I _c =400A)	1.70 (I _F =400A)	M651	660g
○ 6MBI600VW-065V	650	300	600	2.00 (I _c =600A)	1.70 (I _F =600A)	M652	900g

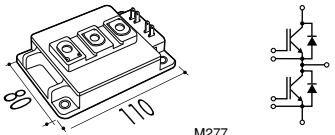
○ : 開発中 Under development

SiC-SBD搭載IGBTハイブリッドモジュールVシリーズ IGBT Hybrid Modules with SiC-SBD V series

■特長 Features

- 高性能チップ適用
- 低損失のVシリーズIGBT
- 低損失のSiC-SBD
- 従来のSi-IGBTモジュール製品とパッケージ互換
- High performance chips
- V series IGBT for low loss operation
- SiC-SBD for low loss operation
- The same package lineup as the conventional Si-IGBT modules

■ 2個組 1700Vクラス Standard 2-pack 1700 volts class

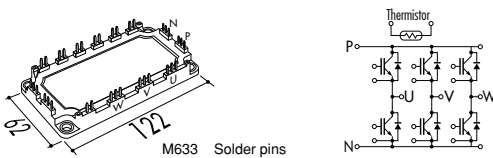
	Ic	1700V V Series, SiC-SBD
	400A	2MSI400VE-170-50

Dimension [mm]

型式 Device type	V _{CES} Volts	V _{GES} Volts	I _C Cont. Amps.	P _C Watts	V _{CE(sat)} (V _{GE} =15V) Typ.		スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
					Volts	Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		
○ 2MSI400VE-170-50	1700	±20	400	3840	2.00	400	TBD	TBD	TBD	M277	470

○ : 開発中 Under development

■ 6個組 EconoPACK™ 1200Vクラス 6-pack EconoPACK™ 1200 volts class

	Ic	1200V V Series, SiC-SBD
	100A	6MSI100VB-120-50

Dimension [mm]

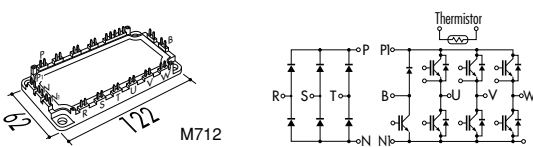
型式 Device type	V _{CES} Volts	V _{GES} Volts	I _C Cont. Amps.	P _C Watts	V _{CE(sat)} (V _{GE} =15V) Typ.		スイッチングタイム Switching time			パッケージ Package	質量 Net mass Grams
					Volts	Amps.	ton Typ. μsec.	toff Typ. μsec.	tf Typ. μsec.		
○ 6MSI100VB-120-50	1200	±20	100	520	1.75	100	0.39	0.42	0.05	M633	300

○ : 開発中 Under development

注: EconoPACK™はInfineon Technologies社の登録商標です。

Note: EconoPACK™ is registered trademarks of Infineon Technologies AG, Germany.

■ PIM (コンバータ部、ブレーキ部内蔵) EconoPIM™ 600, 1200Vクラス PIM/Built-in converter and brake EconoPIM™ 600, 1200 volts class

	Ic	600V V Series, SiC-SBD	1200V V Series, SiC-SBD
		35A	7MSR35VB120-50
	50A	7MSR50VB060-50	7MSR50VB120-50
	75A	7MSR75VB060-50	
	100A	7MSR100VB060-50	

Dimension [mm]

型式 Device type	インバータ部 Inverter [IGBT]				ブレーキ部 Brake [IGBT+FED]			コンバータ部 Converter [Diode]				パッケージ Package	質量 Net mass Grams
	V _{CES} Volts	I _C Cont. Amps.	P _C Watts	V _{CE(sat)} Typ. Volts	V _{CES} Volts	I _C Cont. Amps.	V _{RRM} Volts	V _{RRM} Volts	I _o Cont. Amps.	V _{FM} Typ. Volts	I _{FSM} Amps.		
○ 7MSR50VB060-50	600	50	215	1.6	600	50	600	800	50	1.3	210	M712	300
○ 7MSR75VB060-50	600	75	300	1.6	600	50	600	800	75	1.25	500	M712	300
○ 7MSR100VB060-50	600	100	335	1.6	600	50	600	800	100	1.25	700	M712	300
○ 7MSR35VB120-50	1200	35	210	1.85	1200	25	1200	1600	35	1.35	260	M712	300
○ 7MSR50VB120-50	1200	50	280	1.85	1200	35	1200	1600	50	1.35	360	M712	300

○ : 開発中 Under development

注: EconoPIM™はInfineon Technologies社の登録商標です。

Note: EconoPIM™ is registered trademarks of Infineon Technologies AG, Germany.

■ SiC ショットキーバリアダイオード

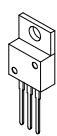
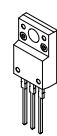
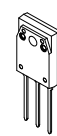
SiC Schottky-Barrier Diodes (SBD)

■ 特長 Features

- 低スイッチング特性
 - ・電源の高周波動作、システムの小型軽量化
- 低VF 特性（温度依存性が小さい）
- 低IR 特性
 - ・Tj=175°C保証、電源の高温動作、低損失化、高効率化
- 高逆サージ耐量

- High speed switching
 - ・ High-frequency operation, miniaturization, weight saving
- Low-VF (Temperature dependence is small)
- Low-IR
 - ・ Tj=175°C Guaranteed, High-temperature operation, Low-Loss, High efficiency
- High avalanche capability

■ SiC-SBD シリーズ SiC-SBD Series

SiC-SBD Series			TO-220	TO-220F	TO-247
					
結線	V _{RRM} (V)	I _o (A)			
シングル	600	10	✓	✓	✓
		25	✓	✓	✓
デュアル	600	18	✓	✓	✓
		20	✓	✓	✓
	1200	36			✓

型 式 Device type	絶対最大定格 Maximum rating			接合温度 Thermal rating T _j (°C) MAX	電気的特性 (Ta=25°C) Characteristics		パッケージ Package
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.		V _{FM} MAX. Volts	I _{RRM} *3 MAX. μA	
○ FDCP10S60	600	10	50	175	1.8	10	TO-220
○ FDCP20C60	600	20	50	175	1.8	10	TO-220
○ FDCP25S60	600	25	100	175	1.6	10	TO-220
○ FDCA10S60	600	10	50	175	1.8	10	TO-220F
○ FDCA20C60	600	20	50	175	1.8	10	TO-220F
○ FDCA25S60	600	25	100	175	1.6	10	TO-220F
○ FDCY10S60	600	10	50	175	1.8	10	TO-247
○ FDCY20C60	600	20	50	175	1.8	10	TO-247
○ FDCY25S60	600	25	100	175	1.6	10	TO-247
○ FDCY50C60	600	50	100	175	1.6	10	TO-247
○ FDCP18S120	1200	18	90	175	1.7	10	TO-220
○ FDCA18S120	1200	18	90	175	1.7	10	TO-220F
○ FDCY18S120	1200	18	90	175	1.7	10	TO-247
○ FDCY36C120	1200	36	90	175	1.7	10	TO-247

○ : 開発中 Under development

*1 50Hz 方形波 duty=1/2

*1 50Hz Square wave duty=1/2

*2 正弦波 10ms

*2 Sine half wave, 10ms

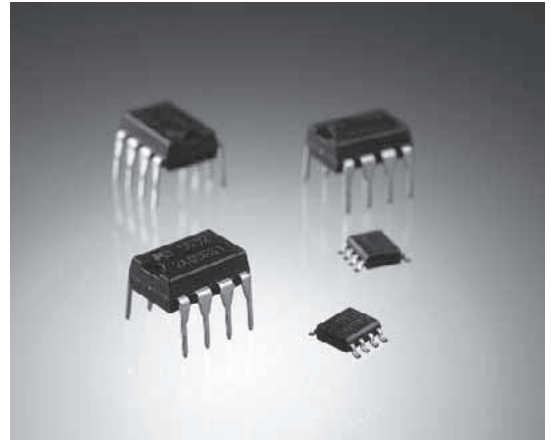
*3 V_R=V_{RRM}*3 V_R=V_{RRM}

■ 電源制御用 IC の特長 Features of Power Supply control ICs

低待機電力対応PWM制御IC Green Mode PWM-ICs (PWMIC)

■特長 Features

- 500V / 750V 耐圧起動回路内蔵
- 軽負荷時 スイッチング周波数低減
- 各種保護機能 (過電圧 / ブラウンアウト / 2 段階過電力)
- 周波数拡散機能による低 EMI ノイズ
- Built-in 500/750V withstand voltage start up circuit
- Reduct switching frequency at light load
- Protect functions (Over voltage/Brown out/2 stage Over power)
- Low EMI noise



低待機電力対応擬似共振制御IC Green Mode Quasi-resonant ICs (QRIC)

■特長 Features

- 500V 耐圧起動回路内蔵
- 低待機電力対応 (間欠動作 / 周波数低減)
- 各種保護機能 (過電圧 / 過負荷など)
- Built-in 500V withstand voltage start up circuit
- Green mode functions (Intermittent Switching/Linearly reduced switching frequency)
- Protect functions (Over voltage/Over load etc.)

力率改善制御IC Power Factor Correction ICs (PFCIC)

■特長 Features

- 幅広い電力範囲 (75W ~ 1kW)
- 力率 0.99 以上
- 各種保護機能 (FB ピンオープンショート / 過電圧など)
- Wide electric power range(From 75W to 1kW)
- Power factor ≥ 0.99
- Protect functions (FB Pin open short/Over voltage etc.)

電流共振IC Current Resonant ICs (LLCIC)

■特長 Features

- ワールドワイド入力にて、1 コンバータによる回路構成が可能
- ハイサイド駆動回路内蔵
- 共振はずれ防止機能
- 各種保護機能 (過電流 / 過電圧 / 過負荷 / 過熱 / ブラウンアウト)
- 低待機電力対応 (間欠動作)
- Realize 1 convertor circuit structure at world wide input power
- Built-in High side driver
- Priventing capacitive region operation
- Protect functions (Over current/Over voltage/Over load/Over heat/Brown out)
- Green mode function (Intermittent switching)

ハイサイド・ローサイドドライバIC High and Low side driver IC (HVIC)

■特長

- VS 端子の高負電圧耐量
- 30V までの広範囲電源電圧 (FA5650/5651)
- 3.3V 論理入力に対応
- 電源電圧低下保護を内蔵
- dVs/dt 耐量 50kV/us の高ノイズ耐量
- 高速応答：入出力遅延時間 125ns (Typ) (FA5650/5651/5751)

■ Features

- High negative transient voltage on VS terminal
- Wide range supply voltage up to 30V (FA5650/5651)
- 3.3V logic compatible
- Built-in under voltage lockout
- Allowable offset supply voltage transient dVs/dt up to 50kV/us
- High speed response: Turn on/off delay time 125ns (Typ) (FA5650/5651/5751)

■型式の見方 Part numbers

FA8A00N (example)

F		A		8		A		00		N	
社名 Company Symbol		制御方式 Control System		製品シリーズ Series		世代 Generation		系列番号 Number		パッケージコード Package code	
F	Fuji	A	Analog	1	CRMPFC	A	1G	二桁の整数 Two-digit integer	N	SOP	
				6	LLC	B	2G		P	DIP	
				8	PWM	C	3G				
									

FA5590N (example)

F		A		55		90		N	
社名 Company Symbol		制御方式 Control System		製品シリーズ Series		系列番号 Number		パッケージコード Package code	
F	Fuji	A	Analog	3X	AC/DC	二桁の整数 Two-digit integer	N	SOP	
				5X	AC/DC		P	DIP	
				7X	DC/DC				
				13X	AC/DC				

AC/DC 電源制御用 IC AC/DC Power Supply control ICs

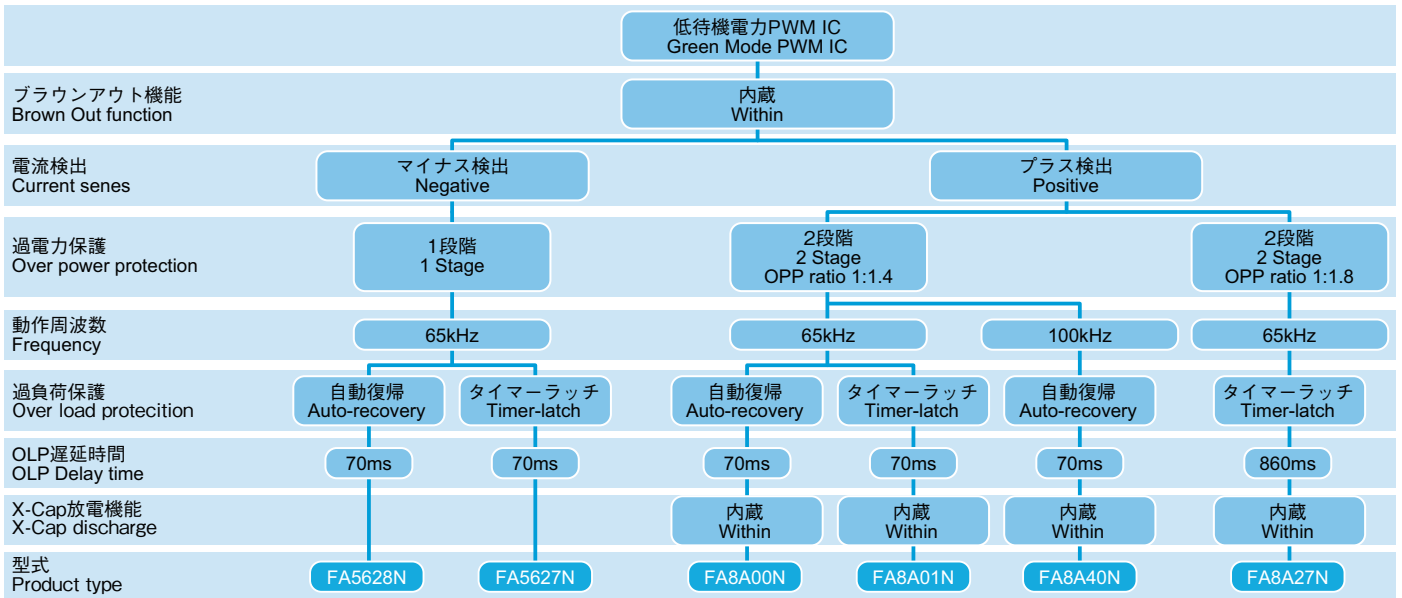
● 低待機電力対応PWM制御IC (電流モード) Green mode PWM-ICs (Current mode)

ブラウンアウト機能 Brown out function	型式 Type Name	デューティ Duty	入力電圧 Input voltage	動作周波数 Frequency	電流検出 Current sense	過負荷保護 Over load protection	過電力保護 Over power protection	過電圧保護 Over voltage protection	起動回路 Start up circuit	低待機電力機能 Green mode function	X-Cap 放電機能 X-Cap discharge function
内蔵 Within	FA5628N	85%	11 - 24V	65kHz	マイナス Negative	自動復帰 Auto-Recovery	1段階 1Stage	ラッチ Latch	内蔵 Built-in (750V)	リニア周波数低減 Linearly reduced switching frequency	内蔵 Built-in
	FA5627N					タイマーラッチ Timer-latch					
	FA8A00N● FA8A40N○	83%	12 - 24V	65kHz	プラス Positive	自動復帰 Auto-Recovery	2段階 2Stage (OPP ratio 1:1.4)		内蔵 Built-in (500V)	リニア周波数低減 + 間欠動作 Linearly reduced switching frequency and Intermittent	
	FA8A01N●			タイマーラッチ Timer-latch 遅延(Delay): 70ms							
	FA8A27N●			10 - 28V		65kHz					
	非内蔵 Without	FA5528N	80%	10 - 26V	60kHz	プラス Positive	タイマーラッチ Timer-latch		1段階 1Stage	ラッチ Latch	
FA5527N		100kHz									
FA5526N		130kHz									
FA5538N		60kHz									
FA5537N		100kHz									
FA5536N		130kHz									
FA5637N		85%	11 - 24V	65kHz	マイナス Negative	タイマーラッチ Timer-latch	ラッチ Latch	内蔵 Built-in (750V)	リニア周波数低減 + 間欠動作 Linearly reduced switching frequency and Intermittent		
FA5639N			10 - 24V	100kHz		自動復帰 Auto-Recovery					
FA5680N		83%	11 - 24V	65kHz	プラス Positive	自動復帰 Auto-Recovery	1段階 1Stage	ラッチ Latch	内蔵 Built-in (500V)	リニア周波数低減 + 間欠動作 Linearly reduced switching frequency and Intermittent	内蔵 Built-in
FA5681N						タイマーラッチ Timer-latch					
FA8A60N●		83%	10 - 24V	65kHz	プラス Positive	自動復帰 Auto-Recovery	1段階 1Stage	ラッチ Latch	内蔵 Built-in (500V)	リニア周波数低減 + 間欠動作 Linearly reduced switching frequency and Intermittent	
FA8A64N○				100kHz							
FA8A61N●				65kHz							
FA8A65N○				100kHz							
FA8A70N●				65kHz							
FA8A74N○				100kHz							
FA8A71N●	65kHz										
FA8A75N○	100kHz										
FA8A12N●	65kHz	自動復帰 Auto-Recovery	2段階 2Stage								

●: 新製品 New Products ○: 開発中 Under development
PKG: 全て8pin All 8pin

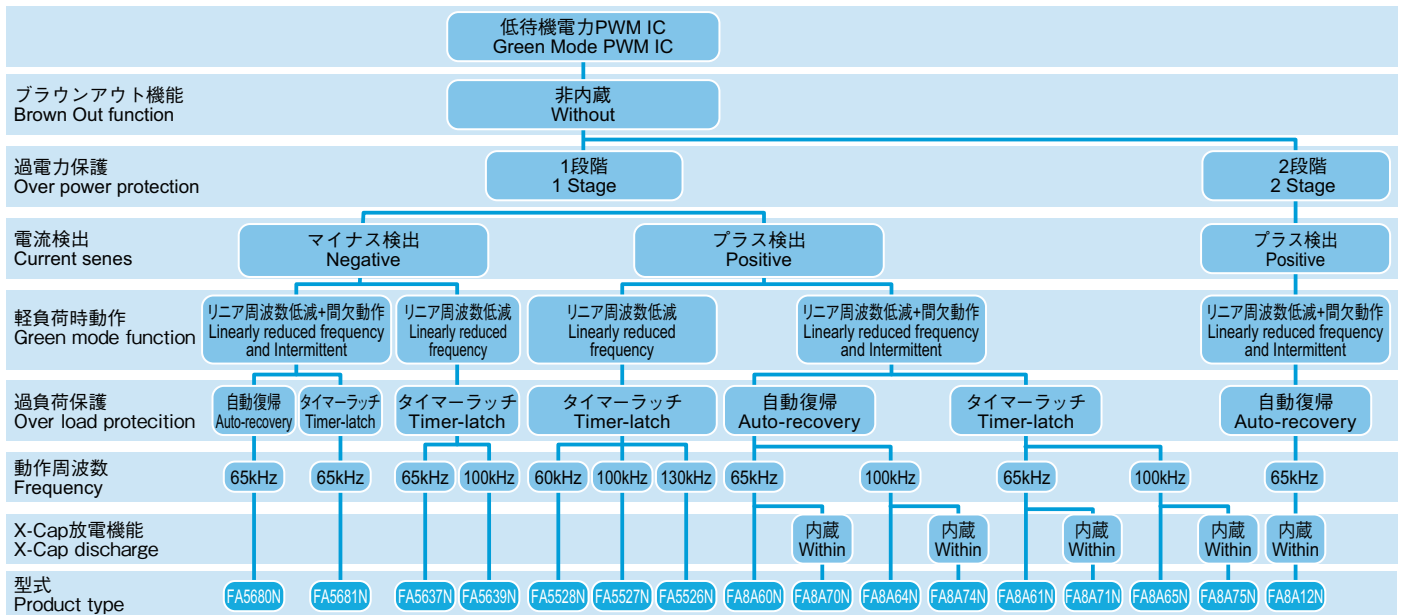
● 低待機電力対応PWM-IC系列 (ブラウンアウトあり)

Green mode PWM-ICs with Brown Out function



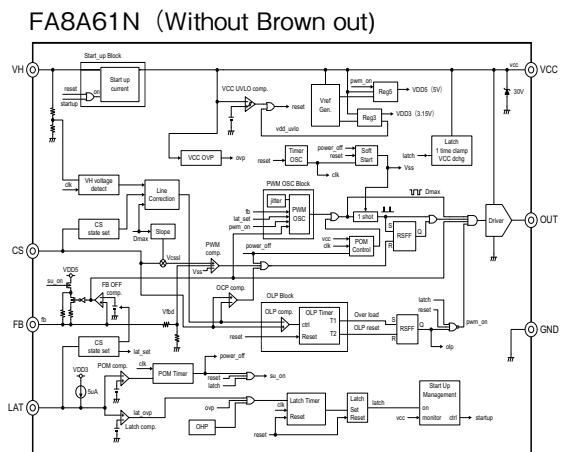
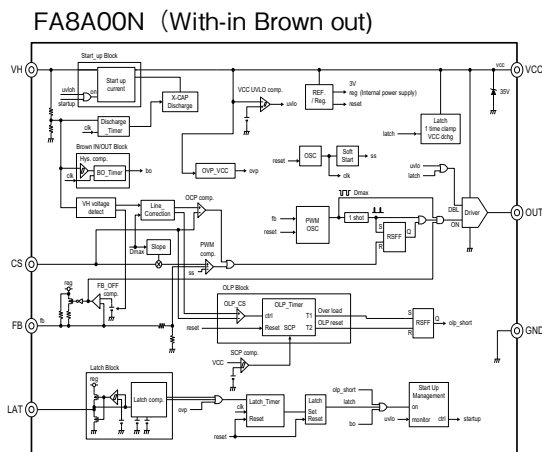
● 低待機電力対応PWM-IC系列 (ブラウンアウトなし)

Green mode PWM-ICs without Brown Out function



● 低待機電力対応PWM-IC代表型式ブロック図

Block diagram of Green mode (main model)

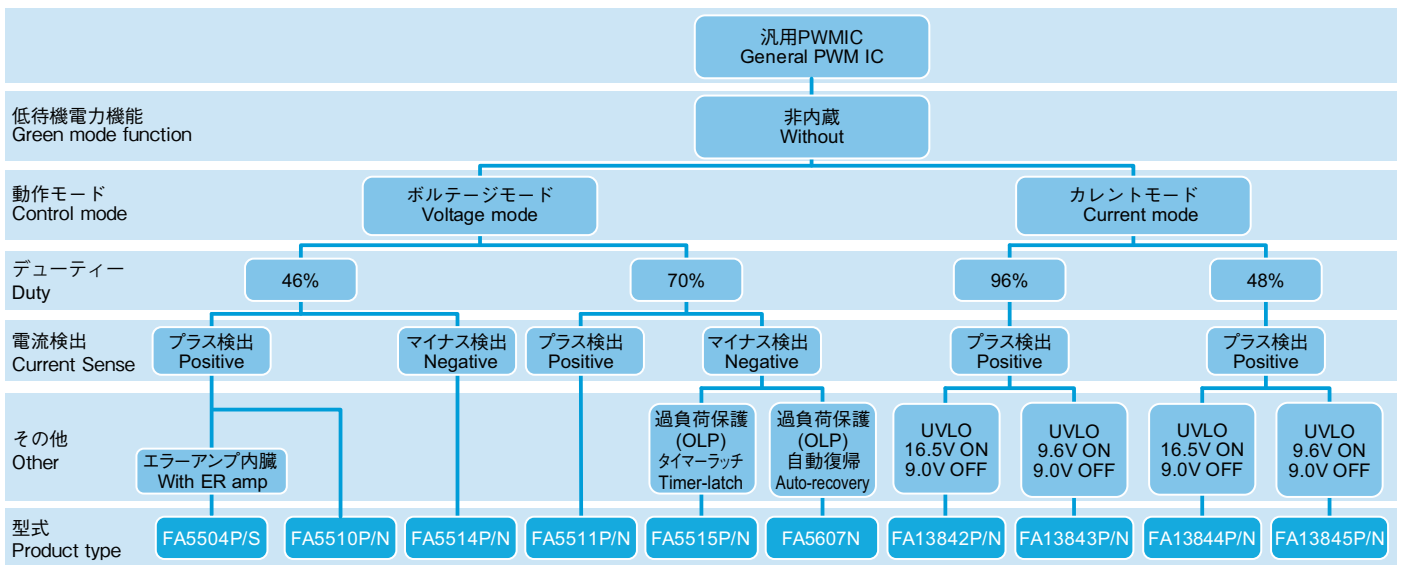
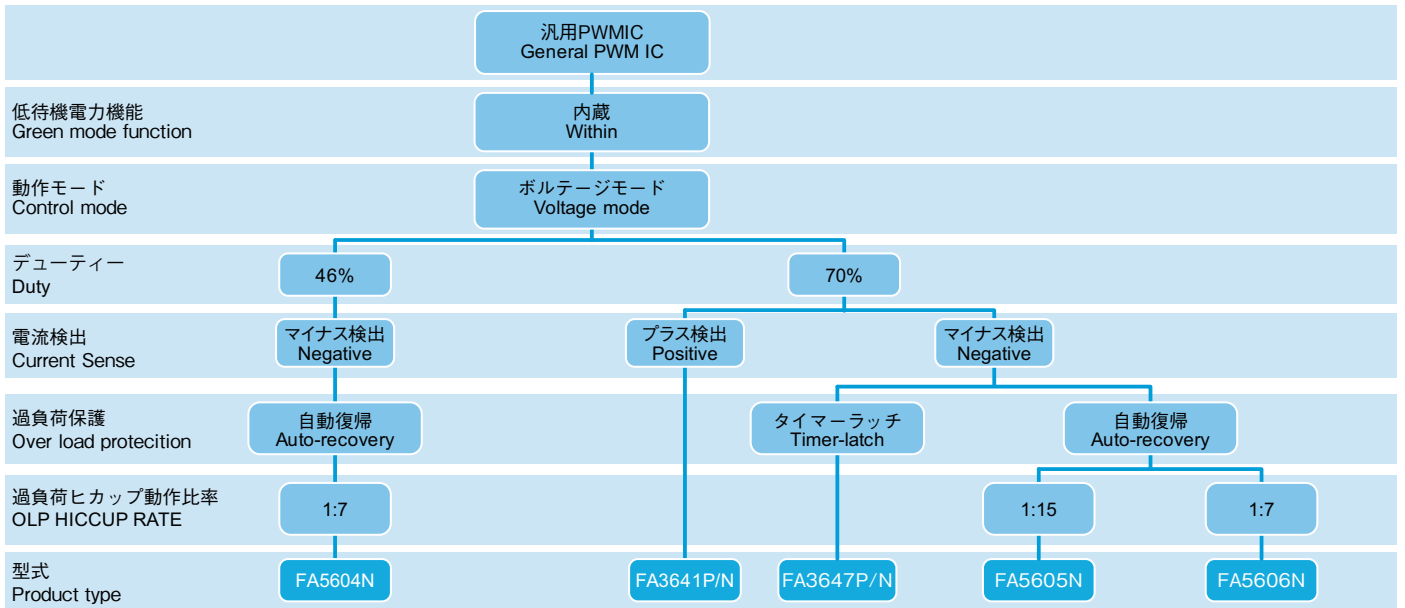


● 汎用PWM制御IC General PWM-ICs

低待機 電力機能 Green mode function	型式 Type Name	制御方式 Control mode	デューティ Duty	入力電圧 Input voltage	電流検出 Current sense	過負荷保護 Over load protection	過電圧保護 Over voltage protection	UVLO Under- voltage lockout	備考 Remarks
内蔵 Within (リニア 周波数低減) (Linearly reduced switching frequency)	FA3641P/N	電圧 モード Voltage mode	70%	10 - 28V	プラス Positive	タイマーラッチ Timer-latch	ラッチ Latch	17.5V ON 9.7V OFF	軽負荷時周波数低減 開始 / 復帰 FB 電圧 1.8V/1.95V
	FA3647P/N				マイナス Negative				
	FA5604N		46%	10 - 30V	マイナス Negative	自動復帰 Auto-Recovery ヒカッパ動作 / 停止 期間比率 1 : 7			
	FA5605N		70%			自動復帰 Auto-Recovery ヒカッパ動作 / 停止 期間比率 1 : 15			
	FA5606N		自動復帰 Auto-Recovery ヒカッパ動作 / 停止 期間比率 1 : 7			17.5V ON 9.7V OFF			
非内蔵 Without	FA13842P/N	電流 モード Current mode	96%	10 - 25V	プラス Positive	-	-	16.5V ON 9.0V OFF	エラーアンプ内蔵 With ER amp
	FA13843P/N								
	FA13844P/N		48%						
	FA13845P/N								
	FA5504P/N	電圧 モード Voltage mode	46%	10 - 28V	プラス Positive	タイマーラッチ Timer-latch	ラッチ Latch	17.5V ON 9.7V OFF	
	FA5510P/N								
	FA5511P/N								
	FA5514P/N		46%	10 - 30V	マイナス Negative	自動復帰 Auto-Recovery ヒカッパ動作 / 停止 期間比率 1 : 7			
FA5515P/N	70%								
FA5607N									

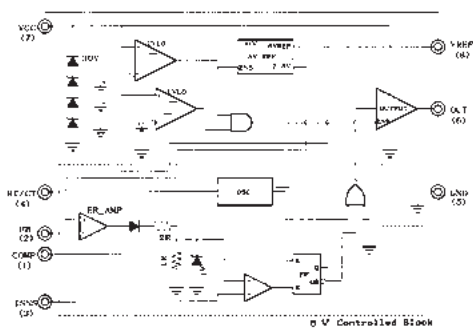
PKG: 全て8pin All 8pin
動作周波数: 外部調整 Frequency: Adjustable

● 汎用PWM制御IC系列 General PWM-ICs

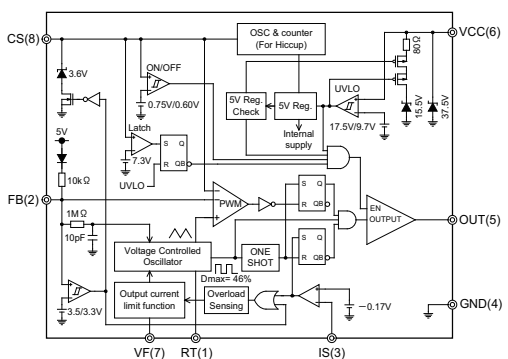


● 汎用PWM-IC代表型式ブロック図 Block diagram of General PWM-ICs (main model)

FA13842P/N



FA5604N

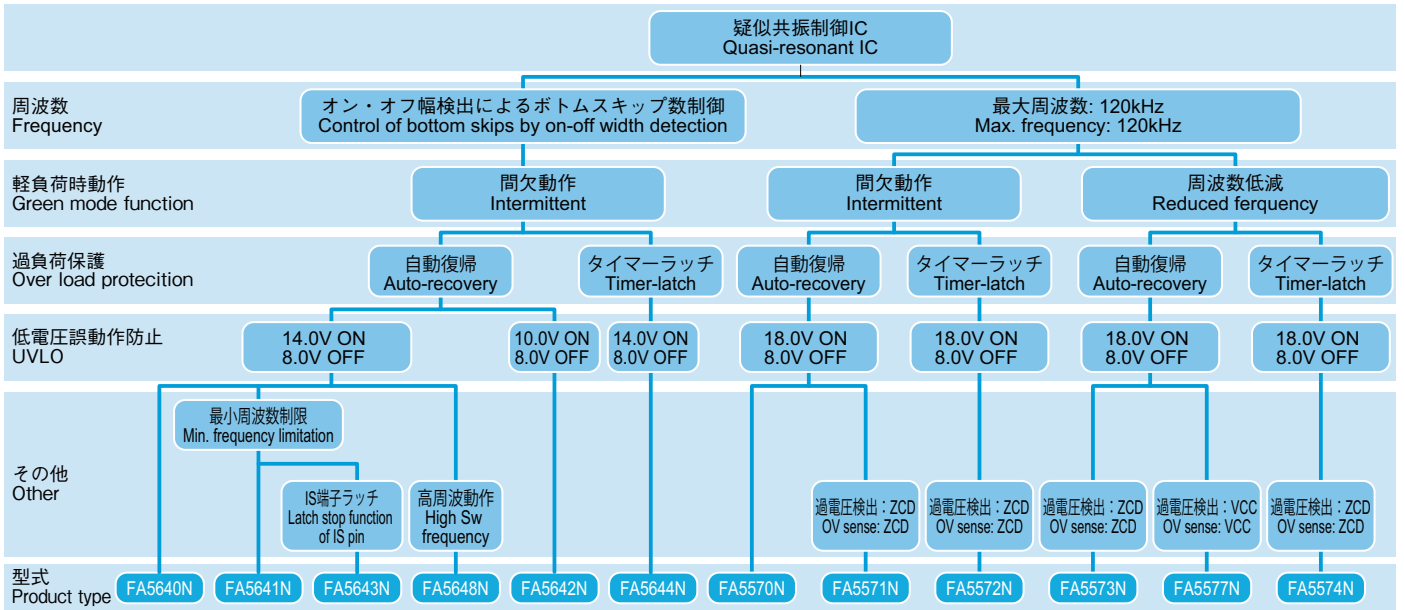


● 低待機電力対応擬似共振制御IC（電流モード） Green mode Quasi-resonant ICs（Current mode）

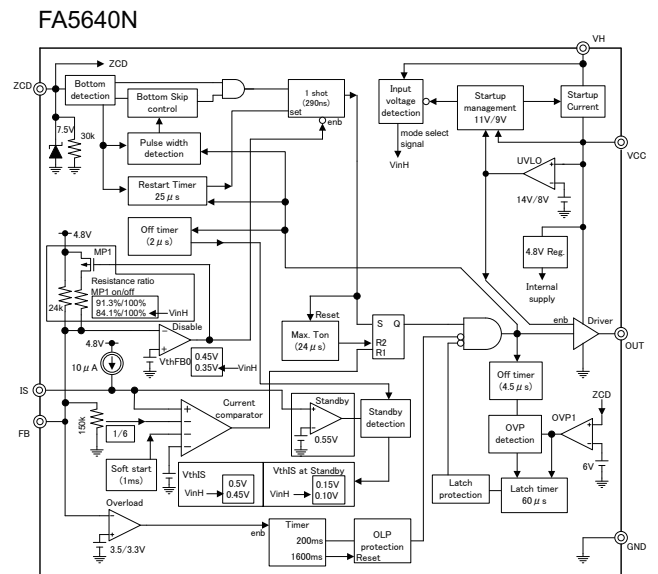
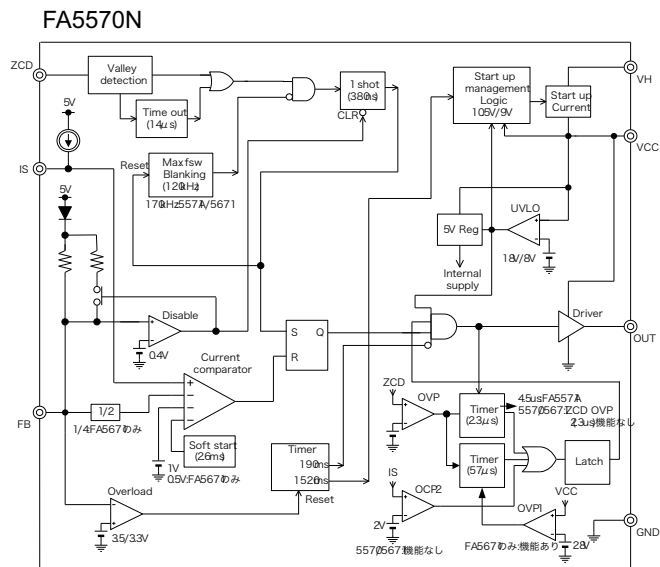
型式 Type Name	入力電圧 Input voltage	最大周波数 Maximum frequency	過負荷保護 Over load protection	過電圧検出 Over voltage sense	起動回路 Start up circuit	低待機電力機能 Green mode function	UVLO Under-voltage lockout	備考 Remarks
FA5570N	10 - 28V	120kHz	自動復帰 Auto-Recovery	—	内蔵 Built-in (500V)	間欠動作 Intermittent Switching	18V ON 8V OFF	過電圧保護 Over voltage protection ラッチ Latch
FA5571N			タイマーラッチ Timer-latch	ZCD				
FA5572N			自動復帰 Auto-Recovery					
FA5573N			タイマーラッチ Timer-latch	VCC		リニア周波数低減 Linearly reduced switching frequency		
FA5574N			自動復帰 Auto-Recovery					
FA5577N								
FA5640N	11 - 26V	オン-オフ幅検出による ボトムスキップ数制御 Bottom skip control by on-off width detection	自動復帰 Auto-Recovery	ZCD	内蔵 Built-in (500V)	間欠動作 Intermittent Switching	14V ON 8V OFF	最小周波数制限機能 Min. frequency limitation
FA5641N							10V ON 8V OFF	
FA5642N							14V ON 8V OFF	最小周波数制限 Min. frequency limitation IS 端子ラッチ停止 Latch stop function (IS pin)
FA5643N			タイマーラッチ Timer-latch					
FA5644N			自動復帰 Auto-Recovery				高周波動作向け For High SW frequency	
FA5648N								

PKG: 全て8pin All 8pin

● 低待機電力対応擬似共振制御IC系列 Green mode Quasi-resonant ICs



● 低待機電力対応擬似共振IC代表型式ブロック図 Block diagram of Quasi-resonant ICs (main model)



● 力率改善制御IC Power factor correction ICs

制御方式 Control mode	型式 Type Name	入力電圧 Input voltage	最大 デューティ Duty	電流検出 Current sense	UVLO Under- voltage lockout	動作 周波数 Frequency	最大 周波数 Maximum frequency	ゼロ電流 検出 Zero Current Detection	FBオープン ショート保護 FB open short protection	過電圧保護 Over voltage protection	備考 Remarks					
臨界モード CRM	FA5590N	10 - 26V	-	マイナス Negative	9.6V ON 9.0V OFF	自動方式 Self-oscillation	外部調整 Adjustable	電流検出 Current sence	内蔵 Built-in	パルス幅制御電圧制限 Voltage-Limit by Pulse width						
	FA5591N				13.0V ON 9.0V OFF											
	FA5695N				13.0V ON 9.0V OFF											
	FA5696N				9.6V ON 9.0V OFF											
	FA1A10N○				9.6V ON 8.8V OFF											
	FA1A11N○				12.4V ON 8.8V OFF											
	FA1A00N●				9.6V ON 8.8V OFF											
	FA1A01N●				12.4V ON 8.8V OFF											
	FA5601N				13.0V ON 9.0V OFF							外部調整 Adjustable	補助巻線 Auxiliary- winding	-	パルス幅制御電圧制限 Voltage-Limit by Pulse width	
	FA1A31N○				17.3V ON 8.8V OFF							固定				
	FA1A21N○											固定				
連続モード CCM	FA5502P/M	10 - 28V	94%	マイナス Negative	16.5V ON 8.9V OFF	外部調整 Adjustable	150kHz	-	-	電圧制限 Voltage-Limit						
	FA5612N	10 - 26V		マイナス Negative	9.6V ON 9.0V OFF	外部選択 Choice 65/60kHz/jitter (50-70kHz)	-			-	内蔵 Built-in	パルス幅制御電圧制限 Voltage-Limit by Pulse width				
	FA5613N				13.0V ON 9.0V OFF											

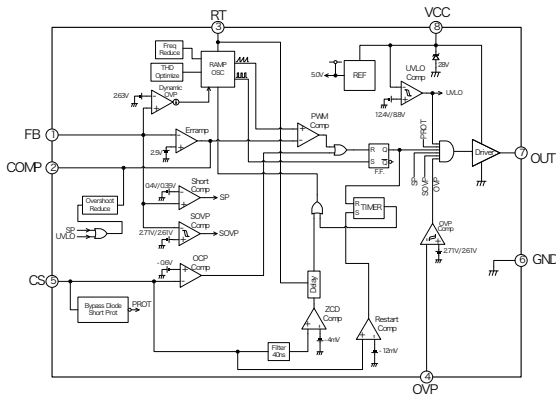
●:新製品 New Products ○:開発中 Under development
 PKG: FA5502のみ16pin 他は全て8pin FA5502 is 16pin, others are 8pin

● 力率改善制御IC系列 Power factor correction ICs

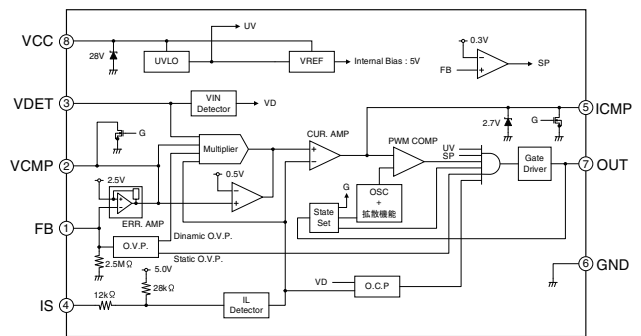
力率改善制御IC PFC IC														
動作モード Mode	臨界モード CRM Mode					連続モード CCM Mode								
最大動作周波数 Maximum frequency	外部調整 Adjustable					固定 Fixed								
電流検出 Current sense	プラス Positive		マイナス Negative			プラス Positive		マイナス Negative		マイナス Negative				
低電圧誤動作防止 UVLO	13.0V ON 9.0V OFF	9.6V ON 9.0V OFF	13.0V ON 9.0V OFF	17.3V ON 8.8V OFF	9.6V ON 8.8V OFF	12.4V ON 8.8V OFF	9.6V ON 9.0V OFF	13.0V ON 9.0V OFF	16.5V ON 8.9V OFF					
過電圧保護 Over voltage protection	シングル Single	シングル Single	デュアル Dual	シングル Single	デュアル Dual	シングル Single	シングル Single	デュアル Dual	シングル Single	デュアル Dual				
その他 Other	ゼロ電流 検出端子 with ZCD sense pin			ゼロ電流 検出端子 with ZCD sense pin			発振周波数 外部選択 60/65kHz/jitter (50-70kHz) Choice		発振周波数 外部調整 15-150kHz Adjustable					
型式 Product type	FA5601N	FA5590N	FA5696N	FA5591N	FA5695N	FA1A21N	FA1A31N	FA1A10N	FA1A00N	FA1A11N	FA1A01N	FA5612N	FA5613N	FA5502P/M

● 力率改善制御IC代表型式ブロック図 Block diagram of Power factor correction ICs (main model)

FA5590N/FA5591N



FA5613N

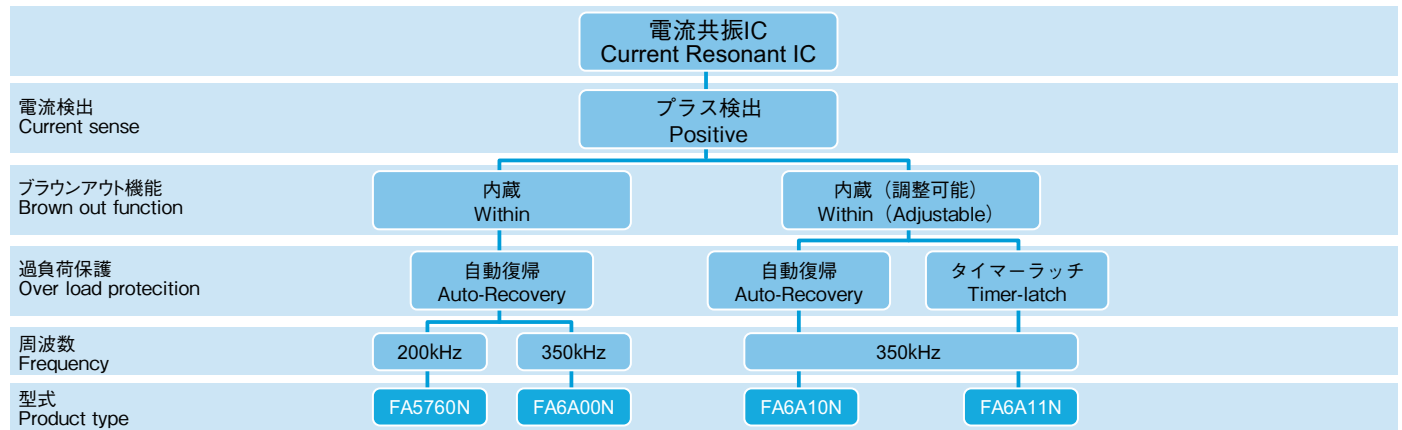


● 電流共振IC Current Resonant ICs

型式 Type Name	制御方式 Control mode	入力電圧 Input voltage	UVLO Under-voltage lockout	電流検出 Current sense	動作 周波数 Frequency	最大 周波数 Maximum frequency	過負荷保護 Over load protection	過電圧保護 Over voltage protection	起動回路 Start up circuit	ブラウンアウト機能 Brown out function
FA5760N	電圧モード Voltage mode	10 - 24V	12.0V ON 8.9V OFF	プラス Positive	自動方式 Self-oscillation	200kHz	自動復帰 Auto-Recovery	タイマーラッチ Timer-latch	内蔵 Built-in (500V)	内蔵 (固定) Within (Fixed)
FA6A00N●			12.0V ON 9.0V OFF							
FA6A10N●		14 - 27V	12.0V ON 9.0V OFF			350kHz	タイマーラッチ Timer-latch			内蔵 (調整可能) Within (adjustable)
FA6A11N●										

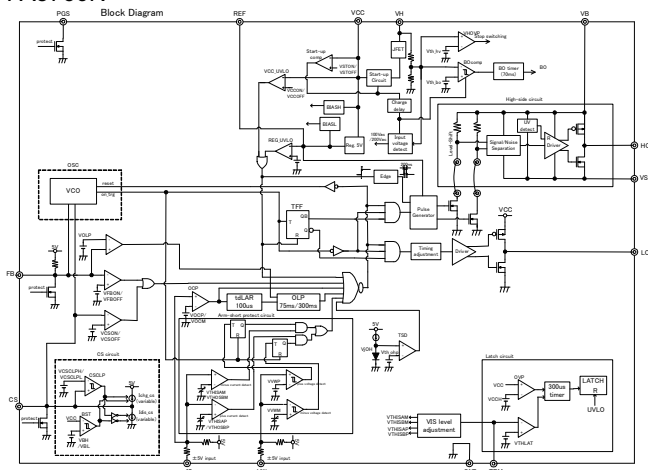
●: 新製品 New Products
PKG: 全て16pin All 16pin

● 電流共振IC Current Resonant ICs

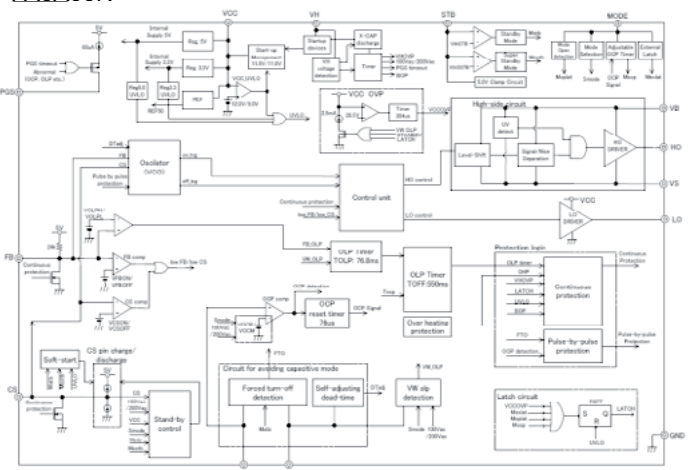


● 電流共振IC型式ブロック図 Block diagram of Current Resonant ICs

FA5760N



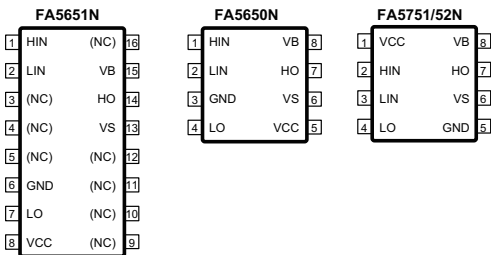
FA6A00N



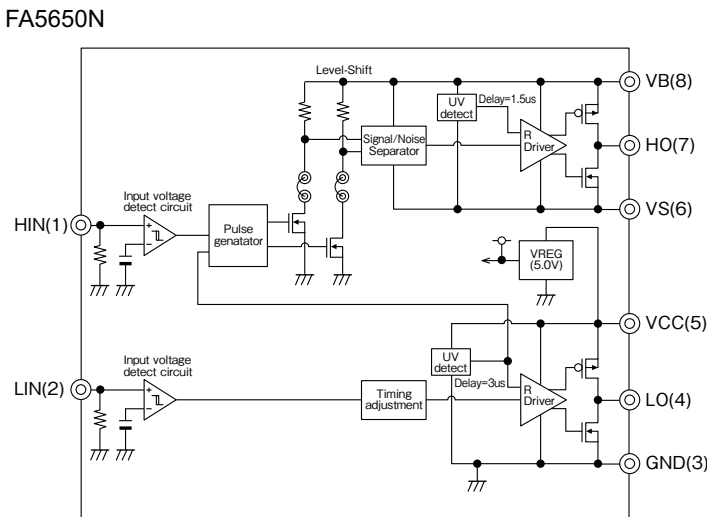
■ ハイサイド・ローサイドドライバ IC High and Low side driver ICs (HVIC)

回路方式 Circuit type	型式 Type name	絶対最大定格 Absolute maximum ratings				電気的特性 Electrical characteristics				
		ハイサイド 対地電圧 High side floating supply voltage	入力電圧 Maximum supply voltage	出力電流 Output current source / sink	最大動作 周波数 Maximum input frequency	論理入力 電圧 Logic"1" / "0" Input voltage level (typ.)	入出力遅延 時間 Turn-on and turn-off propagation delay (typ.)	電源電圧 低下保護 VCC and VBS supply under-voltage threshold (typ.)	入力系統数 Number of Input terminal	パッケージ Package
ハーフ ブリッジ Half-bridge	FA5650N	830V	30V	-1.4A/1.8A	500kHz	Logic"1" 2.1V	125ns	positive going 8.9V negative going 8.2V	2	SOP-8
	FA5651N					Logic"0" 1.1V				SOP-16
	FA5751N	624V	24V	-0.2A/0.35A		Logic"1" 2.1V	125ns			SOP-8
	FA5752N			High side IHO: -0.62A/1.00A Low side ILO: -0.56A/0.91A		Logic"0" 1.3V				

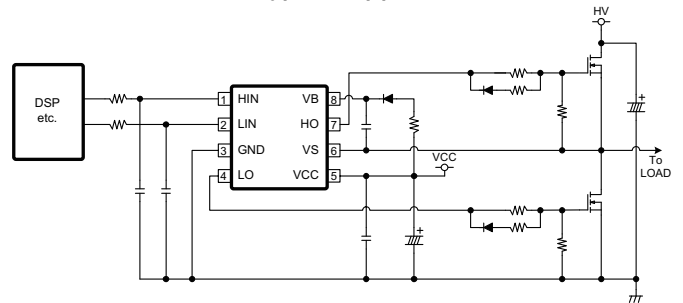
■ 端子配置 Pin Layout



■ ブロック図 (代表型式) Block diagram (main model)



■ 標準応用回路 Typical application circuit

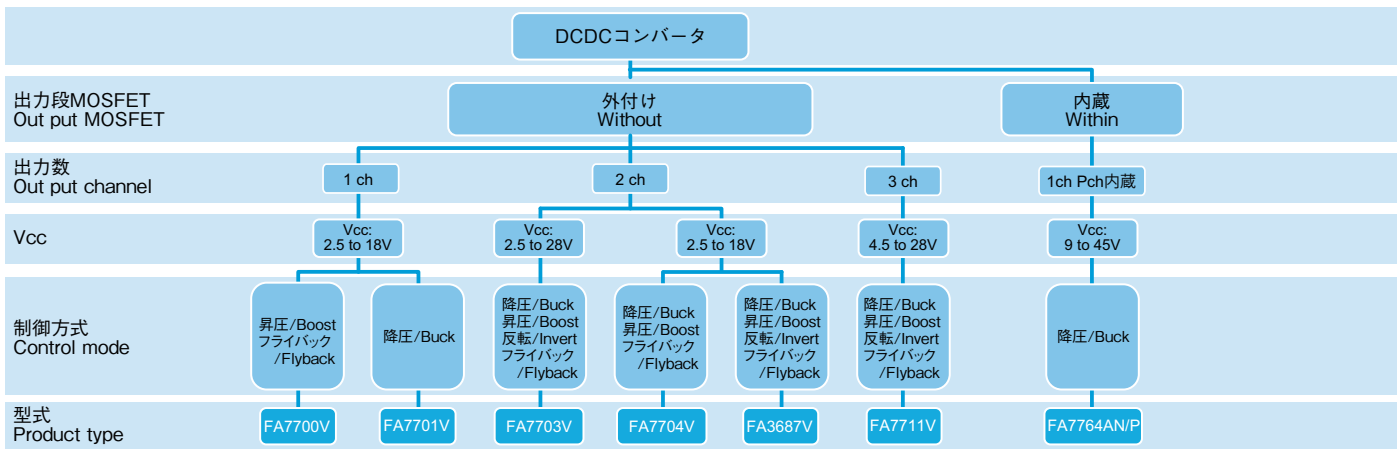


DC/DC 電源制御用 IC DC/DC Power Supply control ICs

● DC/DC制御IC DC/DC Power Supply control ICs

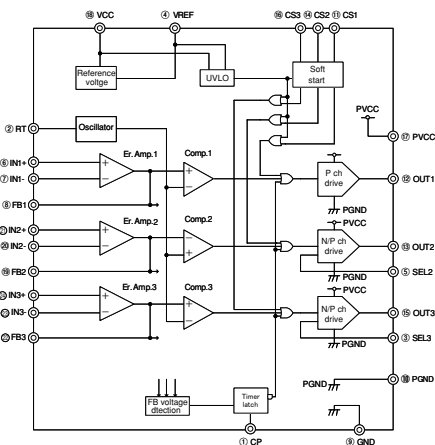
型式 Type Name	制御方式 Control mode				出力数 Output channel	入力電圧 Input voltage	動作周波数 Frequency	基準電圧 Reference Voltage	動作周囲温度 Operating Ambient Temperature	出力電流 Output Current	出力段 MOSFET Output MOSFET	パッケージ Package
	昇圧 Boost	フライバック Fly back	降圧 Buck	反転 Inverting								
FA7700V	✓	✓			1	2.5 - 18V	50k - 1MHz	0.88V	-30 — +85°C	—	—	TSSOP-8
FA7701V			✓		1	2.5 - 18V	50k - 1MHz	0.88V	-30 — +85°C	—	—	TSSOP-8
FA7703V	✓	✓	✓	✓	2	2.5 - 28V	50k - 1MHz	1.0V	-30 — +85°C	—	—	TSSOP-16 SOP-16
FA7704V	✓	✓	✓		2	2.5 - 18V	50k - 1MHz	1.0V	-30 — +85°C	—	—	TSSOP-16
FA3687V	✓	✓	✓	✓	2	2.5 - 18V	300k - 1.5MHz	1.0V	-40 — +85°C	—	—	TSSOP-16
FA7711V	✓	✓	✓	✓	3	4.5 - 28V	200k - 800kHz	Adjustable	-20 — +85°C	—	—	TSSOP-24
FA7764AN/P			✓		1	9 - 45V	30k - 400kHz	1.0V	-20 — +85°C	1.5A	内蔵 Built-In	SOP-8E

● DC/DC制御IC系列 (MOSFET外付け) DC/DC Power Supply control ICs (without MOSFET)

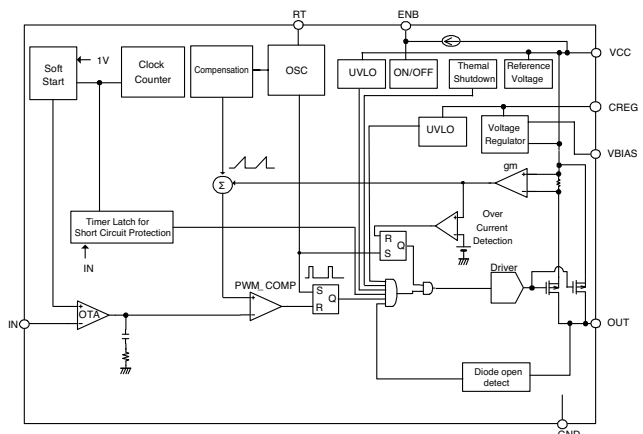


● DC/DC制御IC代表型式ブロック図 Block diagram of DC/DC Power Supply control ICs (main model)

FA7711V



FA7764AN/P



■ Super J-MOS™シリーズの特長 Features of the Super J-MOS™ series

■コンセプト Concept

スーパージャンクション技術により、従来のパワー MOSFET に比べ、素子耐圧とオン抵抗 (Ron・A) のトレードオフを大幅に改善し、ターンオフ損失とターンオフ dV/dt とのトレードオフ特性を従来のパワー MOSFET と同等レベルにする事で、低損失と低ノイズ特性を両立し電源の高効率化、小型化をサポートします。

Superjunction technology has much improved trade-off charactaricity between On-resistance and Breakdown voltage.

Super J-MOS has the same turn-off loss and turn-off dv/dt capabilities at conventional MOSFET.

As a result, It contributes to high efficiency and miniaturization of power supply.

■特長 Features

- 低オン抵抗 RonA を従来比 (Super FAP-E³) 約 75% 低減
- 低ターンオフ損失と低ノイズを両立
- アバランシェ耐量保証
- ゲート閾値電圧 3.0±0.5V 保証
- 低オン抵抗化によりパッケージ小型化が可能
ex) 600V/0.28Ω/TO-3P → 600V/0.28Ω/TO-220

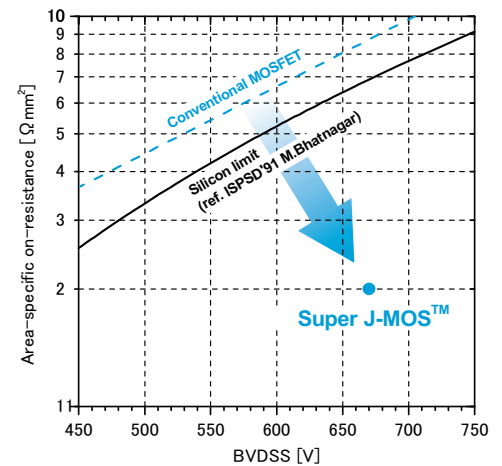
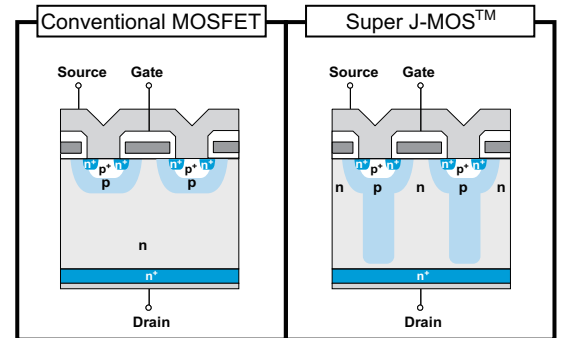
- Low RDS (on) 75% lower than our conventional MOSFET
- Coping with both low turn-off loss and low noise
- Guaranteed avalanche robustness
- Narrow band of the gate threshold voltage (3.0±0.5V)
- Due to low RDS (on), Selectable smaller package
ex) 600V/0.28Ω/TO-3P → 600V/0.28Ω/TO-220

■用途 Applications

サーバ、PC、太陽光、UPS、液晶テレビ、照明、標準電源などの PFC 回路・PWM コンバータ

PFC or PWM converter for Server, PC, Solar, UPS, LCD-TV, Lighting and Standard power supply

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4 パワー-MOSFET/Power MOSFETs

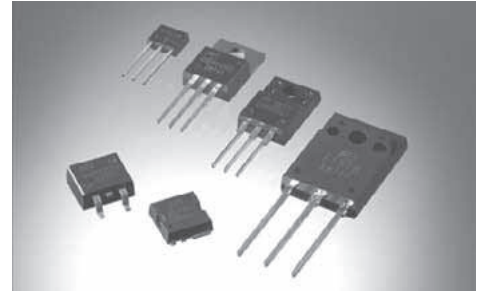
■ SuperFAP-E³, E^{3S}シリーズの特長 Features of the SuperFAP-E³, E^{3S} series

■コンセプト Concept

カニ世代擬平面接合技術により、“低損失、低ノイズ特性”と“使い易さ”を両立し、電源セットの設計から製品までのトータル性能向上をサポートします。

The second generation Quasi-Planer Junction technology copes with both low loss/noise and usability.

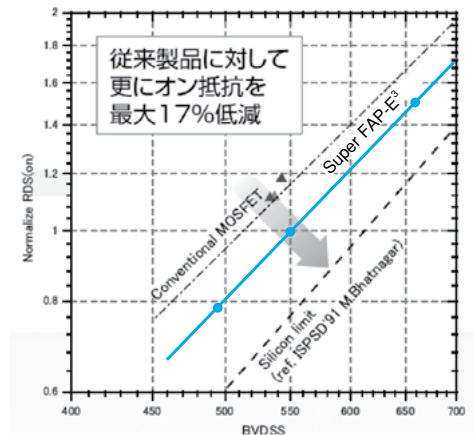
And this technology lets us achieve high performance for power supply's circuit design.



■特長 Features

- 低損失特性と低ノイズ特性の両立
 - 低オン抵抗特性
 - スイッチング時 dv/dt のゲート抵抗制御性が良い
 - スイッチング時の VGS のリングングが小さい
 - ゲートしきい値電圧幅 ±0.5V
 - 高アバランシェ耐量
- Coping with both low loss and low noise
 - Low RDS(on)
 - High controllability of gate resistance during switching
 - Low VGS ringing waveform during switching
 - Narrow band of the gate threshold voltage(3.0±0.5V)
 - High avalanche durability

E³コンセプト概念図 Concept



■ SuperFAP-Gシリーズの特長 Features of the SuperFAP-G series

擬平面接合技術により、低 Qgd によるスイッチング損失と低オン抵抗特性を実現しました。

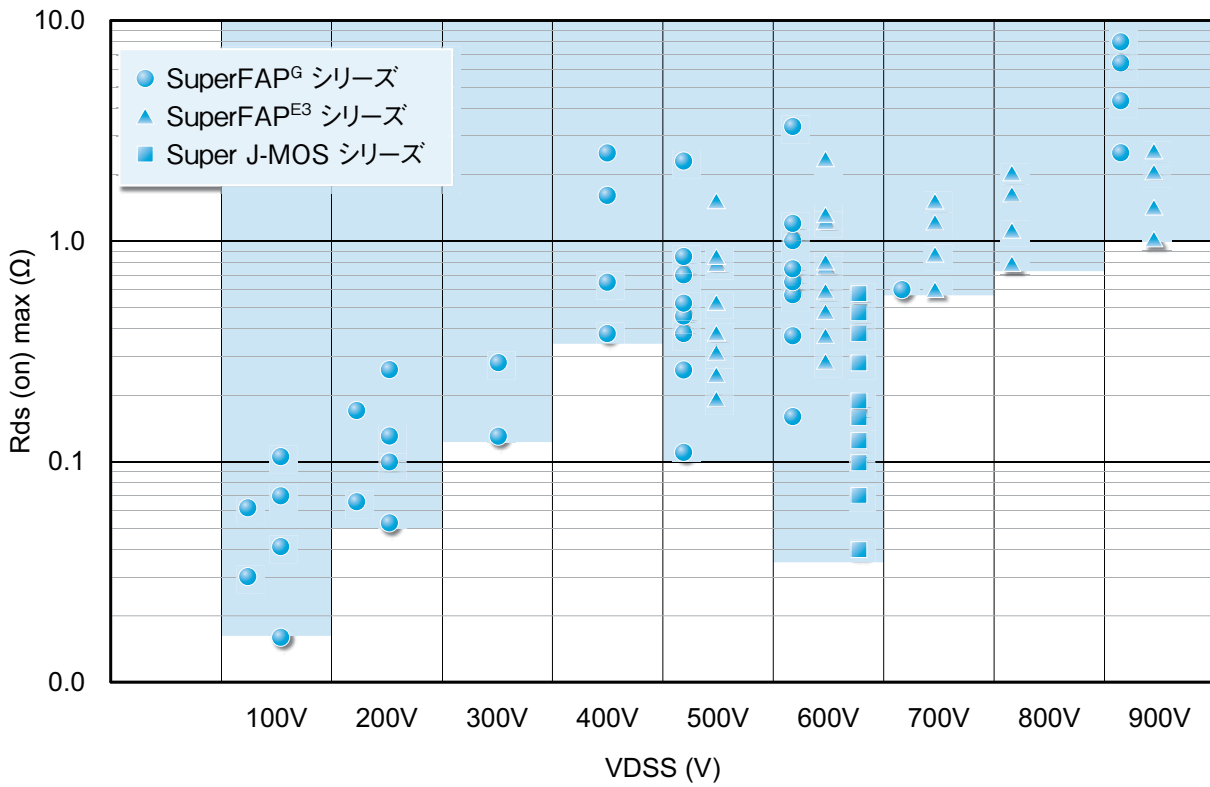
The Quasi-Planer Junction technology achieve low RDS(on) and low switching loss (low Qgd).

■特長 Features

- ターンオフ損失の低減 従来比で約 75%低減
- 低ゲートチャージ 従来比で約 60%低減
- 高アバランシェ耐量
- 低オン抵抗化によりパッケージ小型化が可能
ex) 500V/0.4Ω/TO-3P → 500V/0.38Ω/TO-220

- Low turn off loss 75% lower than our conventional type
- Low Gate charge 60% lower than our conventional type
- High avalanche durability
- Due to low RDS(on), Selectable smaller package
ex) 500V/0.4Ω/TO-3P → 500V/0.38Ω/TO-220

■ 系列マップ Series map



■ 型式の見方 Part numbers

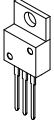
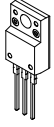

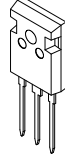

FMV20N60S1 (example)

F	M	V	20	N	60	S1
社名 Company Symbol	機種コード Device code	パッケージコード Package code	定格電流 Current	極性 Polarity	定格電圧 Voltage	製品シリーズ Series
Fuji	M MOSFET	A TO-220F B D2-pack C T-pack (S) H TO-3P I T-pack (L) P TO-220 R TO-3PF V TO-220F (SLS) W TO-247	×1	N N-ch	×1/10	S1 Super J-MOS S1FD Super J-MOS (FRED) S1A Super J-MOS for Automotive S1FDA Super J-MOS (FRED) for Automotive E SuperFAP-E ³ ES SuperFAP-E ^{3S} G SuperFAP-G GF SuperFAP-G (FRED) T2 Trench R 3G-Trench

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Super J-MOS™ シリーズ Super J-MOS™ series

低オン抵抗、低ノイズ、低スイッチング損失 Low-on resistance, low switching noise and low switching loss

Super J-MOS™ series			TO-220	TO-220F (SLS)	TO-3P(Q)	TO-247-P2	D2-Pack
							
Vds (V)	Ron (Ω)	Id (A)					
600	0.58	6.5	✓	✓			✓
	0.47	8	✓	✓			✓
	0.38	10	✓	✓			✓
	0.28	13	✓	✓			✓
	0.19	20	✓	✓	✓	✓	✓
	0.16	22	✓	✓	✓	✓	✓
	0.125	30	✓	✓	✓	✓	✓
	0.09	35		✓	✓	✓	
	0.07	47			✓	✓	
0.04	68				✓		

600Vクラス 600V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. Ohms (Ω)	P _D Watts	V _{GS} Volts	V _{GS} (th) Volts	Q _g typ. nC	パッケージ Package	質 量 Net mass Grams
● FMP07N60S1	600	6.5	19.5	0.58	60	30	4±1.0	21	TO-220AB	2.0
● FMV07N60S1	600	6.5	19.5	0.58	21	30	4±1.0	21	TO-220F(SLS)	2.0
○ FMB07N60S1	600	6.5	19.5	0.58	(60)	30	4±1.0	21	D2-Pack	(1.6)
● FMP08N60S1	600	8	24	0.47	70	30	4±1.0	25	TO-220AB	2.0
● FMV08N60S1	600	8	24	0.47	25	30	4±1.0	25	TO-220F(SLS)	2.0
○ FMB08N60S1	600	8	24	0.47	(70)	30	4±1.0	25	D2-Pack	(1.6)
● FMP10N60S1	600	10	30	0.38	90	30	4±1.0	28	TO-220AB	2.0
● FMV10N60S1	600	10	30	0.38	32	30	4±1.0	28	TO-220F(SLS)	2.0
○ FMB10N60S1	600	10	30	0.38	(90)	30	4±1.0	28	D2-Pack	(1.6)
● FMP13N60S1	600	13	39	0.28	120	30	4±1.0	35	TO-220AB	2.0
● FMV13N60S1	600	13	39	0.28	43	30	4±1.0	35	TO-220F(SLS)	2.0
○ FMB13N60S1	600	13	39	0.28	(120)	30	4±1.0	35	D2-Pack	(1.6)
● FMP20N60S1	600	20	60	0.19	150	30	4±1.0	48	TO-220AB	2.0
● FMV20N60S1	600	20	60	0.19	60	30	4±1.0	48	TO-220F(SLS)	2.0
● FMH20N60S1	600	20	60	0.19	130	30	4±1.0	48	TO-3P(Q)	5.0
● FMW20N60S1	600	20	60	0.19	130	30	4±1.0	48	TO-247-P2	6.0
○ FMB20N60S1	600	20	60	0.19	(150)	30	4±1.0	48	D2-Pack	(1.6)
○ FMP22N60S1	600	22	66	0.160	(195)	30	4±1.0	(57)	TO-220AB	2.0
○ FMV22N60S1	600	22	66	0.160	(73)	30	4±1.0	(57)	TO-220F(SLS)	2.0
○ FMH22N60S1	600	22	66	0.160	(170)	30	4±1.0	(57)	TO-3P(Q)	5.0
○ FMW22N60S1	600	22	66	0.160	(170)	30	4±1.0	(57)	TO-247-P2	6.0
○ FMB22N60S1	600	22	66	0.160	(195)	30	4±1.0	(57)	D2-Pack	(1.6)
● FMP30N60S1	600	30	90	0.125	250	30	4±1.0	73	TO-220AB	2.0
● FMV30N60S1	600	30	90	0.125	90	30	4±1.0	73	TO-220F(SLS)	2.0
● FMH30N60S1	600	30	90	0.125	220	30	4±1.0	73	TO-3P(Q)	5.0
● FMW30N60S1	600	30	90	0.125	220	30	4±1.0	73	TO-247-P2	6.0
○ FMB30N60S1	600	30	90	0.125	(250)	30	4±1.0	73	D2-Pack	(1.6)
○ FMV35N60S1	600	35	105	0.099	(110)	30	4±1.0	(87)	TO-220F(SLS)	2.0
○ FMH35N60S1	600	35	105	0.099	(270)	30	4±1.0	(87)	TO-3P(Q)	5.0
○ FMW35N60S1	600	35	105	0.099	(270)	30	4±1.0	(87)	TO-247-P2	6.0
● FMH47N60S1	600	47	141	0.07	390	30	4±1.0	125	TO-3P(Q)	5.0
● FMW47N60S1	600	47	141	0.07	390	30	4±1.0	125	TO-247-P2	6.0
● FMW79N60S1	600	68	204	0.04	545	30	4±1.0	203	TO-247-P2	6.0

●:新製品 New Products ○:開発中 Under development

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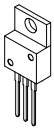
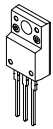
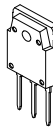


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If you intend to use the products for equipment requiring higher reliability, such as equipment for automobiles and medical equipment, please contact Fuji Electric. Do not use the products for equipment requiring strict reliability such as aerospace equipment.

■ Super J-MOS™ シリーズ 高速ダイオード内蔵シリーズ
 Super J-MOS™ Built-in FRED series 600V class

低オン抵抗、低ノイズ、低スイッチング損失 Low-on resistance, low switching noise and low switching loss

Super J-MOS™ Built-in FRED series 600V class			TO-220	TO-220F (SLS)	TO-3P(Q)	TO-247-P2	D2-Pack
							
Vds (V)	Ron (Ω)	Id (A)					
600	0.2	20	✓	✓	✓	✓	✓
	0.17	22	✓	✓	✓	✓	✓
	0.132	30	✓	✓	✓	✓	✓
	0.105	35		✓	✓	✓	
	0.074	47			✓	✓	
	0.042	68				✓	

■ 600Vクラス 600V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. Ohms (Ω)	P _D Watts	V _{GS} Volts	V _{GS} (th) Volts	Q _g typ. nC	T _{rr} typ. ns	パッケージ Package	質量 Net mass Grams
○ FMP20N60S1FD	600	20	60	0.20	150	30	4.0±1.0	52	150	TO-220AB	2.0
○ FMV20N60S1FD	600	20	60	0.20	60	30	4.0±1.0	52	150	TO-220F(SLS)	2.0
○ FMH20N60S1FD	600	20	60	0.20	130	30	4.0±1.0	52	150	TO-3P(Q)	5.0
○ FMW20N60S1FD	600	20	60	0.20	130	30	4.0±1.0	52	150	TO-247-P2	6.0
○ FMB20N60S1FD	600	20	60	0.20	(150)	30	4.0±1.0	52	150	D2-Pack	(1.6)
○ FMP22N60S1FD	600	22	66	(0.170)	(195)	30	4.0±1.0	(60)	(165)	TO-220AB	2.0
○ FMV22N60S1FD	600	22	66	(0.170)	(73)	30	4.0±1.0	(60)	(165)	TO-220F(SLS)	2.0
○ FMH22N60S1FD	600	22	66	(0.170)	(170)	30	4.0±1.0	(60)	(165)	TO-3P(Q)	5.0
○ FMW22N60S1FD	600	22	66	(0.170)	(170)	30	4.0±1.0	(60)	(165)	TO-247-P2	6.0
○ FMB22N60S1FD	600	22	66	(0.170)	(195)	30	4.0±1.0	(60)	(165)	D2-Pack	(1.6)
○ FMP30N60S1FD	600	30	90	0.132	250	30	4.0±1.0	73	180	TO-220AB	2.0
○ FMV30N60S1FD	600	30	90	0.132	90	30	4.0±1.0	73	180	TO-220F(SLS)	2.0
○ FMH30N60S1FD	600	30	90	0.132	220	30	4.0±1.0	73	180	TO-3P(Q)	5.0
○ FMW30N60S1FD	600	30	90	0.132	220	30	4.0±1.0	73	180	TO-247-P2	6.0
○ FMB30N60S1FD	600	30	90	0.132	(250)	30	4.0±1.0	73	180	D2-Pack	(1.6)
○ FMV35N60S1FD	600	35	105	(0.105)	(110)	30	4.0±1.0	(91)	(185)	TO-220F(SLS)	2.0
○ FMH35N60S1FD	600	35	105	(0.105)	(270)	30	4.0±1.0	(91)	(185)	TO-3P(Q)	5.0
○ FMW35N60S1FD	600	35	105	(0.105)	(270)	30	4.0±1.0	(91)	(185)	TO-247-P2	6.0
○ FMH47N60S1FD	600	47	141	0.074	390	30	4.0±1.0	127	210	TO-3P(Q)	5.0
○ FMW47N60S1FD	600	47	141	0.074	390	30	4.0±1.0	127	210	TO-247-P2	6.0
○ FMW79N60S1FD	600	68	204	0.042	545	30	4.0±1.0	209	230	TO-247-P2	6.0

○:開発中 Under development

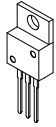
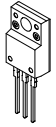
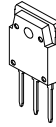
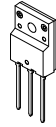
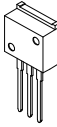

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SuperFAP-E³シリーズ SuperFAP-E³ series

低オン抵抗、低ノイズ Low-on resistance and low switching noise

SuperFAP-E ³ series			TO-220	TO-220 (SLS)	TO-3P (Q)	TO-3PF	T-Pack(L)	T-Pack(S)
								
Vds (V)	Ron (Ω)	Id (A)						
500	1.5	5	✓	✓			✓	✓
	0.85	6.5	✓	✓			✓	✓
	0.79	7.5	✓	✓				
	0.52	12	✓	✓			✓	✓
	0.38	16	✓	✓	✓		✓	✓
	0.31	20	✓	✓	✓		✓	✓
	0.245	23		✓	✓	✓		
	0.19	28			✓	✓		
600	2.3	3	✓	✓			✓	✓
	1.3	6	✓	✓			✓	✓
	1.2	6	✓	✓				
	0.79	10	✓	✓			✓	✓
	0.75	11	✓	✓			✓	✓
	0.58	13	✓	✓			✓	✓
	0.47	16	✓	✓			✓	✓
	0.365	19		✓	✓	✓		
	0.28	23			✓	✓		
	0.19	28						
650	1.47	7		✓				
	0.97	9		✓				
700	1.5	7		✓	✓			
	1.2	9		✓	✓			
	0.85	11		✓	✓			
	0.59	15		✓				
800	2	6		✓	✓		✓	✓
	1.6	8		✓	✓		✓	✓
	1.1	10		✓	✓			
	0.78	13		✓	✓			
900	2.5	6		✓	✓		✓	✓
	2	7		✓	✓			
	1.4	9		✓	✓	✓		
	1	11		✓	✓	✓		

MOSFET

■ SuperFAP-E³シリーズ SuperFAP-E³ series

■ 500V クラス 500V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Qg Typ. nC	パッケージ Package	質 量 Net mass Grams
FMP05N50E	500	5	20	1.5	60	30	3±0.5	21	TO-220AB	2.0
FMV05N50E	500	5	20	1.5	21	30	3±0.5	21	TO-220F(SLS)	1.7
FMI05N50E	500	5	20	1.5	60	30	3±0.5	21	T-Pack(L)	1.6
FMC05N50E	500	5	20	1.5	60	30	3±0.5	21	T-Pack(S)	1.6
FMP07N50E	500	6.5	26	0.85	90	30	3±0.5	32	TO-220AB	2.0
FMV07N50E	500	6.5	26	0.85	32	30	3±0.5	32	TO-220F(SLS)	1.7
FMI07N50E	500	6.5	26	0.85	90	30	3±0.5	32	T-Pack(L)	1.6
FMC07N50E	500	6.5	26	0.85	90	30	3±0.5	32	T-Pack(S)	1.6
FMP08N50E	500	7.5	30	0.79	105	30	3±0.5	35	TO-220AB	2.0
FMV08N50E	500	7.5	30	0.79	37	30	3±0.5	35	TO-220F(SLS)	1.7
FMP12N50E	500	12	48	0.52	165	30	3±0.5	60	TO-220AB	2.0
FMV12N50E	500	12	48	0.52	60	30	3±0.5	60	TO-220F(SLS)	1.7
FMI12N50E	500	12	48	0.52	165	30	3±0.5	60	T-Pack(L)	1.6
FMC12N50E	500	12	48	0.52	165	30	3±0.5	60	T-Pack(S)	1.6
FMP16N50E	500	16	64	0.38	225	30	3±0.5	60	TO-220AB	2.0
FMV16N50E	500	16	64	0.38	80	30	3±0.5	60	TO-220F(SLS)	1.7
FMI16N50E	500	16	64	0.38	225	30	3±0.5	60	T-Pack(L)	1.6
FMC16N50E	500	16	64	0.38	225	30	3±0.5	60	T-Pack(S)	1.6
FMH16N50E	500	16	64	0.38	195	30	3±0.5	60	TO-3P(Q)	5.1
FMP20N50E	500	20	80	0.31	270	30	3±0.5	77	TO-220AB	2.0
FMV20N50E	500	20	80	0.31	95	30	3±0.5	77	TO-220F(SLS)	1.7
FMI20N50E	500	20	80	0.31	270	30	3±0.5	77	T-Pack(L)	1.6
FMC20N50E	500	20	80	0.31	270	30	3±0.5	77	T-Pack(S)	1.6
FMH20N50E	500	20	80	0.31	235	30	3±0.5	77	TO-3P(Q)	5.1
FMV23N50E	500	23	92	0.245	130	30	3±0.5	93	TO-220F(SLS)	1.7
FMH23N50E	500	23	92	0.245	315	30	3±0.5	93	TO-3P(Q)	5.1
FMR23N50E	500	23	92	0.245	150	30	3±0.5	93	TO-3PF	6.0
FMH28N50E	500	28	112	0.19	400	30	3±0.5	130	TO-3P(Q)	5.1
FMR28N50E	500	28	112	0.19	200	30	3±0.5	130	TO-3PF	6.0

*1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

記号 Letter symbols

V _{DSS} : ドレイン・ソース電圧	Drain-source voltage	P _D : 許容損失電力	Maximum power dissipation
I _D : ドレイン電流	Continuous drain current	V _{GS} : ゲート・ソース電圧	Gate-source voltage
I _D (pulse): パルスドレイン電流	Pulsed drain current	V _{GS} (th): ゲートしきい値電圧	Gate threshold voltage
R _{DS} (on): ドレイン・ソース オン抵抗	Drain-source on-state resistance	Q _g : トータルゲートチャージ量	Total gate charge

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SuperFAP-E³シリーズ SuperFAP-E³ series

600 - 800V クラス 600 - 800V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Q _g Typ. nC	パッケージ Package	質量 Net mass Grams
FMP03N60E	600	3	12	2.3	60	30	3±0.5	21.5	TO-220AB	2.0
FMV03N60E	600	3	12	2.3	21	30	3±0.5	21.5	TO-220F(SLS)	1.7
FMI03N60E	600	3	12	2.3	60	30	3±0.5	21.5	T-Pack(L)	1.6
FMC03N60E	600	3	12	2.3	60	30	3±0.5	21.5	T-Pack(S)	1.6
FMP05N60E	600	5.5	22	1.3	90	30	3±0.5	33	TO-220AB	2.0
FMV05N60E	600	5.5	22	1.3	32	30	3±0.5	33	TO-220F(SLS)	1.7
FMI05N60E	600	5.5	22	1.3	90	30	3±0.5	33	T-Pack(L)	1.6
FMC05N60E	600	5.5	22	1.3	90	30	3±0.5	33	T-Pack(S)	1.6
FMP06N60E	600	6	24	1.2	105	30	3±0.5	35	TO-220AB	2.0
FMV06N60E	600	6	24	1.2	37	30	3±0.5	35	TO-220F(SLS)	1.7
FMP10N60E	600	10	40	0.79	165	30	3±0.5	47	TO-220AB	2.0
FMV10N60E	600	10	40	0.79	60	30	3±0.5	47	TO-220F(SLS)	1.7
FMI10N60E	600	10	40	0.79	165	30	3±0.5	47	T-Pack(L)	1.6
FMC10N60E	600	10	40	0.79	165	30	3±0.5	47	T-Pack(S)	1.6
FMP11N60E	600	11	44	0.75	180	30	3±0.5	48.5	TO-220AB	2.0
FMV11N60E	600	11	44	0.75	65	30	3±0.5	48.5	TO-220F(SLS)	1.7
FMI11N60E	600	11	44	0.75	180	30	3±0.5	48.5	T-Pack(L)	1.6
FMC11N60E	600	11	44	0.75	180	30	3±0.5	48.5	T-Pack(S)	1.6
FMP13N60E	600	13	52	0.58	225	30	3±0.5	60	TO-220AB	2.0
FMV13N60E	600	13	52	0.58	80	30	3±0.5	60	TO-220F(SLS)	1.7
FMI13N60E	600	13	52	0.58	225	30	3±0.5	60	T-Pack(L)	1.6
FMC13N60E	600	13	52	0.58	225	30	3±0.5	60	T-Pack(S)	1.6
FMP16N60E	600	16	64	0.47	270	30	3±0.5	76	TO-220AB	2.0
FMV16N60E	600	16	64	0.47	95	30	3±0.5	76	TO-220F(SLS)	1.7
FMI16N60E	600	16	64	0.47	270	30	3±0.5	76	T-Pack(L)	1.6
FMC16N60E	600	16	64	0.47	270	30	3±0.5	76	T-Pack(S)	1.6
FMV19N60E	600	19	76	0.365	130	30	3±0.5	105	TO-220F(SLS)	1.7
FMH19N60E	600	19	76	0.365	315	30	3±0.5	105	TO-3P(Q)	5.1
FMR19N60E	600	19	76	0.365	150	30	3±0.5	105	TO-3PF	6.0
FMH23N60E	600	23	92	0.28	400	30	3±0.5	130	TO-3P(Q)	5.1
FMR23N60E	600	23	92	0.28	200	30	3±0.5	130	TO-3PF	6.0
FMV07N65E	650	7	28	1.47	37	30	3±0.5	35	TO-220F(SLS)	1.7
FMV09N65E	650	9	36	0.97	60	30	3±0.5	47	TO-220F(SLS)	1.7
FMV07N70E	700	7	28	1.5	48	30	4±0.5	32	TO-220F(SLS)	1.7
FMH07N70E	700	7	28	1.5	115	30	4±0.5	32	TO-3P(Q)	5.1
FMV09N70E	700	9	36	1.2	60	30	4±0.5	38	TO-220F(SLS)	1.7
FMH09N70E	700	9	36	1.2	145	30	4±0.5	38	TO-3P(Q)	5.1
FMV11N70E	700	11	44	0.85	85	30	4±0.5	50	TO-220F(SLS)	1.7
FMH11N70E	700	11	44	0.85	205	30	4±0.5	50	TO-3P(Q)	5.1
FMV15N70E	700	15	60	0.59	120	30	4±0.5	66	TO-220F(SLS)	1.7
FMV06N80E	800	6	24	2.0	48	30	4±0.5	32	TO-220F(SLS)	1.7
FMH06N80E	800	6	24	2.0	115	30	4±0.5	32	TO-3P(Q)	5.1
FMI06N80E	800	6	24	2.0	135	30	4±0.5	32	T-Pack(L)	1.6
FMC06N80E	800	6	24	2.0	135	30	4±0.5	32	T-Pack(S)	1.6
FMV08N80E	800	8	32	1.6	60	30	4±0.5	38	TO-220F(SLS)	1.7
FMH08N80E	800	8	32	1.6	145	30	4±0.5	38	TO-3P(Q)	5.1
FMI08N80E	800	8	32	1.6	165	30	4±0.5	38	T-Pack(L)	1.6
FMC08N80E	800	8	32	1.6	165	30	4±0.5	38	T-Pack(S)	1.6
FMV10N80E	800	10	40	1.1	85	30	4±0.5	50	TO-220F(SLS)	1.7
FMH10N80E	800	10	40	1.1	205	30	4±0.5	50	TO-3P(Q)	5.1
FMV13N80E	800	13	52	0.78	120	30	4±0.5	66	TO-220F(SLS)	1.7
FMH13N80E	800	13	52	0.78	285	30	4±0.5	66	TO-3P(Q)	5.1

*1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

■ SuperFAP-E³ シリーズ SuperFAP-E³ series

■ 900V クラス 900V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS (on)} Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Q _g Typ. nC	パッケージ Package	質 量 Net mass Grams
FMH06N90E	900	6	24	2.5	115	30	4±0.5	33	TO-3P(Q)	5.1
FMV06N90E	900	6	24	2.5	48	30	4±0.5	33	TO-220F(SLS)	1.7
FMI06N90E	900	6	24	2.5	135	30	4±0.5	33	T-Pack(L)	1.6
FMC06N90E	900	6	24	2.5	135	30	4±0.5	33	T-Pack(S)	1.6
FMH07N90E	900	7	28	2.0	145	30	4±0.5	39	TO-3P(Q)	5.1
FMV07N90E	900	7	28	2.0	60	30	4±0.5	39	TO-220F(SLS)	1.7
FMI07N90E	900	7	28	2.0	165	30	4±0.5	39	T-Pack(L)	1.6
FMC07N90E	900	7	28	2.0	165	30	4±0.5	39	T-Pack(S)	1.6
FMH09N90E	900	9	36	1.4	205	30	4±0.5	50	TO-3P(Q)	5.1
FMV09N90E	900	9	36	1.4	85	30	4±0.5	50	TO-220F(SLS)	1.7
FMR09N90E	900	9	36	1.4	100	30	4±0.5	50	TO-3PF	6.0
FMH11N90E	900	11	44	1.0	285	30	4±0.5	60	TO-3P(Q)	5.1
FMV11N90E	900	11	44	1.0	120	30	4±0.5	60	TO-220F(SLS)	1.7
FMR11N90E	900	11	44	1.0	135	30	4±0.5	60	TO-3PF	6.0

*1 R_{DS (on)}: V_{GS}=10V, *2 P_D: T_C=25°C

SuperFAP-E^{3S} 低Qgシリーズ SuperFAP-E^{3S} Low Qg series

低オン抵抗、低ノイズ、低スイッチング損失 Low-on resistance, low switching noise and low switching loss

SuperFAP-E ^{3S} Low Qg series			TO-220	TO-220 (SLS)	TO-3P (Q)	TO-3PF	T-Pack(L)	T-Pack(S)	TFP
V _{ds} (V)	R _{on} (Ω)	I _d (A)							
500	0.5	12	✓	✓			✓	✓	✓
	0.38	16	✓	✓	✓		✓	✓	✓
	0.31	20	✓	✓	✓		✓	✓	✓
	0.27	21		✓	✓	✓			
	0.245	23		✓	✓	✓			
	0.19	28			✓	✓			
600	1.2	6	✓	✓			✓	✓	
	0.75	12	✓	✓			✓	✓	✓
	0.58	13	✓		✓		✓	✓	✓
	0.47	16	✓	✓	✓		✓	✓	✓
	0.4	17		✓	✓	✓			
	0.365	19		✓	✓	✓			
	0.28	23			✓	✓			

500V クラス 500V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Q _g Typ. nC	パッケージ Package	質量 Net mass Grams
FMP12N50ES	500	12	48	0.5	180	30	3.7±0.5	41	TO-220AB	2.0
FMV12N50ES	500	12	48	0.5	65	30	3.7±0.5	41	TO-220F(SLS)	1.7
FMI12N50ES	500	12	48	0.5	180	30	3.7±0.5	41	T-Pack(L)	1.6
FMC12N50ES	500	12	48	0.5	180	30	3.7±0.5	41	T-Pack(S)	1.6
FML12N50ES	500	12	48	0.5	180	30	3.7±0.5	41	TFP	1.6
FMP16N50ES	500	16	64	0.38	225	30	3.7±0.5	52	TO-220AB	2.0
FMV16N50ES	500	16	64	0.38	80	30	3.7±0.5	52	TO-220F(SLS)	1.7
FMI16N50ES	500	16	64	0.38	225	30	3.7±0.5	52	T-Pack(L)	1.6
FMC16N50ES	500	16	64	0.38	225	30	3.7±0.5	52	T-Pack(S)	1.6
FMH16N50ES	500	16	64	0.38	195	30	3.7±0.5	52	TO-3P(Q)	5.1
FML16N50ES	500	16	64	0.38	225	30	3.7±0.5	52	TFP	1.6
FMP20N50ES	500	20	80	0.31	270	30	4.2±0.5	57	TO-220AB	2.0
FMV20N50ES	500	20	80	0.31	95	30	4.2±0.5	57	TO-220F(SLS)	1.7
FMI20N50ES	500	20	80	0.31	270	30	4.2±0.5	57	T-Pack(L)	1.6
FMC20N50ES	500	20	80	0.31	270	30	4.2±0.5	57	T-Pack(S)	1.6
FMH20N50ES	500	20	80	0.31	235	30	4.2±0.5	57	TO-3P(Q)	5.1
FML20N50ES	500	20	80	0.31	270	30	4.2±0.5	57	TFP	1.6
FMV21N50ES	500	21	84	0.27	120	30	4.2±0.5	67	TO-220F(SLS)	1.7
FMR21N50ES	500	21	84	0.27	135	30	4.2±0.5	67	TO-3PF	6.0
FMH21N50ES	500	21	84	0.27	285	30	4.2±0.5	67	TO-3P(Q)	5.1
FMV23N50ES	500	23	92	0.245	130	30	4.2±0.5	74	TO-220F(SLS)	1.7
FMR23N50ES	500	23	92	0.245	150	30	4.2±0.5	74	TO-3PF	6.0
FMH23N50ES	500	23	92	0.245	315	30	4.2±0.5	74	TO-3P(Q)	5.1
FMR28N50ES	500	28	112	0.19	200	30	4.2±0.5	92	TO-3PF	6.0
FMH28N50ES	500	28	112	0.19	400	30	4.2±0.5	92	TO-3P(Q)	5.1

*1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

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■ SuperFAP-E^{3S} 低Qgシリーズ SuperFAP-E^{3S} Low Qg series

■ 600V クラス 600V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Qg Typ. nC	パッケージ Package	質 量 Net mass Grams
FMP06N60ES	600	6	24	1.2	105	30	3.7±0.5	31	TO-220AB	2.0
FMV06N60ES	600	6	24	1.2	37	30	3.7±0.5	31	TO-220F(SLS)	1.7
FMI06N60ES	600	6	24	1.2	105	30	3.7±0.5	31	T-Pack(L)	1.6
FMC06N60ES	600	6	24	1.2	105	30	3.7±0.5	31	T-Pack(S)	1.6
FMP12N60ES	600	12	48	0.75	180	30	4.2±0.5	37	TO-220AB	2.0
FMV12N60ES	600	12	48	0.75	65	30	4.2±0.5	37	TO-220F(SLS)	1.7
FMI12N60ES	600	12	48	0.75	180	30	4.2±0.5	37	T-Pack(L)	1.6
FMC12N60ES	600	12	48	0.75	180	30	4.2±0.5	37	T-Pack(S)	1.6
FML12N60ES	600	12	48	0.75	180	30	4.2±0.5	37	TFP	1.6
FMP13N60ES	600	13	48	0.58	225	30	4.2±0.5	48	TO-220AB	2.0
FMI13N60ES	600	13	48	0.58	225	30	4.2±0.5	48	T-Pack(L)	1.6
FMC13N60ES	600	13	48	0.58	225	30	4.2±0.5	48	T-Pack(S)	1.6
FMH13N60ES	600	13	48	0.58	195	30	4.2±0.5	48	TO-3P(Q)	5.1
FML13N60ES	600	13	48	1.58	225	30	4.2±0.5	48	TFP	1.6
FMP16N60ES	600	16	64	0.47	270	30	4.2±0.5	56	TO-220AB	2.0
FMV16N60ES	600	16	64	0.47	95	30	4.2±0.5	56	TO-220F(SLS)	1.7
FMI16N60ES	600	16	64	0.47	270	30	4.2±0.5	56	T-Pack(L)	1.6
FMC16N60ES	600	16	64	0.47	270	30	4.2±0.5	56	T-Pack(S)	1.6
FMH16N60ES	600	16	64	0.47	235	30	4.2±0.5	56	TO-3P(Q)	5.1
FML16N60ES	600	16	64	0.47	270	30	4.2±0.5	56	TFP	1.6
FMV17N60ES	600	17	68	0.4	120	30	4.2±0.5	68	TO-220F(SLS)	1.7
FMR17N60ES	600	17	68	0.4	135	30	4.2±0.5	68	TO-3PF	6.0
FMH17N60ES	600	17	68	0.4	285	30	4.2±0.5	68	TO-3P(Q)	5.1
FMV19N60ES	600	19	76	0.365	130	30	4.2±0.5	74	TO-220F(SLS)	1.7
FMR19N60ES	600	19	76	0.365	150	30	4.2±0.5	74	TO-3PF	6.0
FMH19N60ES	600	19	76	0.365	315	30	4.2±0.5	74	TO-3P(Q)	5.1
FMR23N60ES	600	23	92	0.28	200	30	4.2±0.5	92	TO-3PF	6.0
FMH23N60ES	600	23	92	0.28	400	30	4.2±0.5	92	TO-3P(Q)	5.1

*1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

SuperFAP-E^{3S} シリーズは、一般民生用向けの品質保証製品であります。車載用、医療機器など高度な信頼性を要求される機器へ適用される場合には、弊社にお問い合わせください。また、航空宇宙用など高度な信頼性を要求される機器への適用は行わないでください。

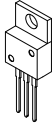
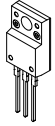
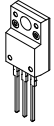
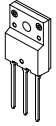
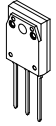
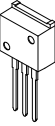


The SuperFAP-E^{3S} series products satisfies the quality assurance level of general consumer use.

If you intend to use the products for equipment requiring higher reliability, such as equipment for automobiles and medical equipment, please contact Fuji Electric.

Do not use the products for equipment requiring strict reliability such as aerospace equipment.

SuperFAP-Gシリーズ SuperFAP-G series

低オン抵抗、低ゲート容量 Low-on resistance and low gate charge

SuperFAP-G series			TO-220	TO-220F	TO-220 (SLS)	TO-3PF	TO-247	T-Pack(L)	T-Pack(S)	TFP
Vds (V)	Ron (Ω)	Id (A)								
100	0.062	29	✓	✓				✓	✓	
120	0.03	67	✓	✓				✓	✓	✓
150	0.105	23	✓	✓				✓	✓	
	0.1	23								
	0.07	33	✓	✓				✓	✓	✓
	0.041	57	✓	✓				✓	✓	✓
200	0.016	100					✓			
	0.17	18	✓	✓				✓	✓	✓
	0.066	45	✓	✓				✓	✓	✓
	0.26	14	✓	✓				✓	✓	
250	0.13	24			✓					
	0.1	37	✓	✓		✓		✓	✓	✓
	0.053	59				✓	✓			
280	0.061	56				✓				
300	0.28	15								
	0.13	32	✓	✓				✓	✓	✓
450	2.5	3	✓	✓						
	1.6	4	✓	✓						
	0.65	10	✓	✓				✓	✓	
	0.38	17	✓	✓				✓	✓	✓
500	2.3	4	✓	✓				✓	✓	
	0.85	9	✓	✓				✓	✓	
	0.7	11	✓	✓				✓	✓	
	0.52	14	✓	✓				✓	✓	
	0.46	16	✓	✓				✓	✓	
	0.38	19	✓	✓				✓	✓	
	0.26	25				✓	✓	✓	✓	✓
	0.11	51					✓			
600	3.3	3	✓	✓				✓	✓	
	1.2	8	✓	✓				✓	✓	
	1	9	✓	✓				✓	✓	
	0.75	12	✓	✓				✓	✓	
	0.65	13	✓	✓		✓				
	0.57	16	✓	✓			✓	✓	✓	
	0.37	21				✓	✓			
700	0.6	17				✓				
900	8	2.2	✓	✓						
	6.4	2.6	✓	✓				✓	✓	
	4.3	3.7	✓	✓						
	2.5	6.0						✓	✓	

MOSFET

■ SuperFAP-Gシリーズ SuperFAP-G series

■ 100 – 250V クラス 100 – 250V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Q _g Typ. nC	パッケージ Package	質 量 Net mass Grams
2SK3598-01	100	29	116	0.062	105	±30	3 to 5	22	TO-220AB	2.0
2SK3599-01MR	100	29	116	0.062	37	±30	3 to 5	22	TO-220F	1.7
2SK3600-01L, S	100	29	116	0.062	105	±30	3 to 5	22	T-pack	1.6
2SK3920-01	120	67	268	0.03	270	±30	3 to 5	52	TO-220AB	2.0
2SK3886-01MR	120	67	268	0.03	95	±30	3 to 5	52	TO-220F	1.7
2SK3921-01L, S	120	67	268	0.03	270	±30	3 to 5	52	T-pack	1.6
2SK3922-01	120	67	268	0.03	270	±30	3 to 5	52	TFP	0.8
2SK3602-01	150	23	92	0.105	105	±30	3 to 5	21	TO-220AB	2.0
2SK3603-01MR	150	23	92	0.105	37	±30	3 to 5	21	TO-220F	1.7
2SK3604-01L, S	150	23	92	0.105	105	±30	3 to 5	21	T-pack	1.6
2SK3648-01	150	33	132	0.07	150	±30	3 to 5	34	TO-220AB	2.0
2SK3649-01MR	150	33	132	0.07	53	±30	3 to 5	34	TO-220F	1.7
2SK3650-01L, S	150	33	132	0.07	150	±30	3 to 5	34	T-pack	1.6
2SK3474-01	150	33	132	0.07	150	±30	3 to 5	34	TFP	0.8
2SK3537-01MR	150	33	132	0.07	53	±20	1 to 2.5	46	TO-220F	1.7
2SK3590-01	150	57	228	0.041	270	±30	3 to 5	52	TO-220AB	2.0
2SK3591-01MR	150	57	228	0.041	95	±30	3 to 5	52	TO-220F	1.7
2SK3592-01L, S	150	57	228	0.041	270	±30	3 to 5	52	T-pack	1.6
2SK3593-01	150	57	228	0.041	270	±30	3 to 5	52	TFP	0.8
2SK3882-01	150	100	400	0.016	600	±30	3 to 5	140	TO-247	4.9
2SK3606-01	200	18	72	0.17	105	±30	3 to 5	21	TO-220AB	2.0
2SK3607-01MR	200	18	72	0.17	37	±30	3 to 5	21	TO-220F	1.7
2SK3608-01L, S	200	18	72	0.17	105	±30	3 to 5	21	T-pack	1.6
2SK3609-01	200	18	72	0.17	105	±30	3 to 5	21	TFP	0.8
2SK3594-01	200	45	180	0.066	270	±30	3 to 5	51	TO-220AB	2.0
2SK3595-01MR	200	45	180	0.066	95	±30	3 to 5	51	TO-220F	1.7
2SK3596-01L, S	200	45	180	0.066	270	±30	3 to 5	51	T-pack	1.6
2SK3597-01	200	45	180	0.066	270	±30	3 to 5	51	TFP	0.8
2SK3610-01	250	14	56	0.26	105	±30	3 to 5	21	TO-220AB	2.0
2SK3611-01MR	250	14	56	0.26	37	±30	3 to 5	21	TO-220F	1.7
2SK3612-01L, S	250	14	56	0.26	105	±30	3 to 5	21	T-pack	1.6
FMV24N25G	250	24	96	0.13	65	±30	3 to 5	36	TO-220F(SLS)	1.7
2SK3554-01	250	37	148	0.1	270	±30	3 to 5	44	TO-220AB	2.0
2SK3555-01MR	250	37	148	0.1	95	±30	3 to 5	44	TO-220F	1.7
2SK3556-01L, S	250	37	148	0.1	270	±30	3 to 5	44	T-pack	1.6
2SK3535-01	250	37	148	0.1	270	±30	3 to 5	44	TFP	0.8
2SK3651-01R	250	37	148	0.1	115	±30	3 to 5	44	TO-3PF	6.0
2SK3778-01	250	59	236	0.053	410	±30	3 to 5	80	TO-247	4.9
2SK3779-01R	250	59	236	0.053	210	±30	3 to 5	80	TO-3PF	6.0

*1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

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SuperFAP-Gシリーズ SuperFAP-G series

300 - 500V クラス 300 - 500V class

型式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Qg Typ. nC	パッケージ Package	質量 Net mass Grams
2SK3580-01MR	300	15	60	0.28	48	±30	3.5 to 4.5	23	TO-220F	1.7
2SK3772-01	300	32	128	0.13	270	±30	3 to 5	44.5	TO-220AB	2.0
2SK3773-01MR	300	32	128	0.13	95	±30	3 to 5	44.5	TO-220F	1.7
2SK3774-01L, S	300	32	128	0.13	270	±30	3 to 5	44.5	T-pack	1.6
2SK3775-01	300	32	128	0.13	270	±30	3 to 5	44.5	TFP	0.8
2SK3725-01	450	3	12	2.5	50	±30	3 to 5	10.5	TO-220AB	2.0
2SK3726-01MR	450	3	12	2.5	17	±30	3 to 5	10.5	TO-220F	1.7
2SK3916-01	450	4.3	17.2	1.6	21	±30	3 to 5	13	TO-220AB	2.0
2SK3917-01MR	450	4.3	17.2	1.6	21	±30	3 to 5	13	TO-220F	1.7
2SK3514-01	450	10	40	0.65	135	±30	3 to 5	22	TO-220AB	2.0
2SK3515-01MR	450	10	40	0.65	48	±30	3 to 5	22	TO-220F	1.7
2SK3516-01L, S	450	10	40	0.65	135	±30	3 to 5	22	T-pack	1.6
2SK3692-01	450	17	68	0.38	225	±30	3 to 5	33	TO-220AB	2.0
2SK3693-01MR	450	17	68	0.38	80	±30	3 to 5	33	TO-220F	1.7
2SK3694-01L, S	450	17	68	0.38	225	±30	3 to 5	33	T-pack	1.6
2SK4040-01	450	17	68	0.38	225	±30	3 to 5	33	TFP	0.8
2SK3985-01	500	3.6	14.4	2.3	60	±30	3 to 5	13	TO-220AB	2.0
2SK3986-01MR	500	3.6	14.4	2.3	21	±30	3 to 5	13	TO-220F	1.7
2SK3987-01L, S	500	3.6	14.4	2.3	60	±30	3 to 5	13	T-pack	1.6
2SK3519-01	500	9	36	0.85	135	±30	3 to 5	20	TO-220AB	2.0
2SK3520-01MR	500	9	36	0.85	48	±30	3 to 5	20	TO-220F	1.7
2SK4004-01MR	500	9	36	0.85	48	±30	2.5 to 3.5	24	TO-220F	1.7
2SK3521-01L, S	500	9	36	0.85	135	±30	3 to 5	20	T-pack	1.6
2SK3931-01	500	11	44	0.70	165	±30	3 to 5	25	TO-220AB	2.0
2SK3932-01MR	500	11	44	0.70	60	±30	3 to 5	25	TO-220F	1.7
2SK3933-01L, S	500	11	44	0.70	165	±30	3 to 5	25	T-pack	1.6
2SK3468-01	500	14	56	0.52	195	±30	3 to 5	30	TO-220AB	2.0
2SK3469-01MR	500	14	56	0.52	70	±30	3 to 5	30	TO-220F	1.7
2SK3512-01L, S	500	14	56	0.52	195	±30	3 to 5	30	T-pack	1.6
2SK3504-01	500	16	64	0.46	225	±30	3 to 5	33	TO-220AB	2.0
2SK3505-01MR	500	16	64	0.46	80	±30	3 to 5	33	TO-220F	1.7
2SK3581-01L, S	500	16	64	0.46	225	±30	3 to 5	33	T-pack	1.6
2SK3682-01	500	19	76	0.38	270	±30	3 to 5	32	TO-220AB	2.0
2SK3683-01MR	500	19	76	0.38	95	±30	3 to 5	32	TO-220F	1.7
2SK3684-01L, S	500	19	76	0.38	270	±30	3 to 5	32	T-pack	1.6
2SK3685-01	500	19	76	0.38	235	±30	3 to 5	32	TO-247	4.9
FML19N50G	500	19	76	0.38	270	±30	3 to 5	32	TFP	0.8
2SK3522-01	500	25	100	0.26	335	±30	3 to 5	54	TO-247	4.9
2SK3523-01R	500	25	100	0.26	160	±30	3 to 5	54	TO-3PF	6.0
2SK3680-01	500	51	208	0.11	600	±30	3 to 5	118	TO-247	4.9

*1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

■ SuperFAP-Gシリーズ SuperFAP-G series

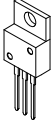
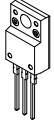
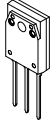
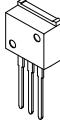

■ 600 – 900V クラス 600 – 900V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS (on)} Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Q _g Typ. nC	パッケージ Package	質 量 Net mass Grams
2SK3988-01	600	3	12	3.3	60	±30	3 to 5	13	TO-220AB	2.0
2SK3989-01MR	600	3	12	3.3	21	±30	3 to 5	13	TO-220F	1.7
2SK3990-01L, S	600	3	12	3.3	60	±30	3 to 5	13	T-pack	1.6
2SK3524-01	600	8	32	1.2	135	±30	3 to 5	20	TO-220AB	2.0
2SK3525-01MR	600	8	32	1.2	48	±30	3 to 5	20	TO-220F	1.7
2SK3526-01L, S	600	8	32	1.2	135	±30	3 to 5	20	T-pack	1.6
2SK3887-01	600	9	36	1.0	165	±30	3 to 5	25	TO-220AB	2.0
2SK3888-01MR	600	9	36	1.0	60	±30	3 to 5	25	TO-220F	1.7
2SK3889-01L, S	600	9	36	1.0	165	±30	3 to 5	25	T-pack	1.6
2SK3501-01	600	12	48	0.75	195	±30	3 to 5	30	TO-220AB	2.0
2SK3502-01MR	600	12	48	0.75	70	±30	3 to 5	30	TO-220F	1.7
2SK3513-01L, S	600	12	48	0.75	195	±30	3 to 5	30	T-pack	1.6
2SK3450-01	600	13	52	0.65	225	±30	3 to 5	34	TO-220AB	2.0
2SK3451-01MR	600	13	52	0.65	80	±30	3 to 5	34	TO-220F	1.7
2SK3753-01R	600	13	52	0.65	95	±30	3 to 5	34	TO-3PF	6.0
2SK3686-01	600	16	64	0.57	270	±30	3 to 5	33	TO-220AB	2.0
2SK3687-01MR	600	16	64	0.57	97	±30	3 to 5	33	TO-220F	1.7
2SK3688-01L, S	600	16	64	0.57	270	±30	3 to 5	33	T-pack	1.6
2SK3689-01	600	16	64	0.57	235	±30	3 to 5	33	TO-247	4.9
2SK3527-01	600	21	84	0.37	335	±30	3 to 5	54	TO-247	4.9
2SK3528-01R	600	21	84	0.37	160	±30	3 to 5	54	TO-3PF	6.0
2SK3681-01	600	43	172	0.16	600	±30	3 to 5	118	TO-247	4.9
2SK3891-01R	700	17	68	0.6	170	±30	3 to 5	46	TO-3PF	6.0
2SK3727-01	900	2.2	8.8	8.0	75	±30	3.5 to 4.5	8.3	TO-220AB	2.0
2SK3728-01MR	900	2.2	8.8	8.0	26	±30	3.5 to 4.5	8	TO-220F	1.7
2SK3981-01	900	2.6	10.4	6.4	90	±30	3 to 5	13	TO-220AB	2.0
2SK3982-01MR	900	2.6	10.4	6.4	32	±30	3 to 5	13	TO-220F	1.7
2SK3983-01L, S	900	2.6	10.4	6.4	90	±30	3 to 5	13	T-pack	1.6
2SK3698-01	900	3.7	14.8	4.3	120	±30	3.5 to 4.5	13	TO-220AB	2.0
2SK3699-01MR	900	3.7	14.8	4.3	43	±30	3.5 to 4.5	13	TO-220F	1.7
2SK3676-01L, S	900	6	24	2.5	195	±30	3 to 5	21.5	T-pack	1.6

*1 R_{DS (on)}: V_{GS}=10V, *2 P_D: T_C=25°C

4 パワー-MOSFET/Power MOSFETs

SuperFAP-Gシリーズ 高速ダイオード内蔵シリーズ SuperFAP-G Built-in FRED series

SuperFAP-G Built-in FRED series			TO-220	TO-220F	TO-247	T-Pack (L)	T-Pack (S)
							
V _{ds} (V)	R _{on} (Ω)	I _d (A)					
500	0.55	13	✓	✓			
600	0.8	11	✓	✓		✓	✓
	0.17	42			✓		

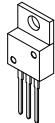
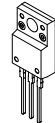

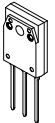
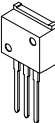


500 – 600V クラス 500 – 600V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) Volts	Q _g Typ. nC	パッケージ Package	質 量 Net mass Grams
2SK3695-01	500	13	52	0.55	195	±30	3 to 5	28	TO-220AB	2.0
2SK3696-01MR	500	13	52	0.55	70	±30	3 to 5	28	TO-220F	1.7
2SK3928-01	600	11	44	0.8	195	±30	3 to 5	30	TO-220AB	2.0
2SK3929-01MR	600	11	44	0.8	70	±30	3 to 5	30	TO-220F	1.7
2SK3930-01L, S	600	11	44	0.8	195	±30	3 to 5	30	T-pack	1.6
2SK3697-01	600	42	168	0.17	600	±30	3 to 5	105	TO-247	4.9

*1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

■ 中耐圧トレンチ シリーズ Trench Power MOSFET

低オン抵抗、高ゲート耐圧 Low-on resistance and high gate capability

Trench Power MOSFET			TO-220	TO-220F	TO-3P (Q)	TO-247	T-Pack(L)	T-Pack(S)	D2-pack
									
Vds (V)	Ron (Ω)	Id (A)							
60	0.0065	70		✓					
		80	✓				✓	✓	✓
		100			✓				
75	0.0079	70		✓					
		0.0085	70					✓	
100	0.0067	80					✓		
		0.0067	100			✓			
		0.0128	80	✓	✓			✓	✓
150	0.0245	65	✓	✓			✓	✓	
200	0.0470	49	✓	✓			✓	✓	

■ 60 – 100V クラス 60 – 100V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	パッケージ Package	質量 Net mass Grams
2SK4068-01	40	70	280	0.006	115	+30/-20	3.0	TO-247	4.9
2SK3273-01MR	60	70	280	0.0065	70	+30/-20	3.0	TO-220F	1.7
2SK3270-01	60	80	320	0.0065	135	+30/-20	3.0	TO-220AB	2.0
2SK3272-01L, S	60	80	320	0.0065	135	+30/-20	3.0	T-pack (L, S)	1.6
2SK3272-01SJ	60	80	320	0.0065	135	+30/-20	3.0	D2-pack	1.6
2SK4047-01S	60	80	320	0.0065	195	+30/-20	3.0	T-pack (S)	1.6
2SK3271-01	60	100	400	0.0065	155	+30/-20	3.0	TO-3P	5.5
2SK3730-01MR	75	70	280	0.0079	70	±20	3.0	TO-220F	1.7
2SK3804-01S	75	70	280	0.0085	162	±20	3.0	T-pack	1.6
● FMC80N10R6	100	80	320	0.0067	180	+30/-20	3.0	T-Pack (S)	1.6
● FMY100N10R6	100	100	400	0.0067	280	+30/-20	3.0	TO-247	6.3

●: 新製品 New Products *1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

■ 100 – 200V クラス 100 – 200V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	パッケージ Package	質量 Net mass Grams
FMP80N10T2	100	80	320	0.0128	270	+30/-20	2 to 4	TO-220AB	2.0
FMA80N10T2	100	80	320	0.0128	95	+30/-20	2 to 4	TO-220F	1.7
FMI80N10T2	100	80	320	0.0128	270	+30/-20	2 to 4	T-pack(L)	1.6
FMC80N10T2	100	80	320	0.0128	270	+30/-20	2 to 4	T-pack(S)	1.6
FMP65N15T2	150	65	260	0.0245	270	+30/-20	2 to 4	TO-220AB	2.0
FMA65N15T2	150	65	260	0.0245	95	+30/-20	2 to 4	TO-220F	1.7
FMI65N15T2	150	65	260	0.0245	270	+30/-20	2 to 4	T-pack(L)	1.6
FMC65N15T2	150	65	260	0.0245	270	+30/-20	2 to 4	T-pack(S)	1.6
FMP49N20T2	200	49	196	0.047	270	+30/-20	2 to 4	TO-220AB	2.0
FMA49N20T2	200	49	196	0.047	95	+30/-20	2 to 4	TO-220F	1.7
FMI49N20T2	200	49	196	0.047	270	+30/-20	2 to 4	T-pack(L)	1.6
FMC49N20T2	200	49	196	0.047	270	+30/-20	2 to 4	T-pack(S)	1.6

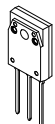

*1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

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The Trench Power MOSFET series products satisfies the quality assurance level of general consumer use. If you intend to use the products for equipment requiring higher reliability, such as equipment for automobiles and medical equipment, please contact Fuji Electric. Do not use the products for equipment requiring strict reliability such as aerospace equipment.

自動車用Super J-MOS™ シリーズ Automotive Super J-MOS™ series

低オン抵抗、低ノイズ、低スイッチング損失 Low-on resistance, low switching noise and low switching loss

Automotive Super J-MOS™			TO-247	T-Pack(S)
				
V _{ds} (V)	R _{on} (Ω)	I _d (A)		
600	0.145	29	✓	✓
	0.082	46	✓	
	0.07	47	✓	
	0.071	52	✓	
	0.062	53	✓	
	0.046	67	✓	
	0.04	68	✓	

600V クラス 600V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. Ohms (Ω)	P _D Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	Q _g Typ. nC	パッケージ Package	質量 Net mass Grams
● FMY47N60S1A	600	47	141	0.07	390	30	3.0±0.5	125	TO-247	6.4
● FMY53N60S1A	600	53	159	0.062	480	30	3.0±0.5	164	TO-247	6.4
● FMY68N60S1A	600	68	204	0.04	545	30	3.0±0.5	203	TO-247	6.4

● : 新製品 New Products

Super J-MOS™ は、富士電機の登録商標です。

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Super J-MOS™ is registered trademarks of Fuji Electric.

Automotive Super J-MOS™ series of products satisfies the quality assurance level of general automobile use (conforms to AEC-Q101).
Do not use the products for equipment requiring strict reliability such as aerospace equipment.

自動車用Super J-MOS™ 高速ダイオード内蔵シリーズ Automotive Super J-MOS™ Built-in FRED series

600V クラス 600V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	Q _g Typ. nC	trr Typ. nsec	パッケージ Package	質量 Net mass Grams
○ FMC29N60S1FDA	600	29	87	0.145	220	30	4.0±1	73	170	T-Pack	1.6
○ FMY29N60S1FDA	600	29	87	0.145	220	30	4.0±1	73	170	TO-247	6.4
○ FMY46N60S1FDA	600	46	138	0.082	390	30	4.0±1	125	210	TO-247	6.4
○ FMY52N60S1FDA	600	52	156	0.071	480	30	4.0±1	164	280	TO-247	6.4
○ FMY67N60S1FDA	600	67	201	0.046	545	30	4.0±1	203	280	TO-247	6.4

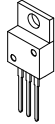
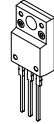

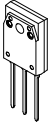
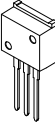


○ : 開発中 Under development *1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

自動車用Automotive Super J-MOS™ Built-in FRED シリーズは、一般車載用向けの品質保証(AEC-Q101準拠)製品であります。
航空宇宙用など高度な信頼性を要求される機器への適用は行わないでください。

The Automotive Super J-MOS™ Built-in FRED series of products satisfies the quality assurance level of general automobile use (conforms to AEC-Q101).
Do not use the products for equipment requiring strict reliability such as aerospace equipment.

自動車用SuperFAP-E^{3S} 低Qgシリーズ Automotive SuperFAP-E^{3S} Low Qg series

低オン抵抗、低ノイズ、低スイッチング損失 Low-on resistance, low switching noise and low switching loss

Trench Power MOSFET			TO-220	TO-220F	TO-3P (Q)	TO-247	T-Pack(L)	T-Pack(S)	D2-pack
V _{ds} (V)	R _{on} (Ω)	I _d (A)							
40	0.006	70				✓			
60	0.0065	70		✓					
		80	✓				✓	✓	✓
	0.0065	100			✓				
75	0.0079	70		✓					
	0.0085	70						✓	
100	0.0067	80					✓		
	0.0128	80	✓	✓			✓	✓	
	0.0067	100				✓			
150	0.0245	65	✓	✓			✓	✓	
200	0.047	49	✓	✓			✓	✓	
300	0.085	47				✓			
	0.072	50				✓			
	0.053	67				✓			
	0.045	72				✓			
600	0.29	22				✓			
	0.28	24				✓			
	0.21	30				✓			
	0.20	31				✓			
	0.17	35				✓			
	0.16	36				✓			

300 - 600V クラス 300 - 600V class

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D *2 Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	Q _g Typ. nC	パッケージ Package	質量 Net mass Grams
● FMY50N30ES	300	50	200	0.072	400	+30/-30	4.2±0.5	97	TO-247	6.4
● FMY72N30ES	300	72	288	0.045	570	+30/-30	4.2±0.5	155	TO-247	6.4
● FMY24N60ES	600	24	96	0.280	400	+30/-30	4.2±0.5	95	TO-247	6.4
● FMY31N60ES	600	31	124	0.200	495	+30/-30	4.2±0.5	125	TO-247	6.4
● FMY36N60ES	600	36	144	0.160	570	+30/-30	4.2±0.5	155	TO-247	6.4

● : 新製品 New Products *1 R_{DS} (on): V_{GS}=10V, *2 P_D: T_C=25°C

自動車用SuperFAP-E^{3S} 低Qgシリーズは、一般車載用向けの品質保証(AEC-Q101準拠)製品であります。
航空宇宙用など高度な信頼性を要求される機器への適用は行わないでください。

The Automotive SuperFAP-E^{3S} Low Qg series of products satisfies the quality assurance level of general automobile use (conforms to AEC-Q101).
Do not use the products for equipment requiring strict reliability such as aerospace equipment.

自動車用SuperFAP-E^{3S} 低Qg 高速ダイオード内蔵シリーズ Automotive SuperFAP-E^{3S} Low Qg Built-in FRED series

低オン抵抗、低ノイズ、低スイッチング損失 Low-on resistance, low switching noise and low switching loss

■ 300 – 600V クラス 300 – 600V class

型式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. * Ohms (Ω)	P _D Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	Q _g Typ. nC	trr Typ. nsec	パッケージ Package	質量 Net mass Grams
● FMY47N30ESF	300	47	188	0.085	400	+30/-30	4.2±1.0	96	130	TO-247	6.4
● FMY67N30ESF	300	67	268	0.053	570	+30/-30	4.2±1.0	155	150	TO-247	6.4
● FMY22N60ESF	600	22	88	0.290	400	+30/-30	4.2±1.0	95	150	TO-247	6.4
● FMY30N60ESF	600	30	120	0.210	495	+30/-30	4.2±1.0	125	160	TO-247	6.4
● FMY35N60ESF	600	35	140	0.170	570	+30/-30	4.2±1.0	155	160	TO-247	6.4

● : 新製品 New Products * R_{DS} (on): V_{GS}=10V

自動車用SuperFAP-E^{3S} 低Qg 高速ダイオード内蔵シリーズは、一般車載向けの品質保証(AEC-Q101準拠)製品であります。
航空宇宙用など高度な信頼性を要求される機器への適用は行わないでください。

Automotive SuperFAP-E^{3S} Low Qg Built-in FRED series of products satisfies the quality assurance level of general automobile use (conforms to AEC-Q101).
Do not use the products for equipment requiring strict reliability such as aerospace equipment.

自動車用トレンチMOSFET Automotive Trench Power MOSFET

■ 40 – 100V クラス 40 – 100V class

型式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. * Ohms (Ω)	P _D Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	パッケージ Package	質量 Net mass Grams
2SK4068-01	40	70	280	0.006	115	+30/-20	3.0	TO-247	4.9
2SK3273-01MR	60	70	280	0.0065	70	+30/-20	3.0	TO-220F	1.7
2SK3270-01	60	80	320	0.0065	135	+30/-20	3.0	TO-220AB	2.0
2SK3272-01L, S	60	80	320	0.0065	135	+30/-20	3.0	T-pack	1.6
2SK3272-01SJ	60	80	320	0.0065	135	+30/-20	3.0	D2-pack	1.6
2SK4047-01S	60	80	320	0.0065	195	+30/-20	3.0	T-pack	1.6
● FMY100N06T ※1	60	100	400	0.0065	135	+30/-20	3.0	TO-247	6.3
2SK3271-01	60	100	400	0.0065	155	+30/-20	3.0	TO-3P	5.5
2SK3730-01MR	75	70	280	0.0079	70	±20	3.0	TO-220F	1.7
2SK3804-01S	75	70	280	0.0085	135	±20	3.0	T-pack	1.6
● FMC80N10R6	100	80	320	0.0067	324	+30/-20	3.0	T-Pack	1.6
● FMY100N10R6	100	100	400	0.0067	280	+30/-20	3.0	TO-247	6.3

● : 新製品 New Products * R_{DS} (on): V_{GS}=10V

※1 FMY100N06Tは一般車載向けの品質保証(AEC-Q101準拠)製品であります。
FMY100N06T satisfies the quality assurance level of general automobile use (conforms to AEC-Q101).

航空宇宙用など高度な信頼性を要求される機器への適用は行わないでください。
Do not use the products for equipment requiring strict reliability such as aerospace equipment.

■ 自動車用高機能パワー-MOSFET Automotive Intelligent Power MOSFET

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. *1 Ohms (Ω)	P _D Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	パッケージ Package	質 量 Net mass Grams
F5018	40	8	-	0.14	15	-	-	K-pack	0.6
F5019	40	12	-	0.14	30	-	-	T-pack	1.6
F5020	40	3	-	0.40	10	-	-	K-pack	0.6
F5033	40	1	-	0.60	1.5	-	-	SOP-8*2	0.2
F5041	40	1	-	0.60	1.5	-	-	SOP-8*2	0.2
F5042	40	8	-	0.14	15	-	-	K-pack	0.6
F5043	40	12	-	0.14	30	-	-	T-pack	1.6
F5048	80	15	27	0.125	43	-	-	T-pack	1.6
F5055	40	5.9	-	0.14	7.8	-	-	SSOP-20*2	0.3

*1 R_{DS} (on): V_{GS}=5V *2 2ch入り Contains 2 channels

■ 自動車用 IPS シリーズ (インテリジェントパワースイッチ) Automotive IPS series (Intelligent Power Switches)

自己保護機能・診断機能内蔵 Self protection and safety check

型 式 Device type	V _{DSS} Volts	I _D Amps.	I _D (pulse) Amps.	R _{DS} (on) Max. Ohms (Ω)	P _D Watts	V _{GS} Volts	V _{GS} (th) typ. Volts	パッケージ Package	質 量 Net mass Grams
F5044H	50	2.5	-	0.12*1	1.5	-	-	SOP-8	0.2
F5045P	50	1	-	0.60*1	1.5	-	-	SOP-8	0.2
F5062H	35	50	-	0.008*1	114	-	-	PSOP-12	0.4
F5063L	40	1.9	-	0.14*2	1.75	-	-	SOP-8*3	0.2

*1 R_{DS} (on): V_{CC}=12V *2 R_{DS} (on): V_{IN}=5V *3 2ch入り Contains 2 channels

SBD, LLD の特長 Features of the SBD, LLD

超低IR-SBD (Schottky-Barrier Diode) Ultra Low-IR SBD

■特長 Features

- 接合部温度 (Tj) 175°C保証
 - ・従来品に対し高温動作可能
- 従来品に対し VF は全等で、IR を 1/10 以下に低減
 - ・熱暴走のリスクを低減。高温時の高信頼性を確保
- 従来品に対し VF は 10% 低減し、IR も 1/10 以下に低減
 - ・LLD からの置換え、更に低い耐圧の SBD を選択可能
- Guaranteed Tj=175°C
 - ・ It can operate at a high temperature.
- VF is same level and IR is tens of one lower than existing type.
 - ・ It reduce thermal runaway risk. And provide high reliability at a high temperature.
- VF is 10% lower and IR is tens of one lower than existing type.
 - ・ It make us possible to replace from LLD Or select more lower voltage SBD

LLD (Low Loss Diode) Super LLD series for PFC circuit

■特長 Features

Super LLD-3 (電流連続モード PFC 用)

- 従来品に対し VF-trr トレードオフラインを改善
- 従来品に対し高速化と低 VF 化を実現。
MOSFET とダイオードの温度低減、低損失化が可能。

Super LLD-3 for CCM-PFC

- Improve VF-trr trade off compared with existing model.
- Realize acceleration and low VF compared with existing model.
And reduced temperature and power loss of MOSFET and Diode.

Super LLD-2 (臨界モード PFC 用)

- 低 VF 特性による低損失化
- ソフトリカバリーによる低ノイズ化

Super LLD-2 for DCM-PFC

- Achieved low power loss by low VF
- Achieved low noise by soft recovery

■型式の見方 Part numbers

FDRW50C60L (example)

F		DR		W		50	C		60		L	
社名 Company code	機種コード Device code	パッケージコード Package code		定格電流 Current		極性 Polarity	定格電圧 Voltage		製品シリーズ Series			
Fuji	DR	FWD	P	TO-220	×1	S	Single	60	600V	L	Ultra Fast Recovery	
			W	TO-247		C	Cathode Common	120	1200V		Sort/Fast Recovery	
										J	Sort/Fast Recovery	

■型式の見方 Part numbers

YA875C10R (example)

YA		87		5		C		10				R		
パッケージコード Package code		シリーズ Series		定格電流 Current		極性 Polarity		定格電圧 Voltage				付加コード Additional code		
KP	K-Pack (L)	8x	SBD	1	5A	S	Single	SBD	02	20V	LLD	2	200V	R or RR
KS	K-Pack (S)	9x	LLD	2	10A	C	Cathode		03	30V		3	300V	
MS	TFP			3	15A		Common		04	40V		4	400V	
PA	TO-3P			4	15A				06	60V		6	600V	
PG	TO-3PF			5	20A				08	80V		8	800V	
PH	TO-247			6	30A				09	90V		10	1000V	
TP	T-Pack (L)			8	30A				10	100V		12	1200V	
TS	T-Pack (S)			9	40A				12	120V		15	1500V	
YA	TO-220			0	40A				15	150V				
YG	TO-220F								20	200V				

■型式の見方 Part numbers

ESAD92M02R (example)

ESA		D		92		M		02				R			
チップ構成 Chip		定格電流 Current		シリーズ Series		パッケージコード Package code		電圧定格 Voltage				付加コード Additional code			
ESA	ツインチップ	リード	ERA	≤1A	8x	SBD	無し	フィン	SBD	004	40V	LLD	02	200V	R or RR
ER	シングルチップ		ERB	≤2A	9x	LLD	M	フルモールド		006	60V		03	300V	
			ERC	≤3A						009	90V				
			ERD	-											
			ERC	≤5A											
		TOPKG	ESAB	5A-10A											
			ESAC	10A-20A											
			ESAD	20A-30A											

5 整流ダイオード/Rectifier Diodes

■ ショットキーバリアダイオード Schottky-Barrier Diodes(SBD)

Schottky-Barrier Diodes(SBD)					TO-220F	TO-3P (Q)	TO-3PF	T-Pack(L)	T-Pack(S)	K-Pack(L)	K-Pack(S)	TFP
結線	V _{RRM} (V)	I _O (A)	V _F (V)	I _R (mA)								
シングル	40	5	0.55	5	✓						✓	
	45	10	0.60	2	✓							
	60	5	0.59	5	✓							
		15	0.63	20	✓							
デュアル	20	7	0.39	10						✓	✓	
	30	5	0.47	5							✓	
	40	5	0.55	5	✓			✓	✓		✓	
		10	0.55	5	✓							
		20	0.6	15	✓				✓			
		30	0.53	8								✓
	60	5	0.58	5	✓							
		10	0.58	5	✓							
		15	0.58	5	✓							
		20	0.58	15	✓							
		30	0.58	3								✓
	90	5	0.9	5							✓	
	100	5	0.8	0.7	✓							
		10	0.8	1.2	✓							
		20	0.8	2.5	✓							
		30	0.8	20	✓							

シングル 1 in one-package

型式 Device type	絶対最大定格 Maximum rating			I _{FSM} *2 Amps.	接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(T _a =25°C) Characteristics			パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.				V _{FM} Max. Volts	I _{RRM} *3 Max.mA	R _{th(j-c)} °C/W		
KS826S04	40	5.0 (T _c =110°C)		80	-40 to +150	0.55 (I _F =5.0A)	5	10	K-pack(S)	0.6
YG811S04R	40	5.0 (T _c =122°C)		120	-40 to +150	0.55 (I _F =5.0A)	5	5.0	TO-220F	1.7
YG812S04R	45	10 (T _c =124°C)		120	-40 to +150	0.6 (I _F =10A)	2	2.5	TO-220F	1.7
YG811S06R	60	5.0 (T _c =127°C)		80	-40 to +150	0.59 (I _F =5.0A)	5	5.0	TO-220F	1.7
YG804S06R	60	15 (T _c =99°C)		120	-40 to +150	0.63 (I _F =15A)	20	2.2	TO-220F	1.7

() 条件

*1 50Hz方形波 duty=1/2

*2 正弦波 10ms.

*3 V_R=V_{RRM}

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine wave, 10ms

*3 V_R=V_{RRM}

記号 Letter symbols

V_{RRM} ピーク繰返し逆電圧
V_{RSM} ピーク非繰返し逆電圧
I_O 平均出力電流
I_{FSM} サージ電流
T_j 接合温度
T_a 周囲温度
T_c ケース温度

Repetitive peak reverse voltage
Non-repetitive peak reverse voltage
Average output current
Surge current
Junction temperature
Ambient temperature
Case temperature

T_{stg} 保存温度
V_{FM} 順電圧
I_{RRM} 逆電流
t_{rr} 逆回復時間
R_{th(j-c)} 熱抵抗 (接合ケース間)
T_l リード温度
I_{F(AV)} 平均順電流

Storage temperature
Forward voltage
Reverse current
Reverse recovery time
Thermal resistance (Junction to case)
Lead temperature
Average forward current

■ ショットキーバリアダイオード Schottky-Barrier Diodes(SBD)

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating Tj and Tstg °C	電気的特性(Ta=25°C) Characteristics			パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.	I _{FSM} *2 Amps.		V _{FM} *3 Max. Volts	I _{RRM} *4 Max.mA	R _{th(j-c)} °C/W		
KP883C02	20	7.0 (Tc=89°C)	60	-40 to +125	0.39 (I _F =2.5A)	10	10.0	K-Pack(L)	0.6
KS883C02	20	7.0 (Tc=89°C)	60	-40 to +125	0.39 (I _F =2.5A)	10	10.0	K-pack(S)	0.6
KS823C03	30	5.0 (Tc=117°C)	60	-40 to +150	0.47 (I _F =2.5A)	5	10.0	K-pack(S)	0.6
KS823C04	40	5.0 (Tc=107°C)	60	-40 to +150	0.55 (I _F =2.5A)	5	10.0	K-pack(S)	0.6
YG801C04R	40	5.0 (Tc=125°C)	100	-40 to +150	0.55 (I _F =2.0A)	5	5.0	TO-220F	1.7
YG802C04R	40	10 (Tc=110°C)	120	-40 to +150	0.55 (I _F =4.0A)	5	3.5	TO-220F	1.7
YG805C04R	40	20 (Tc=100°C)	120	-40 to +150	0.6 (I _F =10A)	15	2.5	TO-220F	1.7
YG838C04R	40	30 (Tc=85°C)	180	-40 to +150	0.53 (I _F =12.5A)	8	2.0	TO-220F	1.7
MS838C04	40	30 (Tc=111°C)	180	-40 to +150	0.53 (I _F =12.5A)	8	1.2	TFP	0.8
YG801C06R	60	5.0 (Tc=125°C)	60	-40 to +150	0.58 (I _F =2.0A)	5	5.0	TO-220F	1.7
YG802C06R	60	10 (Tc=118°C)	80	-40 to +150	0.58 (I _F =4.0A)	5	3.5	TO-220F	1.7
YG803C06R	60	15 (Tc=94°C)	100	-40 to +150	0.58 (I _F =6.0A)	5	3.0	TO-220F	1.7
YG805C06R	60	20 (Tc=108°C)	80	-40 to +150	0.58 (I _F =8.0A)	15	2.5	TO-220F	1.7
MS808C06	60	30 (Tc=118°C)	150	-40 to +150	0.58 (I _F =12.5A)	3	1.2	TFP	0.8
KS823C09	90	5.0 (Tc=100°C)	60	-40 to +150	0.9 (I _F =2.5A)	5	10.0	K-pack(S)	0.6
YG801C10R	100	5.0 (Tc=117°C)	60	-40 to +150	0.8 (I _F =1.5A)	0.7	5.0	TO-220F	1.7
YG802C10R	100	10 (Tc=102°C)	80	-40 to +150	0.8 (I _F =3.0A)	1.2	3.5	TO-220F	1.7
YG805C10R	100	20 (Tc=91°C)	100	-40 to +150	0.8 (I _F =5.0A)	2.5	2.5	TO-220F	1.7
YG808C10R	100	30 (Tc=80°C)	180	-40 to +150	0.8 (I _F =10A)	20	2.0	TO-220F	1.7

() 条件

*1 50Hz方形波 duty=1/2 (センタータップ平均出力電流)

*2 正弦波 10ms. 1チップあたり *3 1チップあたり

*4 V_R=V_{RRM} 1チップあたり

() Conditions

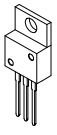
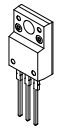
*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine wave, 10ms per element *3 per element

*4 V_R=V_{RRM} per element

5 整流ダイオード/Rectifier Diodes

■ 超低 IR ショットキーバリアダイオード Ultra Low IR Schottky-Barrier Diodes

Ultra Low IR Schottky-Barrier Diodes					TO-220	TO-220F
結線	V _{RRM} (V)	I _o (A)	V _F (V)	I _R (mA)		
デュアル	100	10	0.82	0.015	✓	✓
		20	0.86	0.02	✓	✓
		30	0.86	0.03	✓	✓
	120	10	0.84	0.015	✓	✓
		20	0.88	0.02	✓	✓
		30	0.88	0.03	✓	✓
	150	10	0.86	0.015	✓	✓
		20	0.89	0.02	✓	✓
		30	0.89	0.03	✓	✓
	200	10	0.89	0.015	✓	✓
		20	0.93	0.02	✓	✓
		30	0.93	0.03	✓	✓

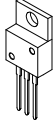
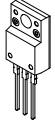
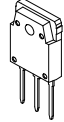
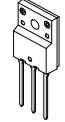
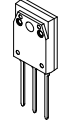
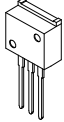


デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			I _{FSM} *2 Amps.	接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics			パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _o *1 Amps.				V _{FM} *3 Max. Volts	I _{RRM} *4 Max.mA	R _{th} (j-c) °C/W		
YG872C10R	100	10 (Tc=146°C)		125	-40 to +175	0.82	0.015	3.5	TO-220F	1.7
YA872C10R	100	10 (Tc=158°C)		125	-40 to +175	0.82	0.015	2.0	TO-220AB	2.0
YG875C10R	100	20 (Tc=131°C)		145	-40 to +175	0.86	0.020	2.5	TO-220F	1.7
YA875C10R	100	20 (Tc=144°C)		145	-40 to +175	0.86	0.020	1.75	TO-220AB	2.0
YG878C10R	100	30 (Tc=122°C)		160	-40 to +175	0.86	0.030	2.0	TO-220F	1.7
YA878C10R	100	30 (Tc=142°C)		160	-40 to +175	0.86	0.030	1.25	TO-220AB	2.0
YG872C12R	120	10 (Tc=143°C)		125	-40 to +175	0.84	0.015	3.5	TO-220F	1.7
YA872C12R	120	10 (Tc=158°C)		125	-40 to +175	0.84	0.015	2.0	TO-220AB	2.0
YG875C12R	120	20 (Tc=127°C)		145	-40 to +175	0.88	0.020	2.5	TO-220F	1.7
YA875C12R	120	20 (Tc=144°C)		145	-40 to +175	0.88	0.020	1.75	TO-220AB	2.0
YG878C12R	120	30 (Tc=116°C)		160	-40 to +175	0.88	0.030	2.0	TO-220F	1.7
YA878C12R	120	30 (Tc=141°C)		160	-40 to +175	0.88	0.030	1.25	TO-220AB	2.0
YG872C15R	150	10 (Tc=144°C)		125	-40 to +175	0.86	0.015	3.5	TO-220F	1.7
YA872C15R	150	10 (Tc=157°C)		125	-40 to +175	0.86	0.015	2.0	TO-220AB	2.0
YG875C15R	150	20 (Tc=130°C)		145	-40 to +175	0.89	0.020	2.5	TO-220F	1.7
YA875C15R	150	20 (Tc=143°C)		145	-40 to +175	0.89	0.020	1.75	TO-220AB	2.0
YG878C15R	150	30 (Tc=120°C)		160	-40 to +175	0.89	0.030	2.0	TO-220F	1.7
YA878C15R	150	30 (Tc=140°C)		160	-40 to +175	0.89	0.030	1.25	TO-220AB	2.0
YG872C20R	200	10 (Tc=143°C)		125	-40 to +175	0.89	0.015	3.5	TO-220F	1.7
YA872C20R	200	10 (Tc=157°C)		125	-40 to +175	0.89	0.015	2.0	TO-220AB	2.0
YG875C20R	200	20 (Tc=127°C)		145	-40 to +175	0.93	0.020	2.5	TO-220F	1.7
YA875C20R	200	20 (Tc=141°C)		145	-40 to +175	0.93	0.020	1.75	TO-220AB	2.0
YG878C20R	200	30 (Tc=116°C)		160	-40 to +175	0.93	0.030	2.0	TO-220F	1.7
YA878C20R	200	30 (Tc=138°C)		160	-40 to +175	0.93	0.030	1.25	TO-220AB	2.0

() 条件
 *1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流)
 *2 正弦波 10ms. 1チップあたり *3 I_F=0.5I_o 1チップあたり
 *4 V_R=V_{RRM} 1チップあたり

() Conditions
 *1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)
 *2 Sine wave, 10ms per element *3 I_F=0.5I_o per element
 *4 V_R=V_{RRM} per element

■ 低 IR ショットキーバリアダイオード Low IR Schottky-Barrier Diodes

Low IR Schottky-Barrier Diodes					TO-220	TO-220F	TO-3P (Q)	TO-3PF	TO-247	T-Pack(L)	T-Pack(S)	TFP
結線	V _{RRM} (V)	I _o (A)	V _F (V)	I _R (mA)								
シングル	120	5	0.88	0.15		✓						
	150	5	0.9	0.15		✓						
デュアル	45	20	0.63	0.175	✓	✓					✓	✓
		30	0.63	0.2	✓	✓					✓	✓
	60	10	0.68	0.15	✓	✓					✓	
		20	0.74	0.175	✓	✓						
		30	0.74	0.2	✓	✓					✓	
	80	40	0.7	0.2	✓	✓				✓		
		10	0.76	0.15	✓	✓					✓	✓
		20	0.76	0.175	✓	✓					✓	✓
	100	30	0.76	0.2	✓	✓					✓	
		40	0.71	0.2	✓	✓				✓		
		10	0.86	0.15	✓	✓					✓	
		20	0.86	0.175	✓	✓					✓	✓
	120	30	0.86	0.2	✓	✓	✓			✓	✓	✓
		40	0.82	0.2	✓	✓				✓	✓	✓
		10	0.88	0.15	✓	✓				✓	✓	✓
		20	0.88	0.15	✓	✓			✓	✓	✓	✓
150	30	0.88	0.2					✓		✓	✓	
	30	1.01	0.2							✓	✓	
	40	0.95	0.2	✓	✓							
	10	0.9	0.15	✓	✓				✓	✓	✓	
150	20	0.9	0.15	✓	✓		✓	✓	✓	✓	✓	
	30	0.9	0.2	✓	✓	✓		✓	✓	✓	✓	
	40	0.97	0.2	✓	✓				✓	✓	✓	
	30	0.9	0.2			✓		✓	✓	✓	✓	

シングル 1 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating		電気的特性(Ta=25°C) Characteristics			パッケージ Package	質量 Net mass
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.	T _j and T _{stg} °C	V _{FM} *3 Max. Volts	I _{RRM} *4 Max. mA	R _{th(j-c)} °C/W		Grams	
YG861S12R	120	5 (Tc=104°C)	75	-40 to +150	0.88	0.15	5.0	TO-220F	1.7	
YG861S15R	150	5 (Tc=94°C)	75	-40 to +150	0.90	0.15	5.0	TO-220F	1.7	

() 条件

*1 50Hz 方形波 duty=1/2

*2 正弦波 10ms. *3 I_F=I_o

*4 V_R=V_{RRM}

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine wave, 10ms *3 I_F=I_o

*4 V_R=V_{RRM}



■ 低 IR ショットキーバリアダイオード Low IR Schottky-Barrier Diodes

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating Tj and Tstg °C	電気的特性(Ta=25°C) Characteristics			パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.	I _{FSM} *2 Amps.		V _{FM} *3 Max. Volts	I _{RRM} *4 Max.mA	Rth(j-c) °C/W		
YG865C04R	45	20 (Tc=115°C)	145	-40 to +150	0.63	0.175	2.5	TO-220F	1.7
YA865C04R	45	20 (Tc=126°C)	145	-40 to +150	0.63	0.175	1.75	TO-220AB	2.0
TS865C04R	45	20 (Tc=126°C)	145	-40 to +150	0.63	0.175	1.75	T-pack(S)	1.6
MS865C04	45	20 (Tc=125°C)	145	-40 to +150	0.63	0.175	1.75	TFP	0.8
YG868C04R	45	30 (Tc=105°C)	160	-40 to +150	0.63	0.20	2.0	TO-220F	1.7
YA868C04R	45	30 (Tc=122°C)	160	-40 to +150	0.63	0.20	1.25	TO-220AB	2.0
TS868C04R	45	30 (Tc=122°C)	160	-40 to +150	0.63	0.20	1.25	T-pack(S)	1.6
MS868C04	45	30 (Tc=122°C)	160	-40 to +150	0.63	0.20	1.25	TFP	0.8
YG862C06R	60	10 (Tc=124°C)	125	-40 to +150	0.68	0.15	3.5	TO-220F	1.7
YA862C06R	60	10 (Tc=136°C)	125	-40 to +150	0.68	0.15	2.0	TO-220AB	2.0
TS862C06R	60	10 (Tc=136°C)	125	-40 to +150	0.68	0.15	2.0	T-pack(S)	1.6
YG865C06R	60	20 (Tc=109°C)	145	-40 to +150	0.74	0.175	2.5	TO-220F	1.7
YA865C06R	60	20 (Tc=122°C)	145	-40 to +150	0.74	0.175	1.75	TO-220AB	2.0
TS865C06R	60	20 (Tc=122°C)	145	-40 to +150	0.74	0.175	1.75	T-pack(S)	1.6
YG868C06R	60	30 (Tc=101°C)	160	-40 to +150	0.74	0.20	2.0	TO-220F	1.7
YA868C06R	60	30 (Tc=119°C)	160	-40 to +150	0.74	0.20	1.25	TO-220AB	2.0
TS868C06R	60	30 (Tc=119°C)	160	-40 to +150	0.74	0.20	1.25	T-pack(S)	1.6
YG869C06R	60	40 (Tc=105°C)	190	-40 to +150	0.70	0.20	1.2	TO-220F	1.7
YA869C06R	60	40 (Tc=114°C)	190	-40 to +150	0.70	0.20	1.0	TO-220AB	2.0
TP869C06R	60	40 (Tc=114°C)	190	-40 to +150	0.70	0.20	1.0	T-Pack(L)	1.6
YG862C08R	80	10 (Tc=109°C)	125	-40 to +150	0.76	0.15	3.5	TO-220F	1.7
YA862C08R	80	10 (Tc=126°C)	125	-40 to +150	0.76	0.15	2.0	TO-220AB	2.0
TS862C08R	80	10 (Tc=126°C)	125	-40 to +150	0.76	0.15	2.0	T-pack(S)	1.6
MS862C08	80	10 (Tc=115°C)	125	-40 to +150	0.76	0.15	3.0	TFP	0.8
YG865C08R	80	20 (Tc=89°C)	145	-40 to +150	0.76	0.175	2.5	TO-220F	1.7
YA865C08R	80	20 (Tc=107°C)	145	-40 to +150	0.76	0.175	1.75	TO-220AB	2.0
TS865C08R	80	20 (Tc=107°C)	145	-40 to +150	0.76	0.175	1.75	T-pack(S)	1.6
MS865C08	80	20 (Tc=108°C)	145	-40 to +150	0.76	0.175	1.75	TFP	0.8
YG868C08R	80	30 (Tc=72°C)	160	-40 to +150	0.76	0.20	2.0	TO-220F	1.7
YA868C08R	80	30 (Tc=105°C)	160	-40 to +150	0.76	0.20	1.25	TO-220AB	2.0
TS868C08R	80	30 (Tc=105°C)	160	-40 to +150	0.76	0.20	1.25	T-pack(S)	1.6
YG869C08R	80	40 (Tc=86°C)	190	-40 to +150	0.71	0.20	1.2	TO-220F	1.7
YA869C08R	80	40 (Tc=98°C)	190	-40 to +150	0.71	0.20	1.0	TO-220AB	2.0
TP869C08R	80	40 (Tc=98°C)	190	-40 to +150	0.71	0.20	1.0	T-Pack(L)	1.6

() 条件

*1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流)
*2 正弦波 10ms. 1チップあたり *3 I_F=0.5I_O 1チップあたり
*4 V_R=V_{RRM} 1チップあたり

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)
*2 Sine wave, 10ms per element *3 I_F=0.5I_O per element
*4 V_R=V_{RRM} per element

■ 低 IR ショットキーバリアダイオード Low IR Schottky-Barrier Diodes

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating Tj and Tstg °C	電気的特性(Ta=25°C) Characteristics			パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.		V _{FM} *3 Max. Volts	I _{RRM} *4 Max.mA	Rth (j-c) °C/W		
YG862C10R	100	10 (Tc=118°C)	125	-40 to +150	0.86	0.15	3.5	TO-220F	1.7
YA862C10R	100	10 (Tc=132°C)	125	-40 to +150	0.86	0.15	2.0	TO-220AB	2.0
TS862C10R	100	10 (Tc=132°C)	125	-40 to +150	0.86	0.15	2.0	T-pack(S)	1.6
YG865C10R	100	20 (Tc=103°C)	145	-40 to +150	0.86	0.175	2.5	TO-220F	1.7
YA865C10R	100	20 (Tc=117°C)	145	-40 to +150	0.86	0.175	1.75	TO-220AB	2.0
TS865C10R	100	20 (Tc=117°C)	145	-40 to +150	0.86	0.175	1.75	T-pack(S)	1.6
MS865C10	100	20 (Tc=117°C)	145	-40 to +150	0.86	0.175	1.75	TFP	0.8
YG868C10R	100	30 (Tc=91°C)	160	-40 to +150	0.86	0.20	2.0	TO-220F	1.7
YA868C10R	100	30 (Tc=113°C)	160	-40 to +150	0.86	0.20	1.25	TO-220AB	2.0
TS868C10R	100	30 (Tc=113°C)	160	-40 to +150	0.86	0.20	1.25	T-pack(S)	1.6
TP868C10R	100	30 (Tc=113°C)	160	-40 to +150	0.86	0.20	1.25	T-Pack(L)	1.6
MS868C10	100	30 (Tc=114°C)	160	-40 to +150	0.86	0.20	1.2	TFP	0.8
PA868C10R	100	30 (Tc=107°C)	160	-40 to +150	0.86	0.20	1.5	TO-3P(Q)	5.1
YG869C10R	100	40 (Tc=94°C)	190	-40 to +150	0.82	0.20	1.2	TO-220F	1.7
YA869C10R	100	40 (Tc=105°C)	190	-40 to +150	0.82	0.20	1.0	TO-220AB	2.0
TP869C10R	100	40 (Tc=105°C)	190	-40 to +150	0.82	0.20	1.0	T-Pack(L)	1.6
YG862C12R	120	10 (Tc=122°C)	75	-40 to +150	0.88	0.15	3.00	TO-220F	1.7
YA862C12R	120	10 (Tc=137°C)	75	-40 to +150	0.88	0.15	1.20	TO-220AB	2.0
TP862C12R	120	10 (Tc=137°C)	75	-40 to +150	0.88	0.15	1.50	T-Pack(L)	1.6
TS862C12R	120	10 (Tc=137°C)	75	-40 to +150	0.88	0.15	1.50	T-pack(S)	1.6
YG865C12R	120	20 (Tc=116°C)	150	-40 to +150	0.88	0.15	1.75	TO-220F	1.7
YA865C12R	120	20 (Tc=126°C)	150	-40 to +150	0.88	0.15	1.25	TO-220AB	2.0
PH865C12	120	20 (Tc=126°C)	150	-40 to +150	0.88	0.15	1.50	TO-247	4.9
TP865C12R	120	20 (Tc=126°C)	150	-40 to +150	0.88	0.15	1.25	T-Pack(L)	1.6
TS865C12R	120	20 (Tc=126°C)	150	-40 to +150	0.88	0.15	1.25	T-pack(S)	1.6
MS865C12	120	20 (Tc=126°C)	150	-40 to +150	0.88	0.15	1.25	TFP	0.8
YG868C12R	120	30 (Tc=116°C)	190	-40 to +150	0.88	0.20	1.20	TO-220F	1.7
YA868C12R	120	30 (Tc=122°C)	190	-40 to +150	0.88	0.20	1.00	TO-220AB	2.0
PH868C12	120	30 (Tc=122°C)	190	-40 to +150	0.88	0.20	1.20	TO-247	4.9
TS868C12R	120	30 (Tc=122°C)	190	-40 to +150	0.88	0.20	1.00	T-pack(S)	1.6
MS868C12	120	30 (Tc=115°C)	190	-40 to +150	0.88	0.20	1.20	TFP	0.8
YG869C12R	120	40 (Tc=95°C)	190	-40 to +150	0.95	0.20	1.20	TO-220F	1.7
YA869C12R	120	40 (Tc=104°C)	190	-40 to +150	0.95	0.20	1.00	TO-220AB	2.0

() 条件

*1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流)
 *2 正弦波 10ms. 1チップあたり *3 I_F=0.5I_o 1チップあたり
 *4 V_R=V_{RRM} 1チップあたり

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)
 *2 Sine wave, 10ms per element *3 I_F=0.5I_o per element
 *4 V_R=V_{RRM} per element

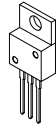
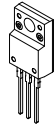
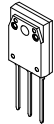
■ 低 IR ショットキーバリアダイオード Low IR Schottky-Barrier Diodes

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating Tj and Tstg °C	電気的特性(Ta=25°C) Characteristics			パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.	I _{FSM} *2 Amps.		V _{FM} *3 Max. Volts	I _{RRM} *4 Max.mA	Rth(j-c) °C/W		
YG862C15R	150	10 (Tc=117°C)	75	-40 to +150	0.90	0.15	3.00	TO-220F	1.7
YA862C15R	150	10 (Tc=134°C)	75	-40 to +150	0.90	0.15	1.50	TO-220AB	2.0
TP862C15R	150	10 (Tc=134°C)	75	-40 to +150	0.90	0.15	1.50	T-Pack(L)	1.6
TS862C15R	150	10 (Tc=134°C)	75	-40 to +150	0.90	0.15	1.50	T-pack(S)	1.6
YG865C15R	150	20 (Tc=101°C)	150	-40 to +150	0.90	0.15	1.75	TO-220F	1.7
PH865C15	150	20 (Tc=109°C)	150	-40 to +150	0.90	0.15	1.50	TO-247	4.9
PG865C15R	150	20 (Tc=80°C)	150	-40 to +150	0.90	0.15	2.50	TO-3PF	6.0
YA865C15R	150	20 (Tc=115°C)	150	-40 to +150	0.90	0.15	1.25	TO-220AB	2.0
TP865C15R	150	20 (Tc=115°C)	150	-40 to +150	0.90	0.15	1.25	T-Pack(L)	1.6
TS865C15R	150	20 (Tc=115°C)	150	-40 to +150	0.90	0.15	1.25	T-pack(S)	1.6
MS865C15	150	20 (Tc=115°C)	150	-40 to +150	0.90	0.15	1.25	TFP	0.8
YG868C15R	150	30 (Tc=113°C)	190	-40 to +150	0.90	0.20	1.20	TO-220F	1.7
YA868C15R	150	30 (Tc=119°C)	190	-40 to +150	0.90	0.20	1.00	TO-220AB	2.0
TS868C15R	150	30 (Tc=119°C)	190	-40 to +150	0.90	0.20	1.00	T-pack(S)	1.6
MS868C15	150	30 (Tc=113°C)	190	-40 to +150	0.90	0.20	1.20	TFP	0.8
PA868C15R	150	30 (Tc=129°C)	190	-40 to +150	0.90	0.20	1.20	TO-3P	5.5
PH868C15	150	30 (Tc=129°C)	190	-40 to +150	0.90	0.20	1.20	TO-247	4.9
YG869C15R	150	40 (Tc=90°C)	190	-40 to +150	0.97	0.20	1.20	TO-220F	1.7
YA869C15R	150	40 (Tc=100°C)	190	-40 to +150	0.97	0.20	1.00	TO-220AB	2.0

() 条件 () Conditions
 *1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流) *1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)
 *2 正弦波 10ms. 1チップあたり *3 I_F=0.5I_O 1チップあたり *2 Sine wave, 10ms per element *3 I_F=0.5I_O per element
 *4 V_R=V_{RRM} 1チップあたり *4 V_R=V_{RRM} per element

■ スーパー LLD 2 (臨界モード PFC 回路用) Super LLD 2 (Critical mode PFC)

Super LLD 2 (Critical mode PFC)						TO-220	TO-220F	TO-247
								
結線	V _{RRM} (V)	I _o (A)	V _F (V)	I _R (μA)	T _{rr} (μsec)			
シングル	600	8	1.55	10	0.05	✓	✓	
		10	1.55	10	0.05	✓	✓	
	800	5	2.2	10	0.05		✓	
デュアル	600	10	1.55	10	0.05	✓	✓	✓

シングル 1 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.		V _{FM} Max. Volts	I _{RRM} *3 Max. μA	t _{rr} *4 μ sec.	R _{th(j-c)} °C/W		
YA971S6R	600	8 (Tc=116°C)	70	-40 to +150	1.55 (I _F =8A)	10	0.05	2.5	TO-220AB	2.0
YG971S6R	600	8 (Tc=89°C)	70	-40 to +150	1.55 (I _F =8A)	10	0.05	4.5	TO-220F	1.7
YA972S6R	600	10 (Tc=115°C)	100	-40 to +150	1.55 (I _F =10A)	10	0.05	2.0	TO-220AB	2.0
YG972S6R	600	10 (Tc=89°C)	100	-40 to +150	1.55 (I _F =10A)	10	0.05	3.5	TO-220F	1.7
YG971S8R	800	5 (Tc=93°C)	60	-40 to +150	2.2 (I _F =5A)	10	0.05	4.5	TO-220F	1.7

() 条件

*1 50Hz 方形波 duty=1/2
*2 正弦波 10ms. *3 V_R=V_{RRM}
*4 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

() Conditions

*1 50Hz Square wave duty=1/2
*2 Sine wave, 10ms *3 V_R=V_{RRM}
*4 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.		V _{FM} Max. Volts	I _{RRM} *3 Max. μA	t _{rr} *4 μ sec.	R _{th(j-c)} °C/W		
YA975C6R	600	20 (Tc=106°C)	100	-40 to +150	1.55 (I _F =10A)	10	0.05	1.25	TO-220AB	2.0
YG975C6R	600	20 (Tc=89°C)	100	-40 to +150	1.55 (I _F =10A)	10	0.05	1.75	TO-220F	1.7
PH975C6	600	20 (Tc=97°C)	100	-40 to +150	1.55 (I _F =10A)	10	0.05	1.5	TO-247	4.9

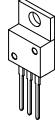
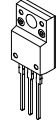
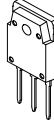
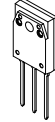

() 条件

*1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流)
*2 正弦波 10ms. 1チップあたり *3 V_R=V_{RRM} 1チップあたり
*4 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)
*2 Sine wave, 10ms per element *3 V_R=V_{RRM} per element
*4 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

■ スーパー LLD 3 (連続モード PFC 回路用) Super LLD 3 (Continuous mode PFC)

Super LLD 3 (Continuous mode PFC)						TO-220	TO-220F	TO-3P (Q)	TO-247	T-Pack (S)
										
結線	V _{RRM} (V)	I _o (A)	V _F (V)	I _R (μA)	T _{rr} (μsec)					
シングル	600	8	3	25	0.026	✓	✓			
		10	3	30	0.028	✓	✓			
デュアル	600	16	3	25	0.026	✓	✓			✓
		20	3	30	0.028	✓	✓	✓	✓	✓

シングル 1 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.		V _{FM} Max. Volts	I _{RRM} *3 Max. μA	t _{rr} *4 μ sec.	R _{th(j-c)} °C/W		
YA981S6R	600	8 (Tc=99°C)	40	-40 to +150	3.0 (I _F =8A)	25	0.026	2.5	TO-220AB	2.0
YG981S6R	600	8 (Tc=58°C)	40	-40 to +150	3.0 (I _F =8A)	25	0.026	4.5	TO-220F	1.7
YA982S6R	600	10 (Tc=99°C)	50	-40 to +150	3.0 (I _F =10A)	30	0.028	2.0	TO-220AB	2.0
YG982S6R	600	10 (Tc=60°C)	50	-40 to +150	3.0 (I _F =10A)	30	0.028	3.5	TO-220F	1.7

() 条件
 *1 50Hz 方形波 duty=1/2
 *2 正弦波 10ms. *3 V_R=V_{RRM}
 *4 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

() Conditions
 *1 50Hz Square wave duty=1/2
 *2 Sine wave, 10ms *3 V_R=V_{RRM}
 *4 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.		V _{FM} Max. Volts	I _{RRM} *3 Max. μA	t _{rr} *4 μ sec.	R _{th(j-c)} °C/W		
YA982C6R	600	16 (Tc=88°C)	40	-40 to +150	3.0 (I _F =8A)	25	0.026	1.5	TO-220AB	2.0
TS982C6R	600	16 (Tc=88°C)	40	-40 to +150	3.0 (I _F =8A)	25	0.026	1.5	T-pack(S)	1.6
YG982C6R	600	16 (Tc=68°C)	40	-40 to +150	3.0 (I _F =8A)	25	0.026	2	TO-220F	1.7
YA985C6R	600	20 (Tc=86°C)	50	-40 to +150	3.0 (I _F =10A)	30	0.028	1.25	TO-220AB	2.0
TS985C6R	600	20 (Tc=86°C)	50	-40 to +150	3.0 (I _F =10A)	30	0.028	1.25	T-pack(S)	1.6
YG985C6R	600	20 (Tc=60°C)	50	-40 to +150	3.0 (I _F =10A)	30	0.028	1.75	TO-220F	1.7
PH985C6	600	20 (Tc=73°C)	50	-40 to +150	3.0 (I _F =10A)	30	0.028	1.5	TO-247	4.9

() 条件
 *1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流)
 *2 正弦波 10ms. 1チップあたり *3 V_R=V_{RRM} 1チップあたり
 *4 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

() Conditions
 *1 50Hz Square wave duty 1/2 (Average forward current of centertap full wave connection)
 *2 Sine wave, 10ms per element *3 V_R=V_{RRM} per element
 *4 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

■ 低損失超高速ダイオード Low-Loss Fast Recovery Diodes (LLD)

Low-Loss Fast Recovery Diodes (LLD)						TO-220F	K-Pack(L)	K-Pack(S)	TFP
結線	V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)	Trr (μsec)				
シングル	200	5	0.95	100	0.035	✓	✓	✓	
		10	0.98	200	0.035	✓			
デュアル	200	5	0.95	100	0.035	✓	✓	✓	
		10	0.95	100	0.035	✓			
		20	0.98	200	0.035	✓			✓
	300	5	1.2	100	0.035	✓			
		10	1.2	100	0.035	✓			
		20	1.2	200	0.035				✓

シングル 1 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.	I _{FSM} *2 Amps.		V _{FM} *3 Max. Volts	I _{RRM} *4 Max. μA	trr*5 μ sec.	R _{th(j-c)} °C/W		
KP926S2	200	5 (Tc=106°C)	70	-40 to +150	0.95	100	0.035	10.0	K-Pack(L)	0.6
KS926S2	200	5 (Tc=106°C)	70	-40 to +150	0.95	100	0.035	10.0	K-pack(S)	0.6
YG911S2R	200	5 (Tc=134°C)	50	-40 to +150	0.95	100	0.035	3.5	TO-220F	1.7
YG912S2R	200	10 (Tc=116°C)	80	-40 to +150	0.98	200	0.035	3.5	TO-220F	1.7
YG911S3R	300	5 (Tc=128°C)	40	-40 to +150	1.2	100	0.035	3.5	TO-220F	1.7

() 条件

*1 50Hz 方形波 duty=1/2

*2 正弦波 10ms. *3 I_F=I_O

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

*4 V_R=V_{RRM}

() Conditions

*1 50Hz Square wave duty 1/2

*2 Sine wave, 10ms *3 I_F=I_O

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

*4 V_R=V_{RRM}

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.	I _{FSM} *2 Amps.		V _{FM} *3 Max. Volts	I _{RRM} *4 Max. μA	trr*5 μ sec.	R _{th(j-c)} °C/W		
KP923C2	200	5 (Tc=103°C)	50	-40 to +150	0.95	100	0.035	10.0	K-Pack(L)	0.6
KS923C2	200	5 (Tc=103°C)	50	-40 to +150	0.95	100	0.035	10.0	K-pack(S)	0.6
YG901C2R	200	5 (Tc=120°C)	25	-40 to +150	0.95	100	0.035	5.0	TO-220F	1.7
YG902C2R	200	10 (Tc=115°C)	50	-40 to +150	0.95	100	0.035	3.5	TO-220F	1.7
YG906C2R	200	20 (Tc=102°C)	80	-40 to +150	0.98	200	0.035	2.5	TO-220F	1.7
MS906C2	200	20 (Tc=105°C)	80	-40 to +150	0.98	200	0.035	2.0	TFP	0.8
YG901C3R	300	5 (Tc=105°C)	25	-40 to +150	1.2	100	0.035	5.0	TO-220F	1.7
YG902C3R	300	10 (Tc=101°C)	40	-40 to +150	1.2	100	0.035	3.5	TO-220F	1.7
MS906C3	300	20 (Tc=95°C)	80	-40 to +150	1.2	200	0.035	2.0	TFP	0.8

() 条件

*1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流)

*2 正弦波 10ms. 1チップあたり *3 I_F=0.5I_O 1チップあたり

*4 V_R=V_{RRM} 1チップあたり

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine wave, 10ms per element *3 I_F=0.5I_O per element

*4 V_R=V_{RRM} per element

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

■ 低損失超高速低ノイズダイオード Low-Loss Fast Soft Recovery Diodes (LLD)

Low-Loss Fast Soft Recovery Diodes (LLD)						TO-220	TO-220F	TO-3PF	T-Pack (S)	K-Pack (S)	TFP
結線	V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)	T _{rr} (μsec)						
シングル	300	5	1.3	20	0.04					✓	
	400	5	1.45	20	0.05					✓	
デュアル	300	10	1.3	20	0.04	✓	✓		✓		
		20	1.3	35	0.04	✓	✓	✓	✓		✓
	400	10	1.45	20	0.05	✓	✓		✓		
		20	1.45	35	0.05	✓	✓	✓	✓		✓

シングル 1 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.	I _{FSM} *2 Amps.		V _{FM} *3 Max. Volts	I _{RRM} *4 Max. μA	t _{rr} *5 μ sec.	R _{th(j-c)} °C/W		
KS986S3	300	5 (Tc=128°C)	90	-40 to +150	1.3	20	0.04	3.5	K-pack(S)	0.6
KS986S4	400	5 (Tc=125°C)	80	-40 to +150	1.45	20	0.05	3.5	K-pack(S)	0.6

() 条件

*1 50Hz 方形波 duty=1/2

*2 正弦波 10ms. *3 I_F=I_O *4 V_R=V_{RRM}

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine wave, 10ms *3 I_F=I_O per element *4 V_R=V_{RRM}

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O *1 Amps.	I _{FSM} *2 Amps.		V _{FM} *3 Max. Volts	I _{RRM} *4 Max. μA	t _{rr} *5 μ sec.	R _{th(j-c)} °C/W		
YG982C3R	300	10 (Tc=112°C)	90	-40 to +150	1.3	20	0.04	3	TO-220F	1.7
YA982C3R	300	10 (Tc=128°C)	90	-40 to +150	1.3	20	0.04	1.75	TO-220AB	2.0
TS982C3R	300	10 (Tc=128°C)	90	-40 to +150	1.3	20	0.04	1.75	T-pack(S)	1.6
YG985C3R	300	20 (Tc=105°C)	110	-40 to +150	1.3	35	0.04	1.75	TO-220F	1.7
YA985C3R	300	20 (Tc=118°C)	110	-40 to +150	1.3	35	0.04	1.25	TO-220AB	2.0
TS985C3R	300	20 (Tc=118°C)	110	-40 to +150	1.3	35	0.04	1.25	T-pack(S)	1.6
MS985C3	300	20 (Tc=118°C)	110	-40 to +150	1.3	35	0.04	1.25	TFP	0.8
PG985C3R	300	20 (Tc=73°C)	110	-40 to +150	1.3	35	0.04	3	TO-3PF	6.0
YG982C4R	400	10 (Tc=107°C)	80	-40 to +150	1.45	20	0.05	3	TO-220F	1.7
YA982C4R	400	10 (Tc=125°C)	80	-40 to +150	1.45	20	0.05	1.75	TO-220AB	2.0
TS982C4R	400	10 (Tc=125°C)	80	-40 to +150	1.45	20	0.05	1.75	T-pack(S)	1.6
YG985C4R	400	20 (Tc=100°C)	100	-40 to +150	1.45	35	0.05	1.75	TO-220F	1.7
YA985C4R	400	20 (Tc=114°C)	100	-40 to +150	1.45	35	0.05	1.25	TO-220AB	2.0
TS985C4R	400	20 (Tc=114°C)	100	-40 to +150	1.45	35	0.05	1.25	T-pack(S)	1.6
MS985C4	400	20 (Tc=114°C)	100	-40 to +150	1.45	35	0.05	1.25	TFP	0.8
PG985C4R	400	20 (Tc=64°C)	100	-40 to +150	1.45	35	0.05	3	TO-3PF	6.0

() 条件

*1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流)

*2 正弦波 10ms. 1チップあたり *3 I_F=0.5I_O 1チップあたり

*4 V_R=V_{RRM} 1チップあたり

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine wave, 10ms per element

*3 I_F=0.5I_O per element

*4 V_R=V_{RRM} per element

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

■ ショットキーバリアダイオード Schottky-Barrier Diodes (SBD)

Schottky-Barrier Diodes (SBD)					TO-3P(Q)	TO-3PF	T-Pack (S)	K-Pack (S)
結線	V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)				
シングル/ デュアル	40	10	0.55	5			✓	✓
		20	0.6	15			✓	
		30	0.55	20				✓
	60	30	0.58	20	✓	✓		

シングル / デュアル 1 in one-package/2 in one-package

型式 Device type	絶対最大定格 Maximum rating		I _{FSM} * ² Amps.	接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics			パッケージ Package	質量 Net mass Grams
	V _{RRM} Volts	I _O * ¹ Amps.			V _{FM} * ³ Max. Volts	I _{RRM} * ⁴ Max.mA	R _{th(j-c)} °C/W		
TP802C04R	40	10 (Tc=116°C)	120	-40 to +150	0.55 (I _F =4.0A)	5	3.0	T-Pack(L)	1.6
TS802C04R	40	10 (Tc=116°C)	120	-40 to +150	0.55 (I _F =4.0A)	5	3.0	T-pack(S)	1.6
TS805C04R	40	20 (Tc=110°C)	120	-40 to +150	0.6 (I _F =10A)	15	2.0	T-pack(S)	1.6
ESAD83M-004RR	40	30 (Tc=105°C)	150	-40 to +150	0.55 (I _F =12.5A)	20	1.7	TO-3PF	6.0
ESAD83-004R	40	30 (Tc=118°C)	150	-40 to +150	0.55 (I _F =12.5A)	20	1.2	TO-3P	5.5
ESAD83M-006RR	60	30 (Tc=106°C)	120	-40 to +150	0.58 (I _F =12.5A)	20	1.7	TO-3PF	6.0
TS808C06R	60	30 (Tc=115°C)	120	-40 to +150	0.58 (I _F =12.5A)	20	1.2	T-pack(S)	1.6
ESAD83-006R	60	30 (Tc=119°C)	120	-40 to +150	0.58 (I _F =12.5A)	20	1.2	TO-3P	5.5

() 条件

*1 50Hz方形波 duty=1/2 (センタータップ平均出力電流)

*2 正弦波 10ms. 1チップあたり *3 1チップあたり

*4 V_R=V_{RRM} 1チップあたり

*5 シングル品

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

*2 Sine wave, 10ms per element

*4 V_R=V_{RRM} per element

*5 1 in one-package

■ 低損失超高速ダイオード Low-Loss Fast Recovery Diodes (LLD)

Low-Loss Fast Recovery Diodes (LLD)						TO-220	TO-3P(Q)	TO-3PF	T-Pack (S)	K-Pack (S)
結線	V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)	T _{rr} (μsec)					
シングル/ デュアル	200	5	0.95	100	0.035				✓	
		10	0.95	100	0.035	✓			✓	✓
		20	0.95	200	0.04		✓	✓		
		20	0.98	200	0.035				✓	✓
	300	10	1.2	100	0.035				✓	✓
		20	1.2	200	0.04		✓	✓		
400	20	1.5	500	0.05		✓				

シングル / デュアル 1 in one-package/2 in one-package

型式 Device type	絶対最大定格 Maximum rating		I _{FSM} * ² Amps.	接合、保存温度 Thermal rating T _j and T _{stg} °C	電気的特性(Ta=25°C) Characteristics			パッケージ Package	質量 Net mass Grams	
	V _{RRM} Volts	I _O * ¹ Amps.			V _{FM} * ³ Max. Volts	I _{RRM} * ⁴ Max. μA	t _{rr} * ⁵ μ sec.			R _{th(j-c)} °C/W
TP901C2R	200	5 (Tc=120°C)	25	-40 to +150	0.95 (I _F =2.5A)	100	0.035	5.0	T-Pack(L)	1.6
TP902C2R	200	10 (Tc=125°C)	50	-40 to +150	0.95 (I _F =5A)	100	0.035	2.5	T-Pack(L)	1.6
TS902C2R	200	10 (Tc=125°C)	50	-40 to +150	0.95 (I _F =5A)	100	0.035	2.5	T-pack(S)	1.6
ESAD92M-02RR	200	20 (Tc=108°C)	100	-40 to +150	0.95 (I _F =10A)	200	0.04	2.0	TO-3PF	6.0
TP906C2R	200	20 (Tc=110°C)	80	-40 to +150	0.98 (I _F =10A)	200	0.035	2.0	T-Pack(L)	1.6
TS906C2R	200	20 (Tc=110°C)	80	-40 to +150	0.98 (I _F =10A)	200	0.035	2.0	T-pack(S)	1.6
ESAD92-02R	200	20 (Tc=115°C)	100	-40 to +150	0.95 (I _F =10A)	200	0.04	1.5	TO-3P	5.5
TP902C3R	300	10 (Tc=115°C)	40	-40 to +150	1.2 (I _F =5A)	100	0.035	2.5	T-Pack(L)	1.6
TS902C3R	300	10 (Tc=115°C)	40	-40 to +150	1.2 (I _F =5A)	100	0.035	2.5	T-pack(S)	1.6
ESAD92-03R	300	20 (Tc=110°C)	80	-40 to +150	1.2 (I _F =10A)	200	0.04	1.5	TO-3P	5.5
ESAD92M-03RR	300	20 (Tc=96°C)	80	-40 to +150	1.2 (I _F =10A)	200	0.04	2.0	TO-3PF	6.0
PA905C4R	400	20 (Tc=107°C)	70	-40 to +150	1.5 (I _F =10A)	500	0.05	1.5	TO-3P	5.5

() 条件

*1 50Hz方形波 duty=1/2 (センタータップ平均出力電流)

*2 正弦波 10ms. 1チップあたり *3 1チップあたり

*4 V_R=V_{RRM} 1チップあたり

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

*6 シングル品

() Conditions

*1 50Hz Square wave duty=1/2 (Average forward current of centertap full wave connection)

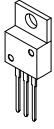
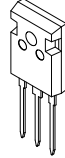
*2 Sine wave, 10ms per element

*4 V_R=V_{RRM} per element

*5 I_F=0.1A, I_R=0.2A, I_{rec}=0.05A

*6 1 in one-package

600V 超高速ダイオード Ultra Fast Recovery Diodes

Ultra Fast Recovery Diodes						TO-220	TO-247-P2
							
結線	V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μ A)	T_{rr} (μ sec)		
シングル	600	15	2.6	250	0.031	✓	✓
		25	2.6	250	0.033	✓	✓
		35	2.6	250	0.036		✓
デュアル	600	50	2.6	250	0.033		✓
		70	2.6	250	0.036		✓

シングル 1 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating Tj and Tstg °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} Max. Volts	I_{RRM}^{*4} Max. μ A	t_{rr}^{*5} μ sec.	$R_{th(j-c)}$ °C/W		
FDRP15S60L	600	15 (Tc=98°C)	110	-40 to +150	2.6	250	0.031	1.6	TO-220AB	2.0
FDRW15S60L	600	15 (Tc=85°C)	110	-40 to +150	2.6	250	0.031	2.0	TO-247-P2	4.9
FDRP25S60L	600	25 (Tc=86°C)	125	-40 to +150	2.6	250	0.033	1.2	TO-220AB	2.0
FDRW25S60L	600	25 (Tc=86°C)	125	-40 to +150	2.6	250	0.033	1.2	TO-247-P2	4.9
FDRW35S60L	600	35 (Tc=91°C)	140	-40 to +150	2.6	250	0.036	0.8	TO-247-P2	4.9

() 条件

*1 50Hz 方形波 duty=1/2

*2 正弦波 10ms. 1 パルス

*3 $I_F=I_O$

*4 $V_R=V_{RRM}$ *5 $V_R=30V, I_F=0.1 I_O, -di/dt=200A/us$

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine wave, 10ms 1shot

*3 $I_F=I_O$

*4 $V_R=V_{RRM}$ *5 $V_R=30V, I_F=0.1 I_O, -di/dt=200A/us$

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating Tj and Tstg °C	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass Grams
	V_{RRM} Volts	I_O^{*1} Amps.	I_{FSM}^{*2} Amps.		V_{FM}^{*3} Max. Volts	I_{RRM}^{*4} Max. μ A	t_{rr}^{*5} μ sec.	$R_{th(j-c)}$ °C/W		
FDRW50C60L	600	50 (Tc=86°C)	125	-40 to +150	2.6	250	0.033	0.6	TO-247-P2	4.9
FDRW70C60L	600	70 (Tc=91°C)	140	-40 to +150	2.6	250	0.036	0.4	TO-247-P2	4.9

() 条件

*1 50Hz 方形波 duty=1/2 (センタータップ平均出力電流)

*2 正弦波 10ms. 1チップあたり *3 $I_F=0.5 I_O$, 1チップあたり

*4 $V_R=V_{RRM}$ 1チップあたり

*5 $V_R=30V, I_F=0.05 I_O, -di/dt=200A/us$, 1チップあたり

() Conditions

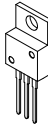
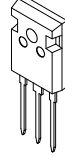
*1 50Hz Square wave duty=1/2, Output Current of center tap full wave connection

*2 Sine wave, 10ms 1shot, Rating per element *3 $I_F=0.5 I_O$, Rating per element

*4 $V_R=V_{RRM}$, Rating per element

*5 $V_R=30V, I_F=0.05 I_O, -di/dt=200A/us$, Rating per element

1200V 低ノイズ高速ダイオード Soft Recovery Fast Recovery Diodes

Soft Recovery Fast Recovery Diodes						TO-220	TO-247-P2
							
結線	V _{RRM} (V)	I _o (A)	V _F (V)	I _R (μA)	T _{rr} (μsec)		
シングル	1200	12	2.8	250	0.042	✓	✓
		20	2.8	250	0.055	✓	✓
		30	2.8	250	0.063		✓
デュアル	1200	40	2.8	250	0.055		✓
		60	2.8	250	0.063		✓

シングル 1 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.	T _j and T _{stg} °C	V _{FM} *3 Max. Volts	I _{RRM} *4 Max. μA	t _{rr} *5 μsec.	R _{th(j-c)} °C/W		Grams
FDRP12S120J	1200	12 (Tc=100°C)	100	-40 to +150	2.8	250	0.042	1.5	TO-220AB	2.0
FDRW12S120J	1200	12 (Tc=97°C)	100	-40 to +150	2.8	250	0.042	1.6	TO-247-P2	4.9
FDRP20S120J	1200	20 (Tc=98°C)	120	-40 to +150	2.8	250	0.055	1.0	TO-220AB	2.0
FDRW20S120J	1200	20 (Tc=88°C)	120	-40 to +150	2.8	250	0.055	1.2	TO-247-P2	4.9
FDRW30S120J	1200	30 (Tc=89°C)	150	-40 to +150	2.8	250	0.063	0.781	TO-247-P2	4.9

() 条件

*1 50Hz方形波 duty=1/2

*2 正弦波 10ms. 1 パルス

*4 V_R=V_{RRM} *5 V_R=30V, I_F=0.1 I_o, -di/dt=200A/us

*3 I_F=I_o

() Conditions

*1 50Hz Square wave duty=1/2

*2 Sine wave, 10ms 1shot

*4 V_R=V_{RRM} *5 V_R=30V, I_F=0.1 I_o, -di/dt=200A/us

デュアル 2 in one-package

型式 Device type	絶対最大定格 Maximum rating			接合、保存温度 Thermal rating	電気的特性(Ta=25°C) Characteristics				パッケージ Package	質量 Net mass
	V _{RRM} Volts	I _o *1 Amps.	I _{FSM} *2 Amps.	T _j and T _{stg} °C	V _{FM} *3 Max. Volts	I _{RRM} *4 Max. μA	t _{rr} *5 μsec.	R _{th(j-c)} °C/W		Grams
FDRW40C120J	1200	40 (Tc=98°C)	120	-40 to +150	2.8	250	0.055	0.5	TO-247-P2	4.9
FDRW60C120J	1200	60 (Tc=87°C)	150	-40 to +150	2.8	250	0.063	0.397	TO-247-P2	4.9

() 条件

*1 50Hz方形波 duty=1/2 (センタータップ平均出力電流)

*2 正弦波 10ms. 1チップあたり *3 I_F=0.5 I_o, 1チップあたり

*4 V_R=V_{RRM} 1チップあたり

*5 V_R=30V, I_F=0.05 I_o, -di/dt=200A/us, 1チップあたり

() Conditions

*1 50Hz Square wave duty=1/2, Output Current of center tap full wave connection

*2 Sine wave, 10ms 1shot, Rating per element *3 I_F=0.5 I_o, Rating per element

*4 V_R=V_{RRM}, Rating per element

*5 V_R=30V, I_F=0.05 I_o, -di/dt=200A/us, Rating per element

■ 圧力センサ Pressure Sensors

■ 特長

- 絶対圧測定
- デジタルトリミングによる高精度保証
- 広範囲な圧力範囲に対応、フルスケール 100kPa ~ 300kPa
- センサチップに過電圧保護回路、電磁波遮断回路、サージ保護回路を備えており、特にサージに関しては、世界的な国際基準である ISO7637-level 4 をクリア
- Vcc、Vout、GND 配線が断線した場合のダイアグ自己検出機能搭載
- EPROM の冗長性による高信頼性を確保



■ Features

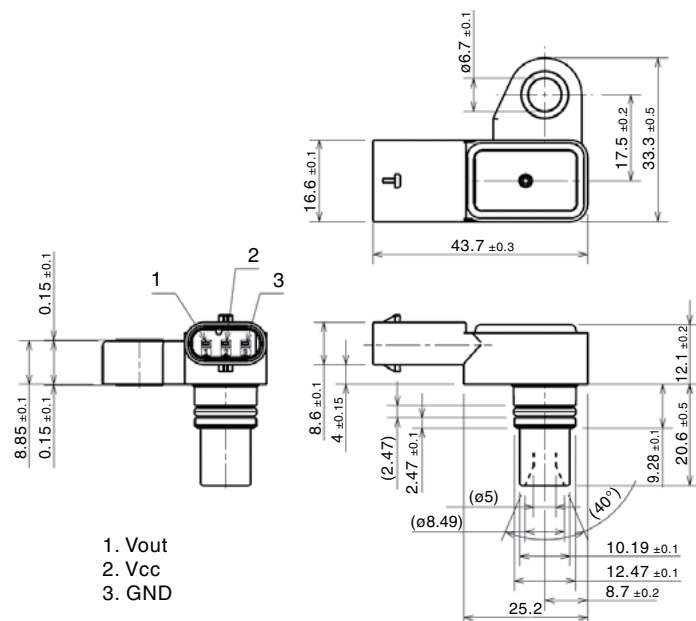
- Absolute pressure measurement
- High accuracy with digital trimming
- Wide pressure range, full scale of 100kPa to 300kPa
- Provided with overvoltage protection circuit, EMC filter, and surge protective device in the sensor chip
- Surge protection conforms to ISO7637-level 4 for automotive components
- Diagnostic self-detecting function in the event of a wire opened among Vcc, Vout and GND terminals
- High reliability ensured by EPROM bit redundancy

主な製品 Products

型 式 Device type	最大印加圧力 Max. applied voltage	許容電圧 Allowable voltage	使用温度 Operating temperature	使用圧力 Operating pressure	使用電圧 Operating voltage	出力電圧範囲 Output Voltage range	絶対圧・ 相対圧	パッケージ Package
	(kPa.abs)	(V)	(°C)	(kPa.abs)	(V)	(V)		
EPL4PC-R3S	500	7	-40 to 125	20 to 106.7	5.0±0.25	0.789 to 4.211	絶対圧	外装
EPL6GC-R3S	500	7	-40 to 125	25 to 242	5.0±0.25	0.5 to 4.5	絶対圧	外装

外形寸法 Dimensions, mm

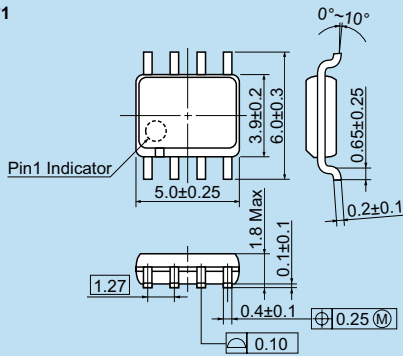
Direct mounting type



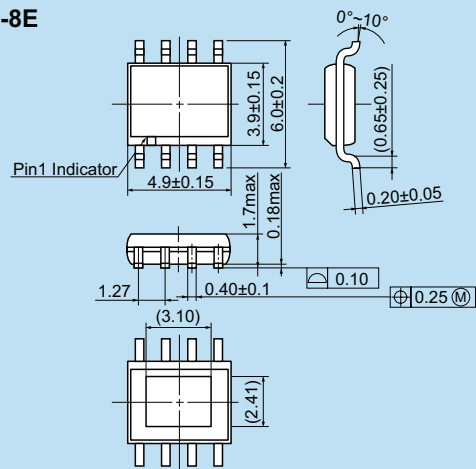
< 集積回路 / ディスクリートデバイス Integrated circuits / Discrete devices >

mm

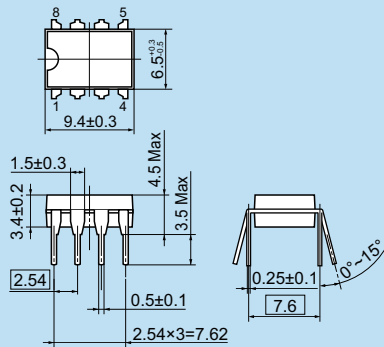
SOP-8^{*1}



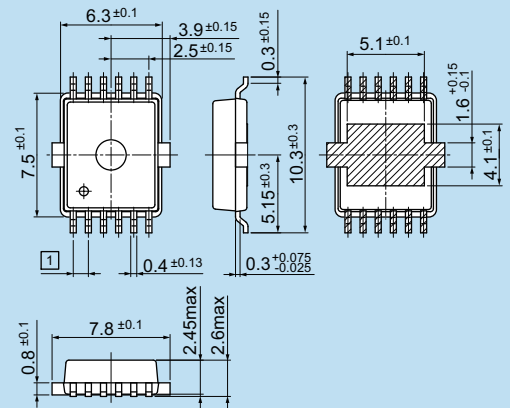
SOP-8E



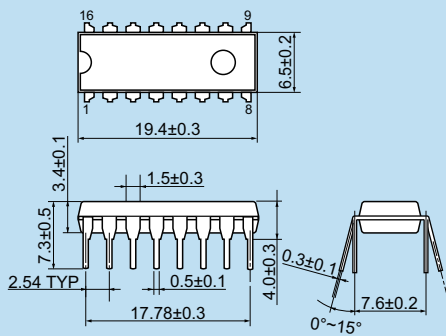
DIP-8



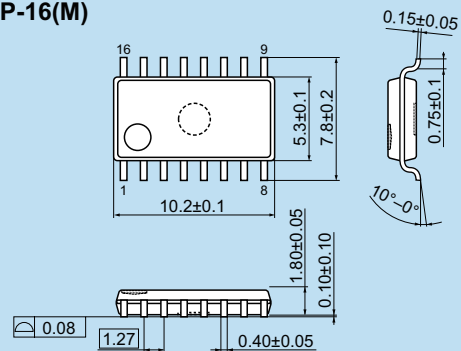
PSOP-12



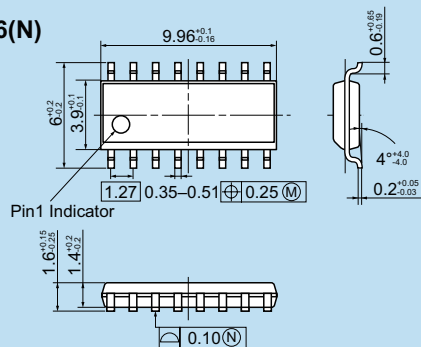
DIP-16



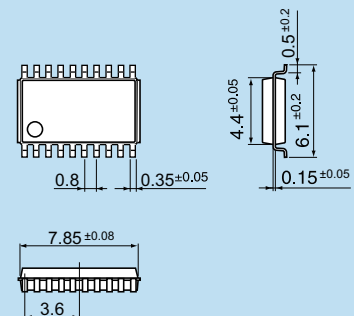
SOP-16(M)



SOP-16(N)



SSOP-20



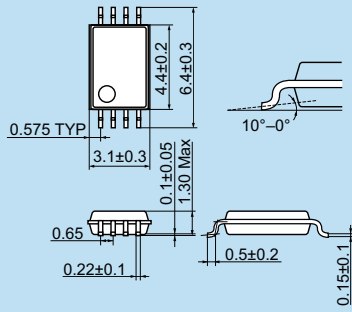
*1) 代表型式 (FA8AxxN) のパッケージサイズです。他の IC については個別アプリケーションノート (仕様書) を参照ください。

*1) This is the package size for the representative device type (FA8AxxN). For other ICs, please refer to the separate application note (specifications).

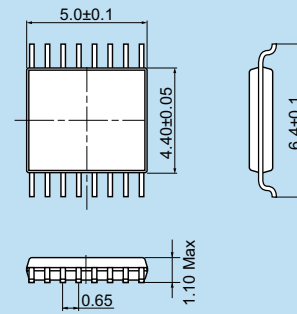
外形図/Outline

mm

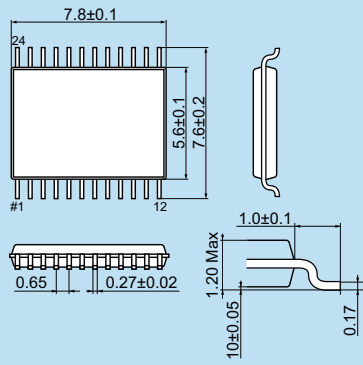
TSSOP-8



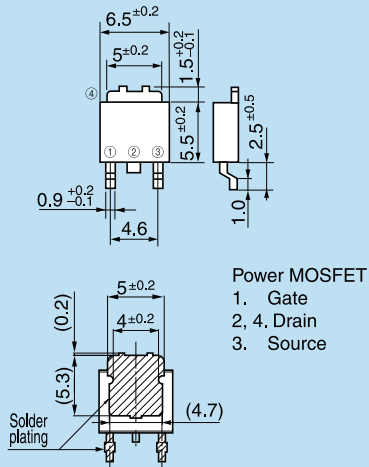
TSSOP-16



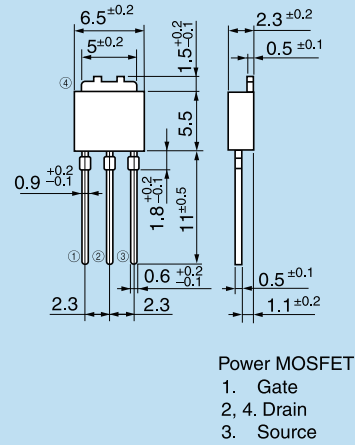
TSSOP-24



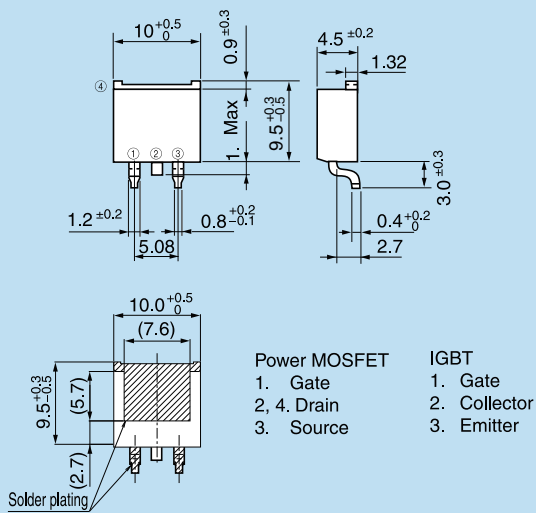
K-pack(S)/D-pack



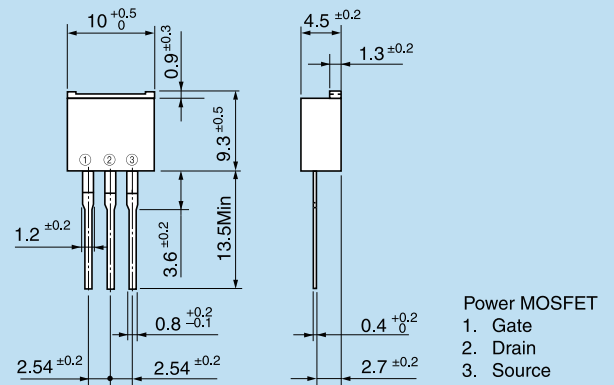
K-pack(L)/I-pack: Power MOSFET K-pack(P)/I-pack: Diode



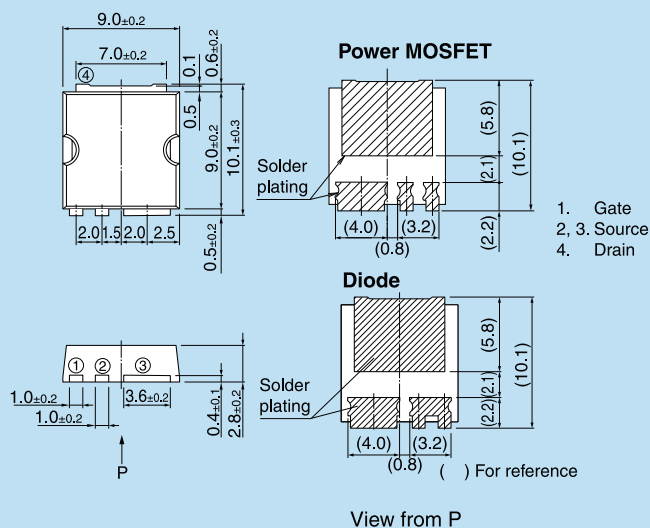
T-pack(S)



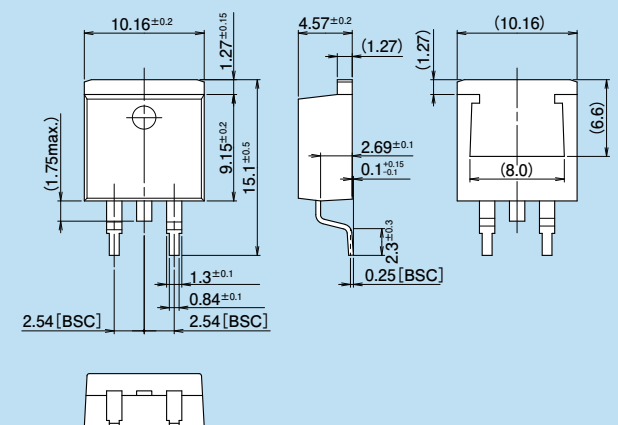
T-pack(L): Power MOSFET T-pack(P): Diode



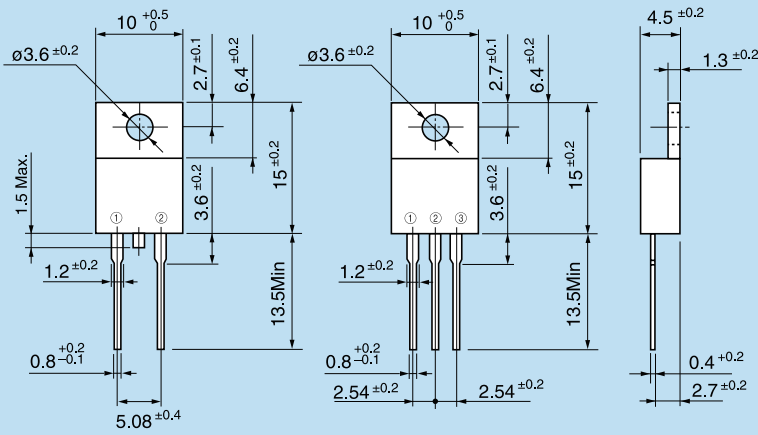
TFP



D2-Pack

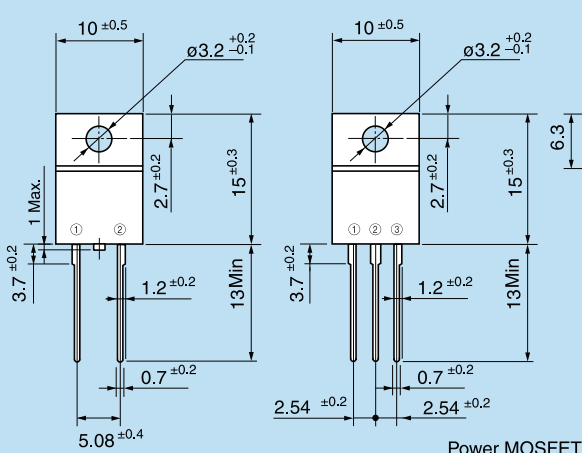


TO-220AB



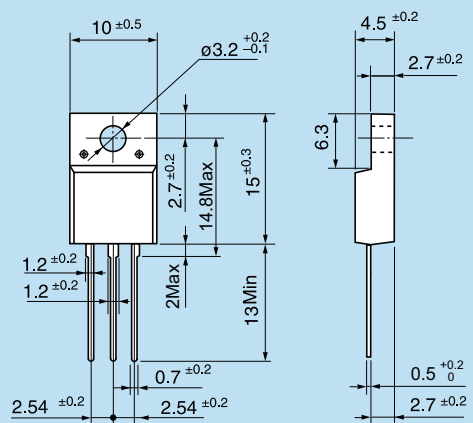
- | | |
|--------------|--------------|
| Power MOSFET | IGBT |
| 1. Gate | 1. Gate |
| 2. Drain | 2. Collector |
| 3. Source | 3. Emitter |

TO-220F



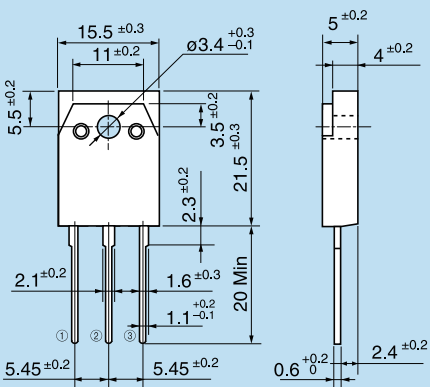
- | |
|--------------|
| Power MOSFET |
| 1. Gate |
| 2. Drain |
| 3. Source |

TO-220F (SLS)



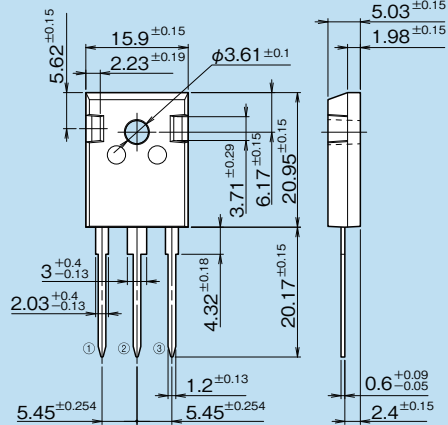
- | |
|--------------|
| Power MOSFET |
| 1. Gate |
| 2. Drain |
| 3. Source |

TO-247



- | |
|--------------|
| Power MOSFET |
| 1. Gate |
| 2. Drain |
| 3. Source |

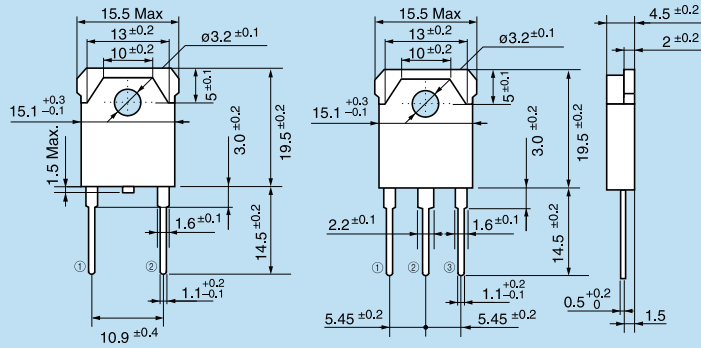
TO-247-P2



- | | | |
|--------------|--------------|------------|
| Power MOSFET | IGBT | FWD |
| 1. Gate | 1. Gate | 1. Anode |
| 2. Drain | 2. Collector | 2. Cathode |
| 3. Source | 3. Emitter | 3. Anode |

mm

TO-3P



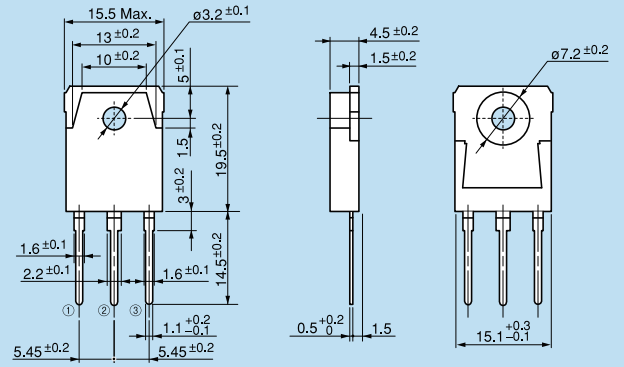
Power MOSFET

1. Gate
2. Drain
3. Source

IGBT

1. Gate
2. Collector
3. Emitter

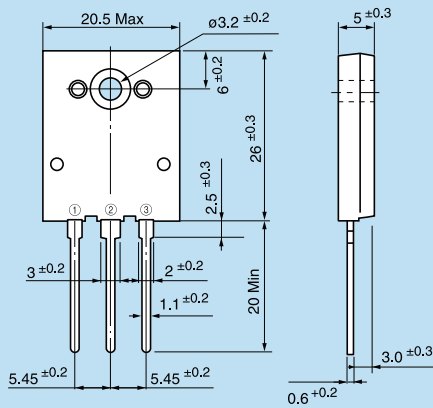
TO-3P(Q)



Power MOSFET

1. Gate
2. Drain
3. Source

TO-3PL



Power MOSFET

1. Gate
2. Drain
3. Source

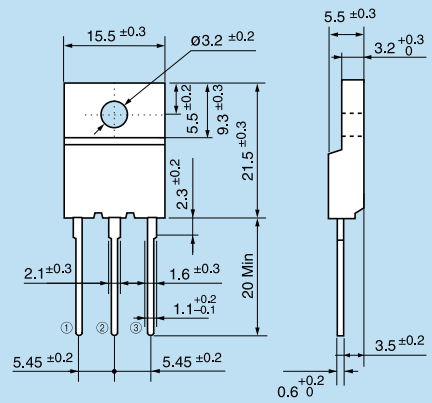
IGBT

1. Gate
2. Collector
3. Emitter

FRD: ERW13-060

1. Open
2. Cathode
3. Anode

TO-3PF



Power MOSFET

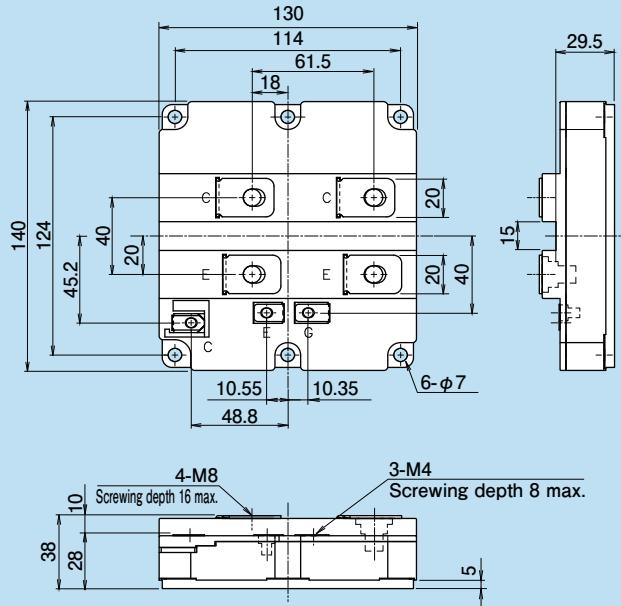
1. Gate
2. Drain
3. Source

外形図/Outline

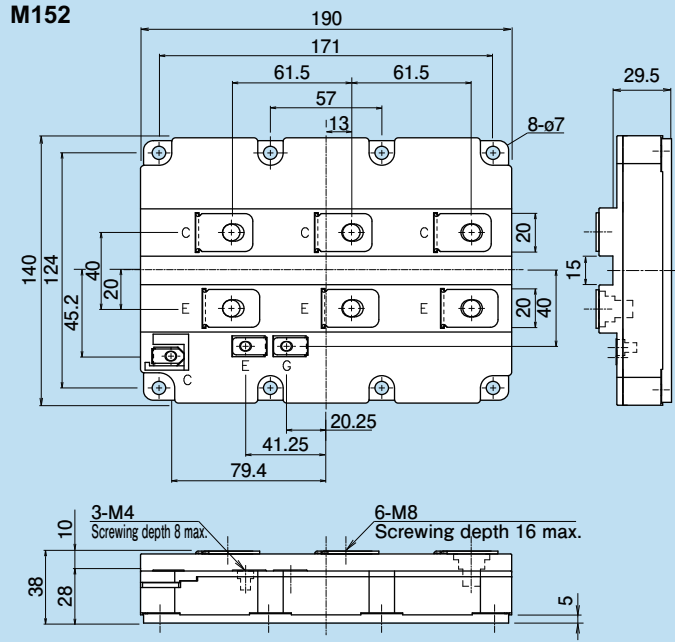
<パワーデバイス Power devices>

mm

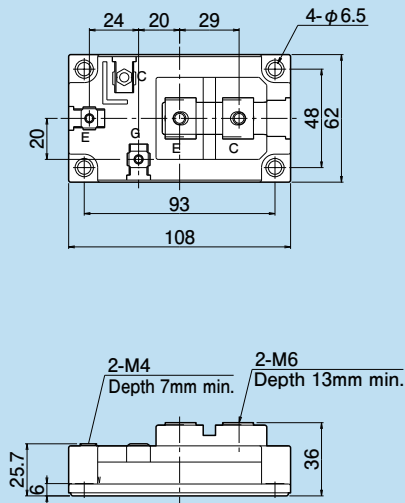
M151



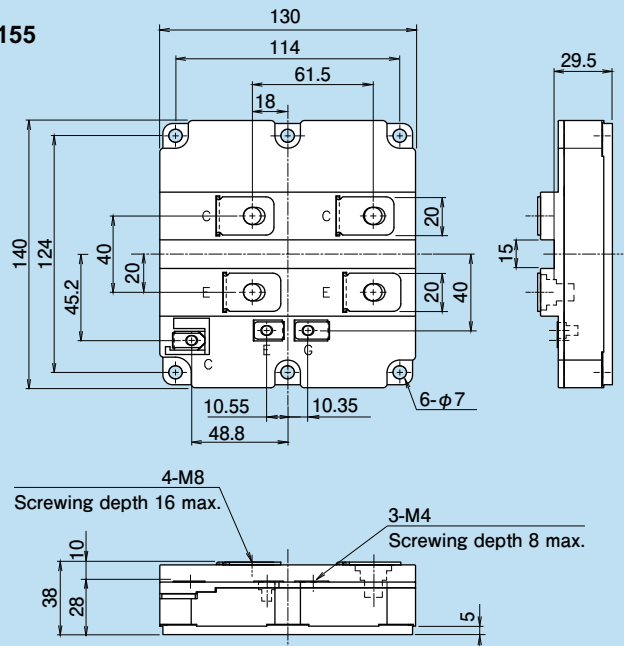
M152



M153

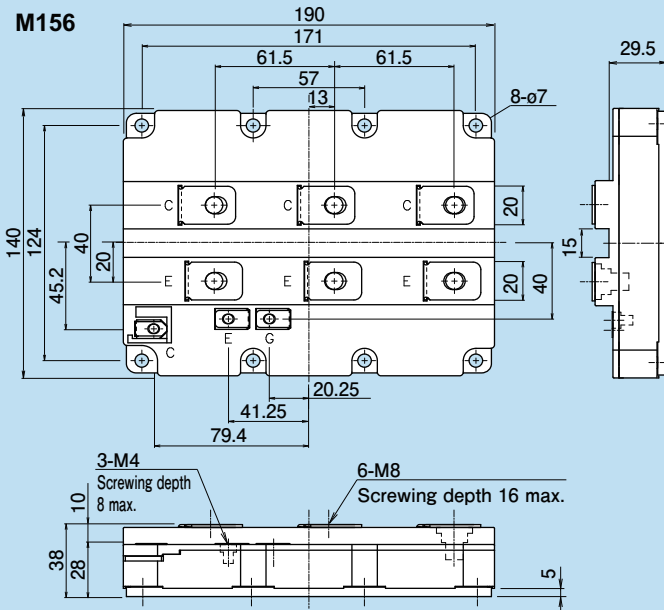


M155

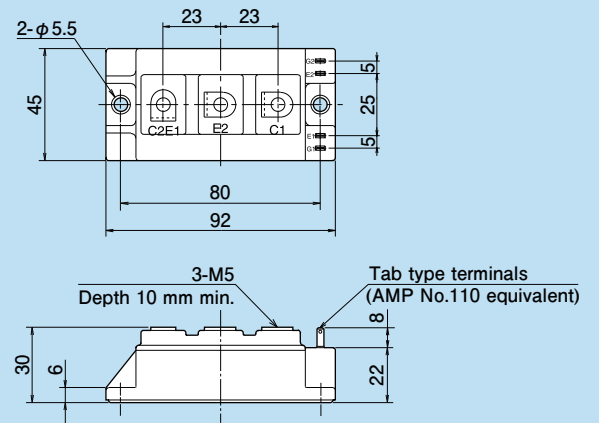


mm

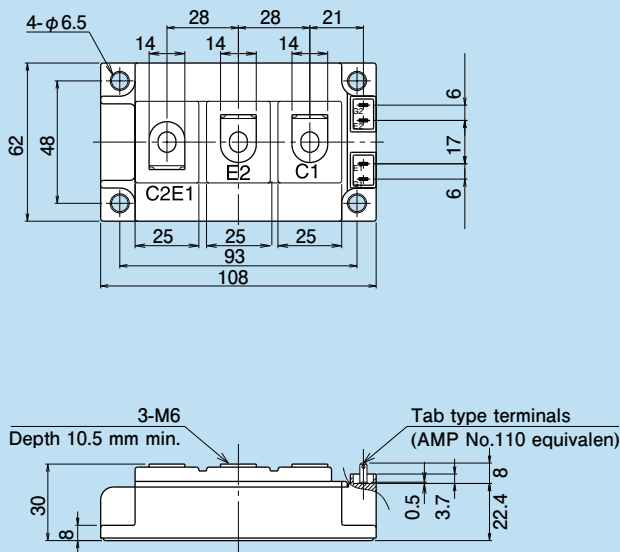
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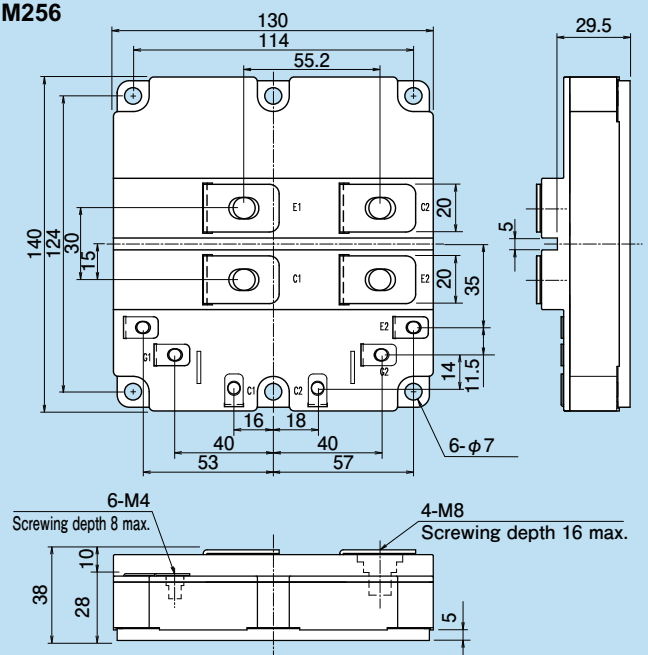
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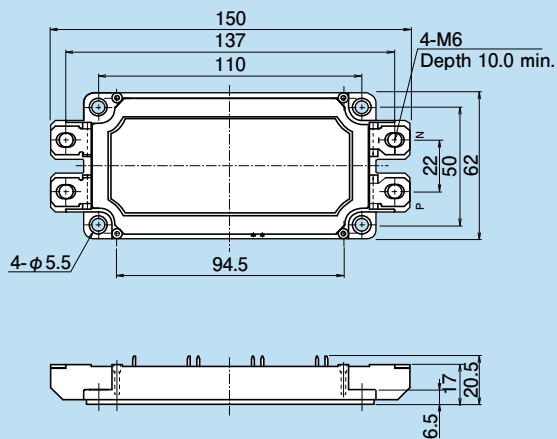
M249



M256



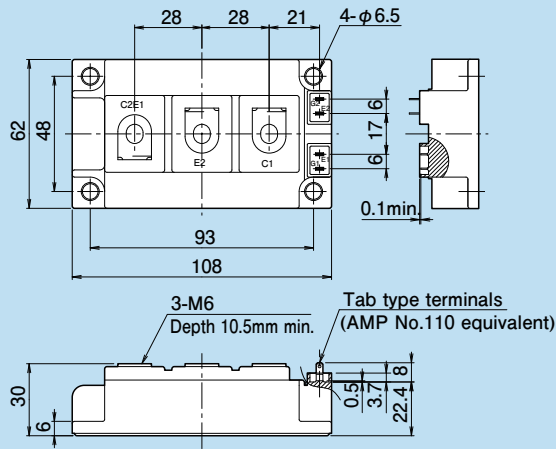
M254



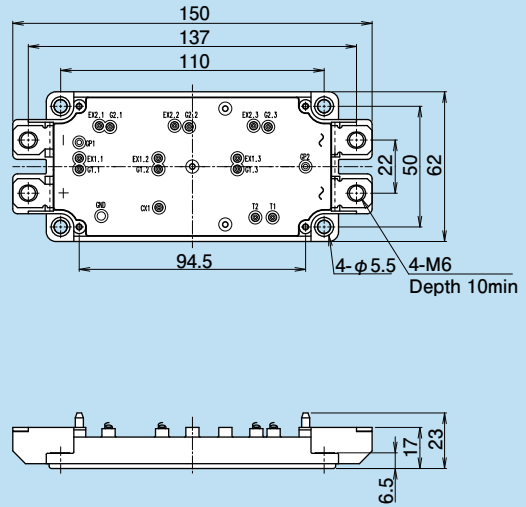
外形図/Outline

mm

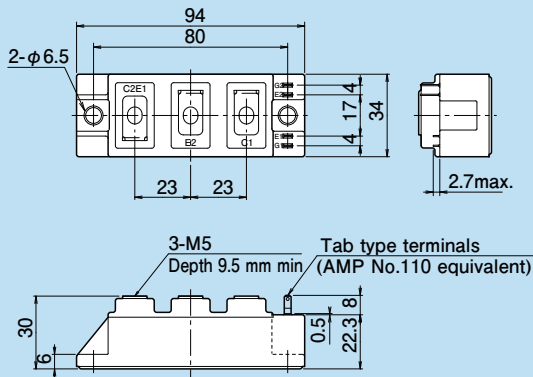
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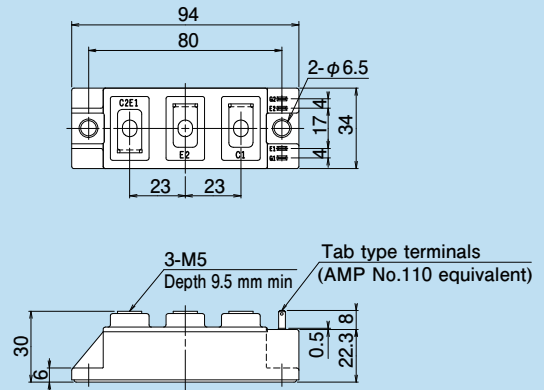
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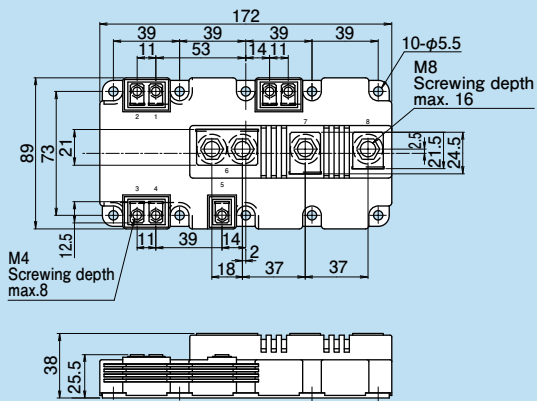
M262



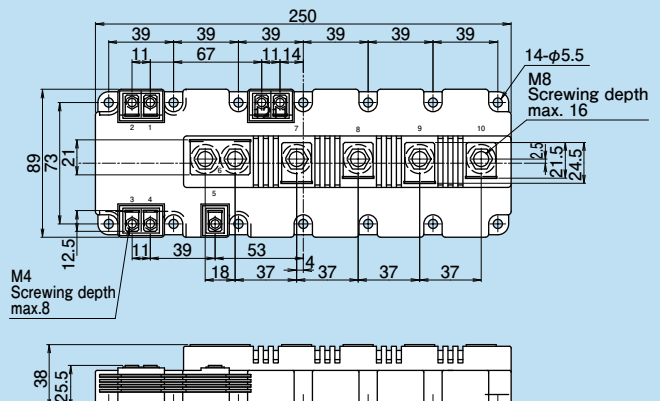
M263



M271



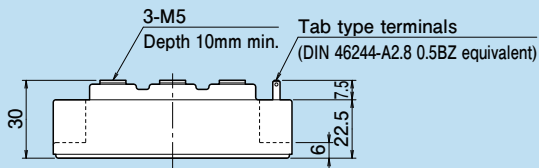
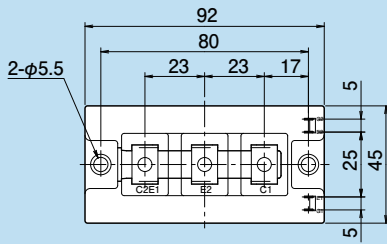
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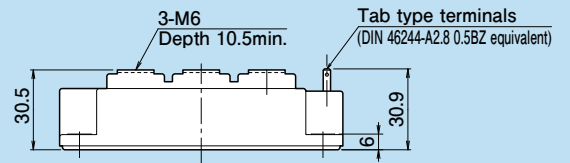
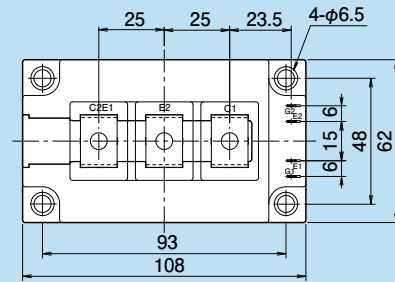
Outline

mm

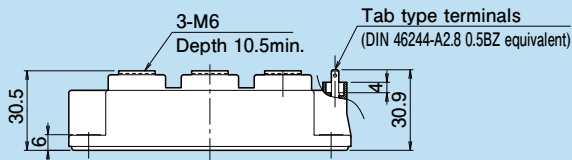
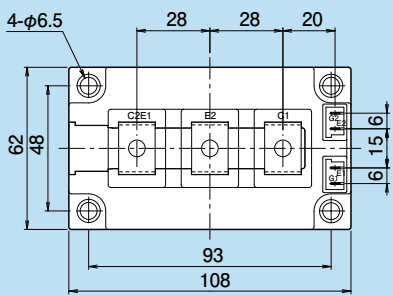
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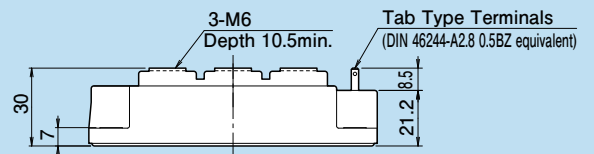
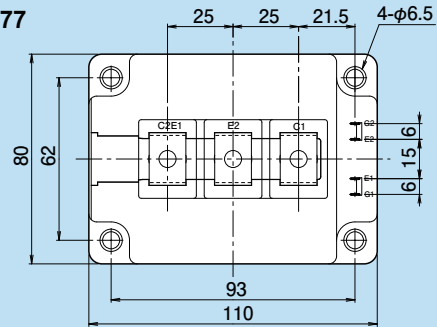
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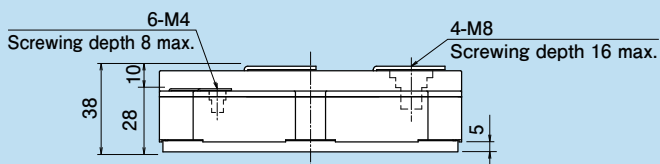
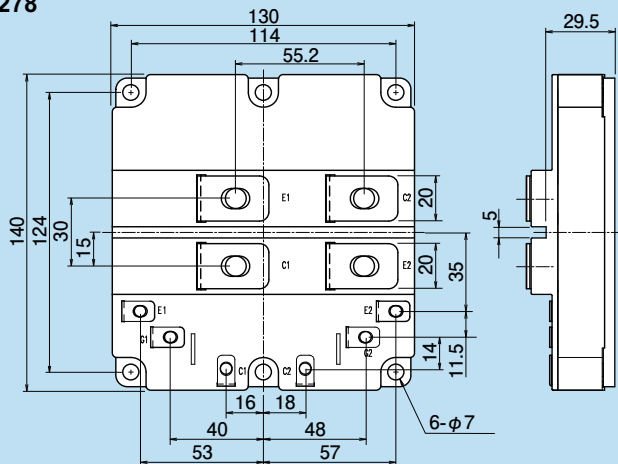
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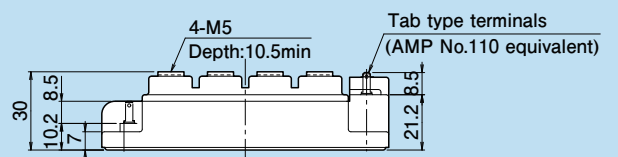
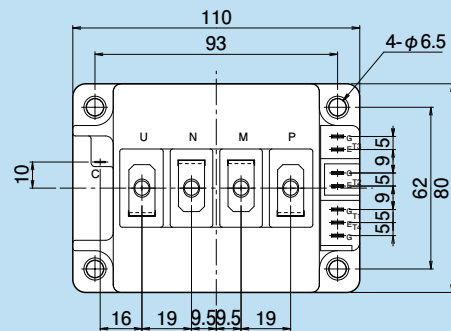
M277



M278



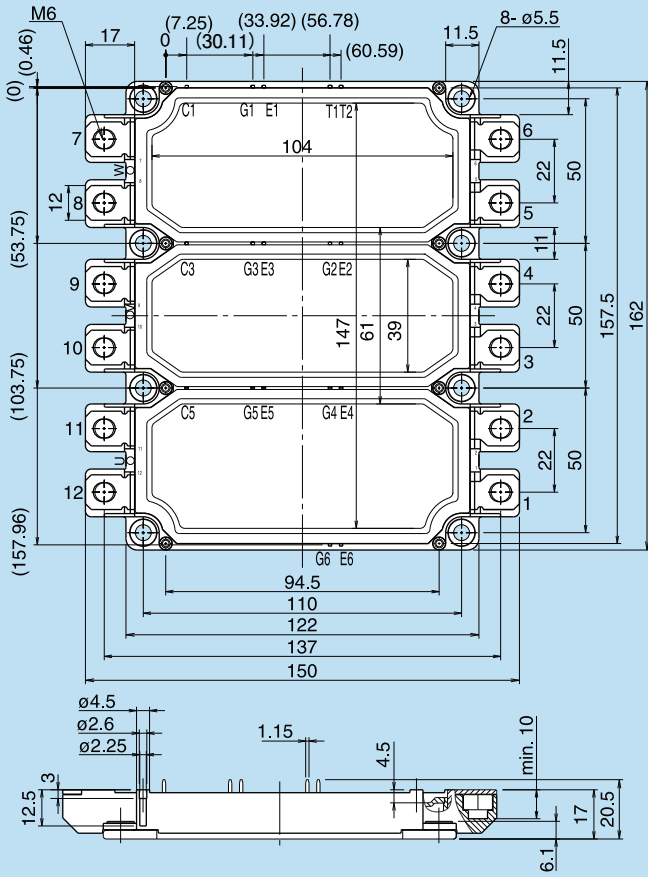
M403



外形图/Outline

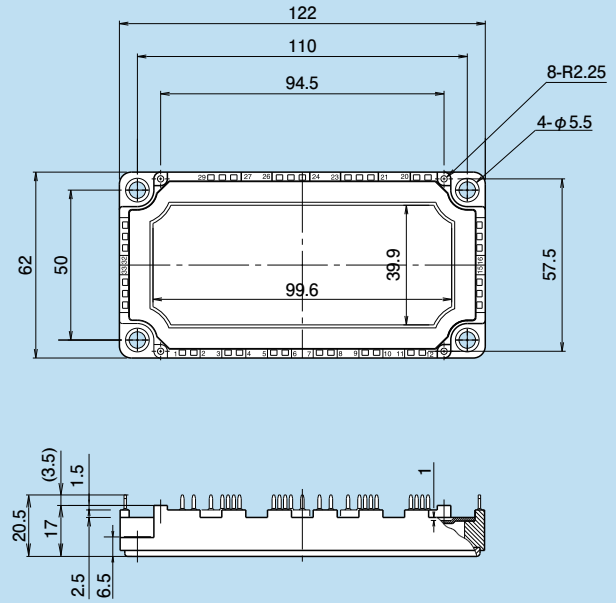
mm

M629

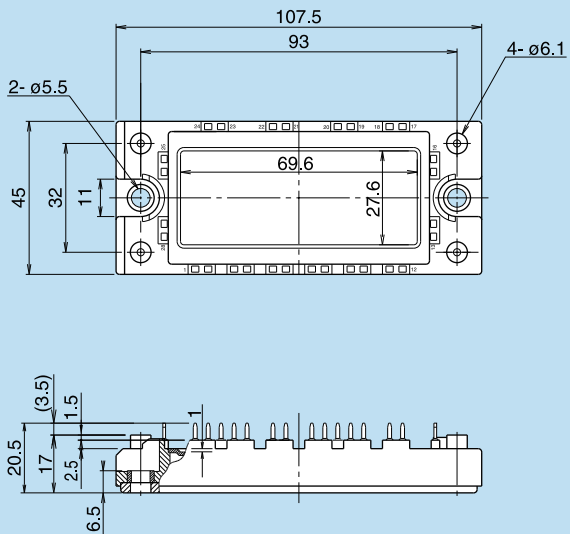


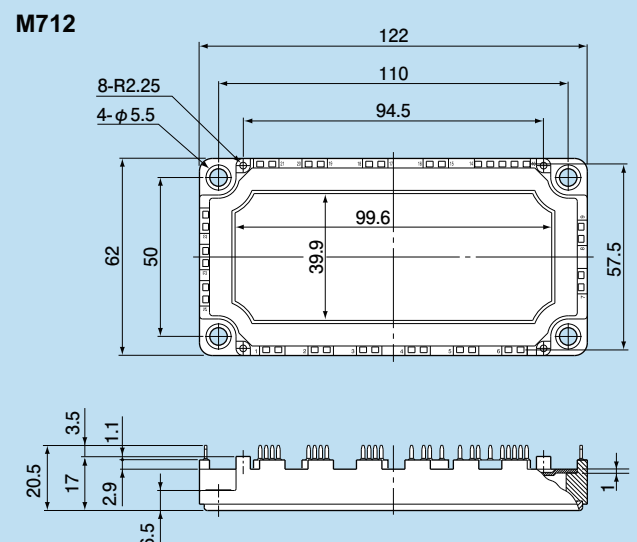
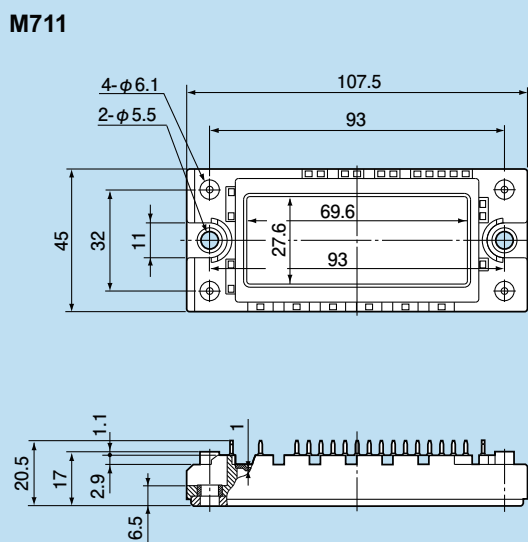
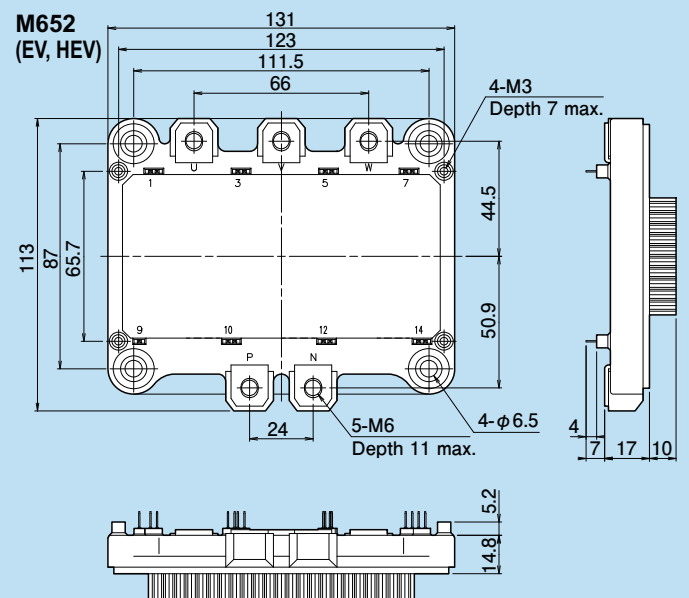
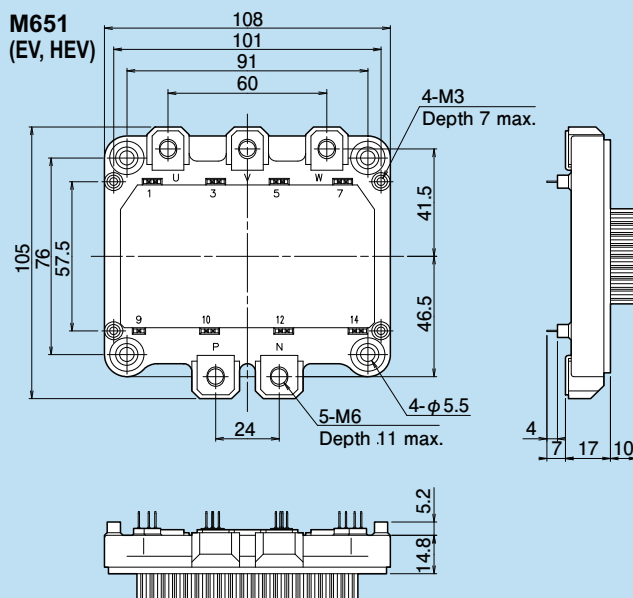
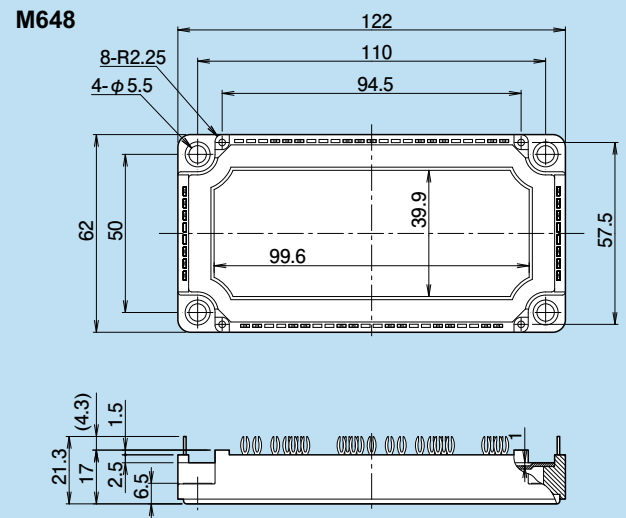
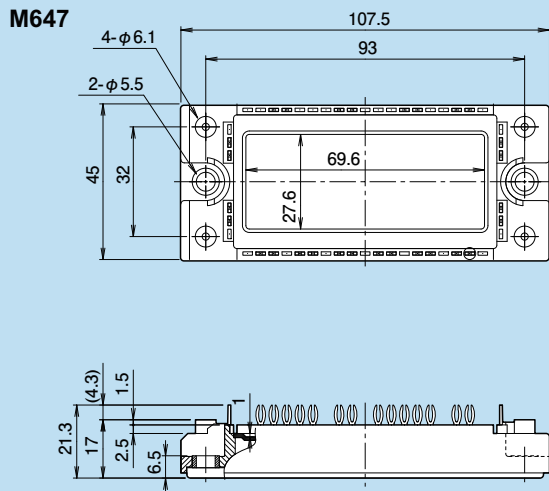
() : Theoretical dimensions, tolerance ± 0.5

M633



M636

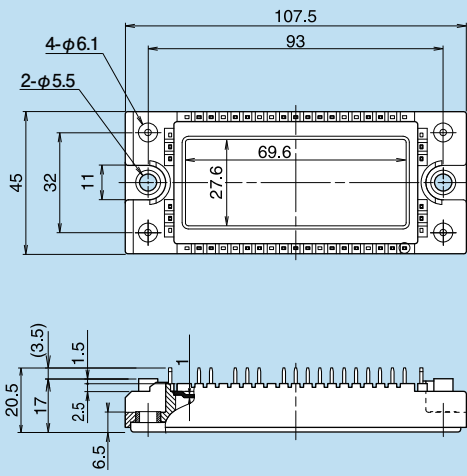




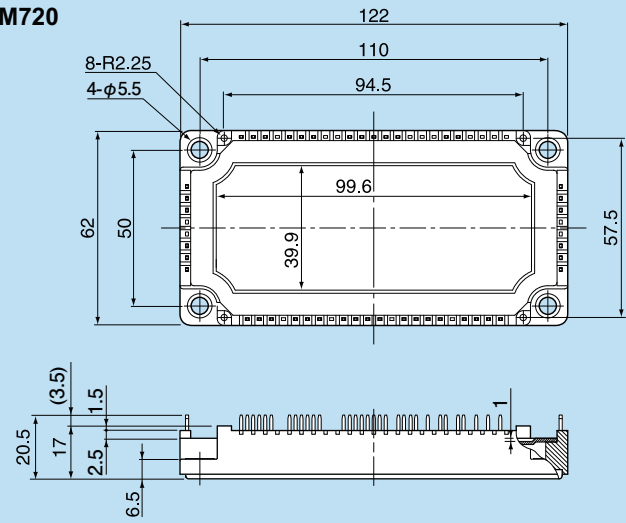
外形图/Outline

mm

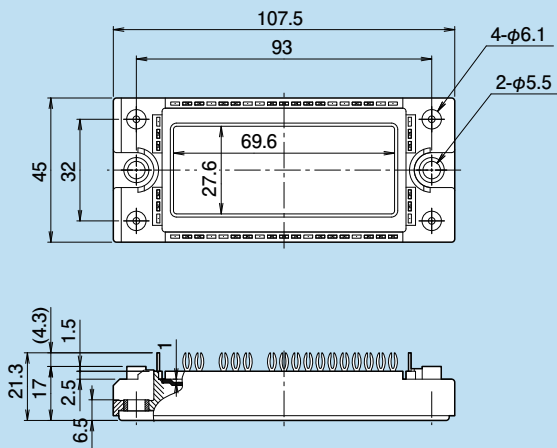
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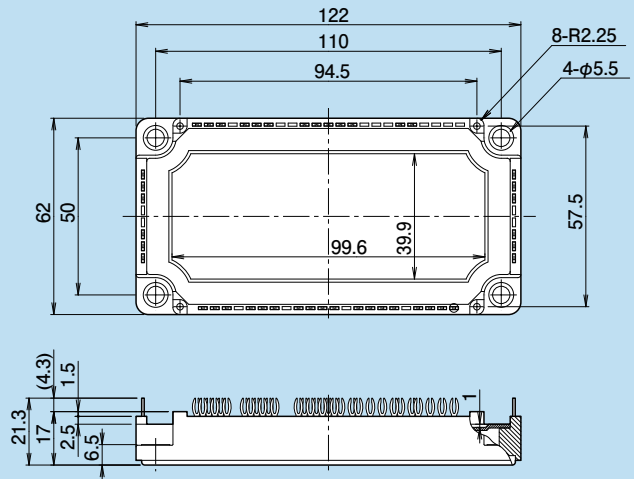
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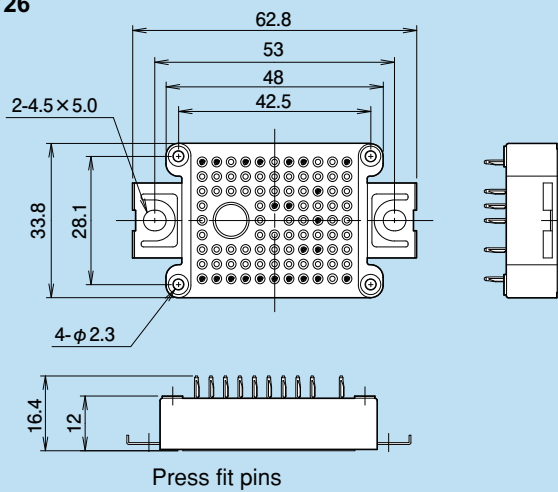
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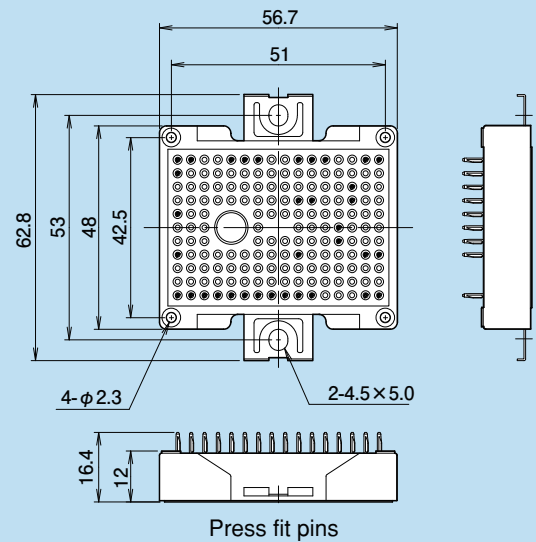
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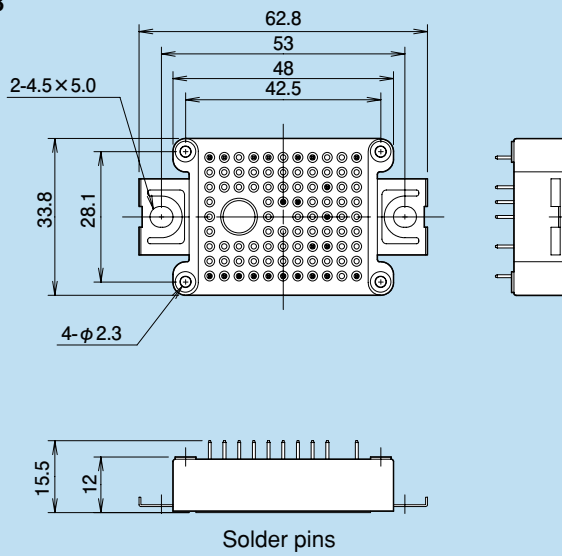
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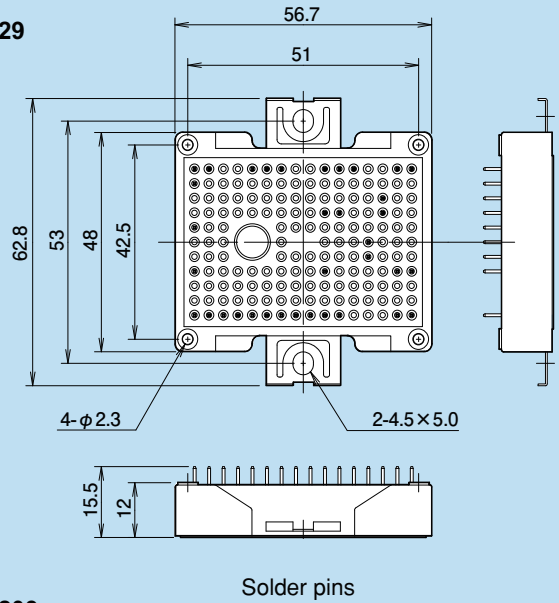
Outline

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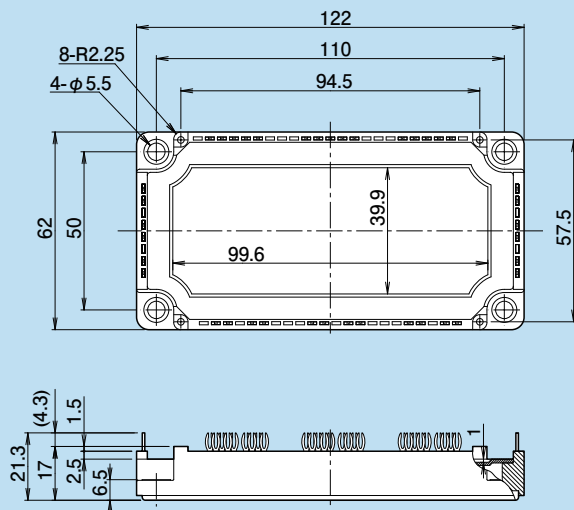
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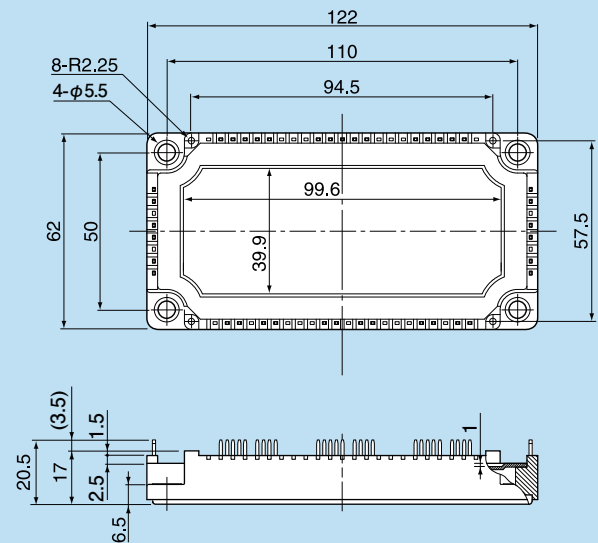
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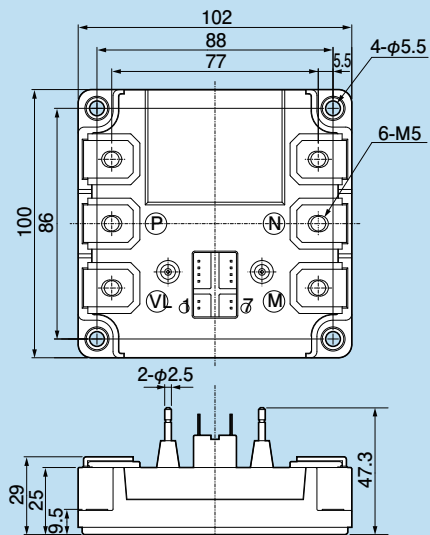
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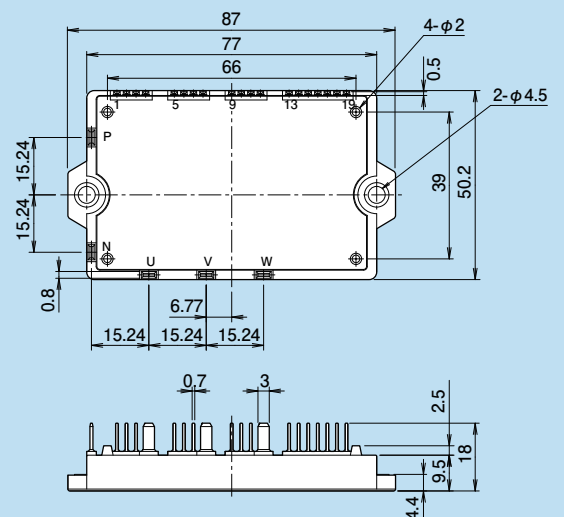
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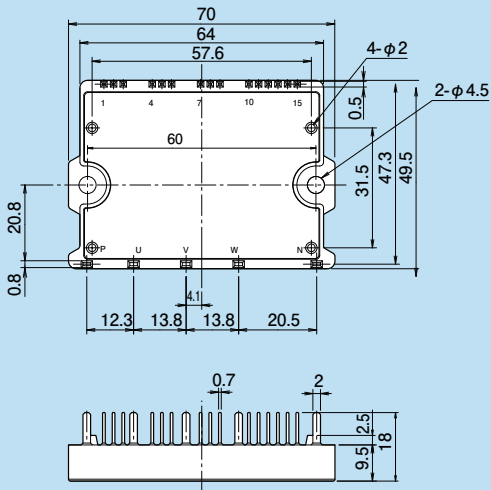
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(EV, HEV)**



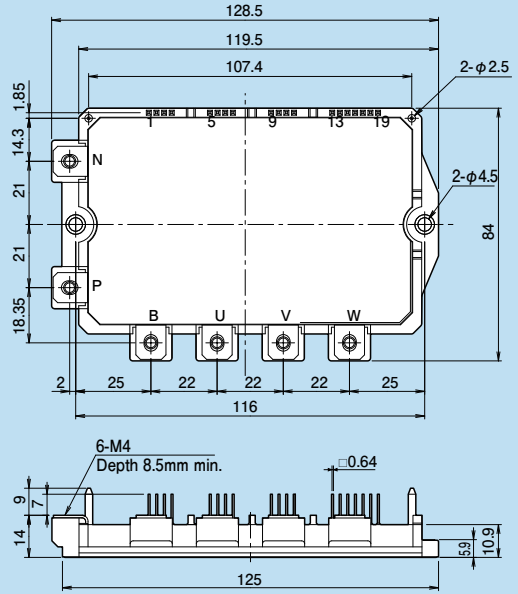
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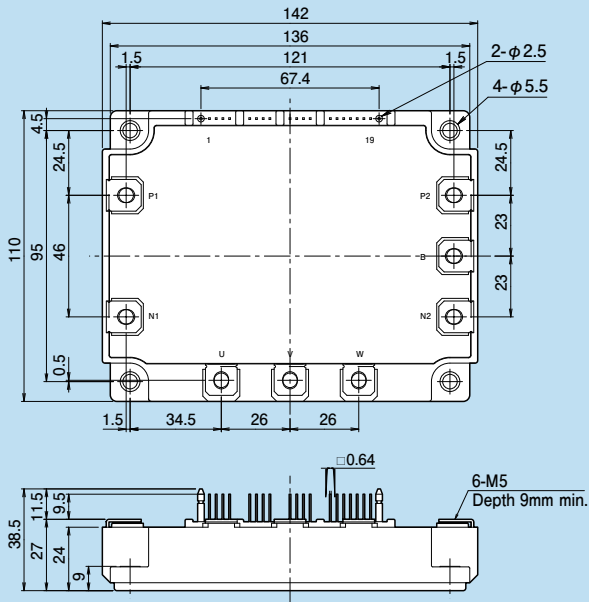
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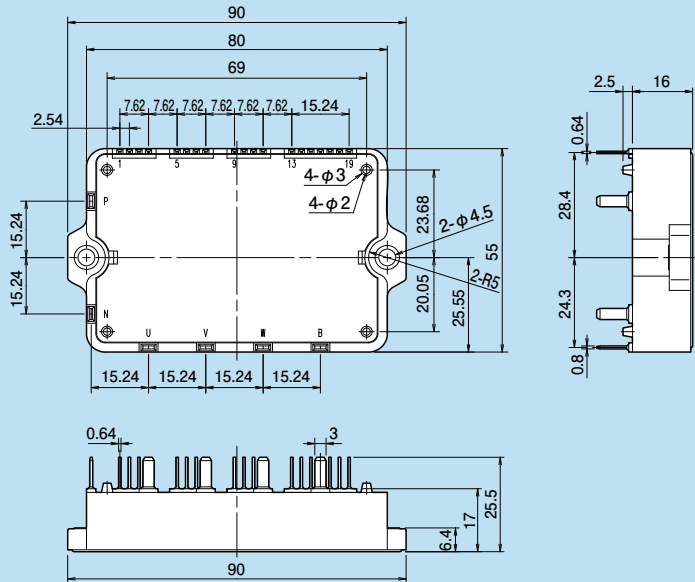
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P631

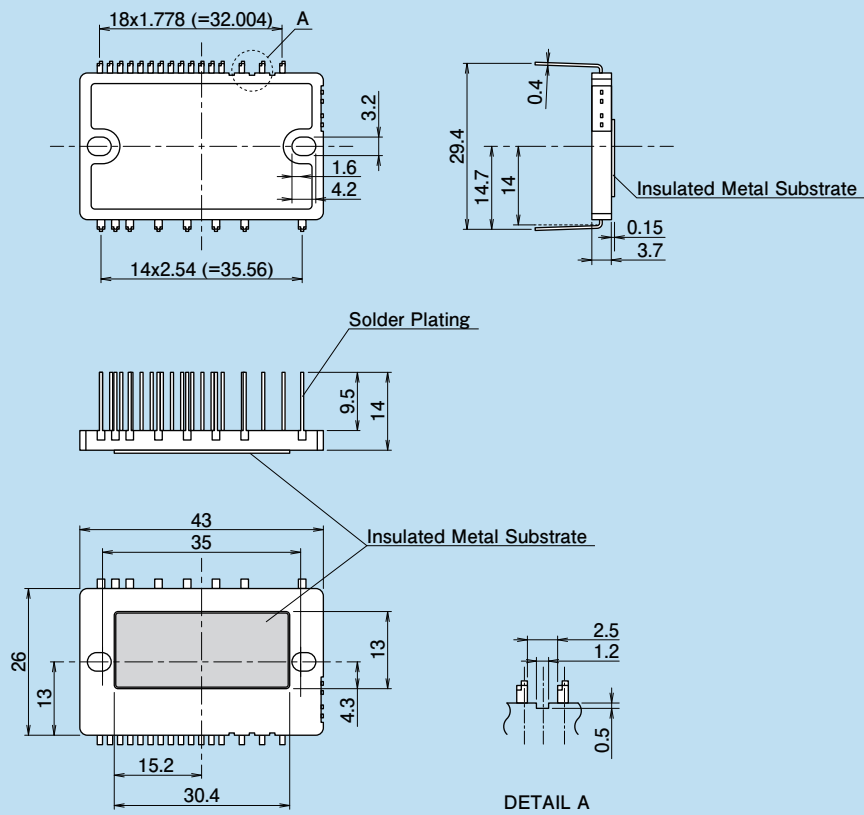


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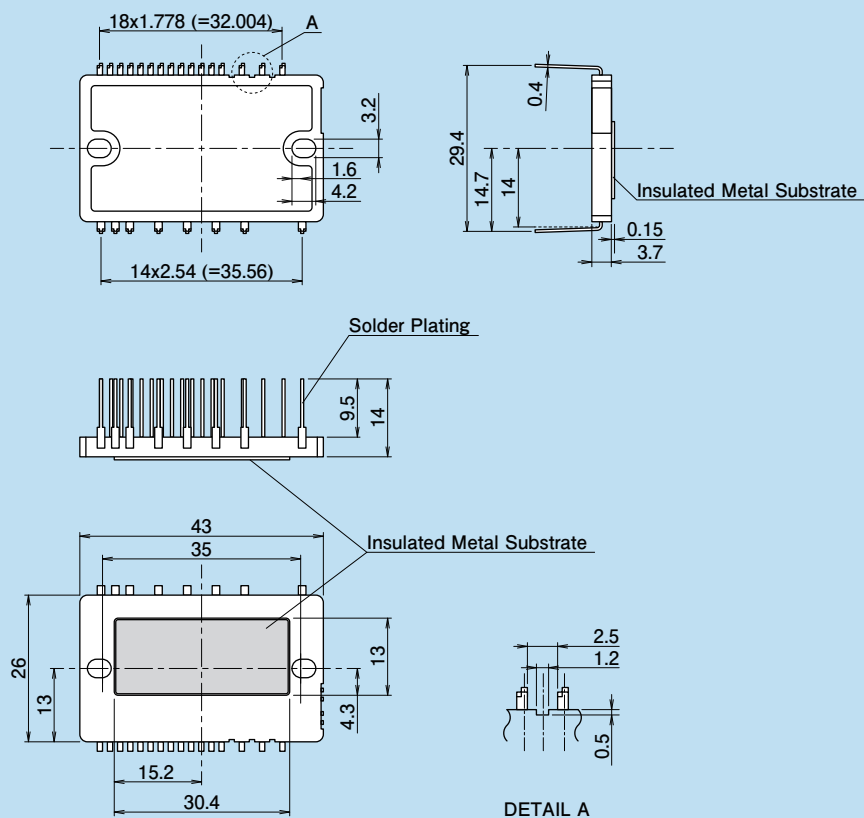


mm

P633



P633A



注文単位/Order Quantity

- ・ご注文は最小注文単位以上、且つその整数倍にてお願い致します。
- ・下記一覧表は単品（テーピング品を除く）及びリール品が対象です。
- ・テーピング品は、仕様により注文単位が異なりますのでお問合せ願います。

- ・ Please give us order above min order unit and that of integral multiplication.
- ・ This table subjects to single or reel package items(Except for taping items)
- ・ Order unit of taping package is different every spec. If you'd like to know how to order it, Please contact us.

種類 Description	パッケージ Package	型式 Type number	最小注文単位 Min. quantity per order	最小梱包単位 Min. quantity per packing
パワー-MOSFET ダイオード Power MOSFETs Diodes	TO-220AB	全型式 All types	100	500
	TO-220F		100	500
	TFP		1,500	1,500
	TO-247		100	500
	TO-3P, TO-3P(Q)		100	500
	TO-3PF		100	500
	TO-3PL		50	50
	K-pack (S)		3,000	3,000
	T-pack (S)		1,000	1,000
	K-pack (L, P)		500	500
	T-pack (L, P)		100	500
TO-220AB	-S2□PP (Tube)	1,000	1,000	
TO-220F	-S3□PP (Tube)	1,000	1,000	
パワー-MOSFET ディスクリートIGBT ダイオード Power MOSFETs Discrete IGBTs Diodes	TO-247-P2	全型式 All types	600	600
集積回路 ICs		下記を除く全型式 All types (except for below types)	2,000	2,000
		FA8A-□□, FA6A-□□, FA1A-□□	3,000	3,000
		FA5627, 28	3,000	3,000
		FA5637	3,000	3,000
		FA5641, 42, 43, 44	3,000	3,000
		FA5680, FA5681	3,000	3,000
		FA5696	3,000	3,000
		FA5651	3,000	3,000
		FA5752	3,000	3,000
		FA5760	3,000	3,000

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1MBI75U4F-120L-50	5	2MBI100VA-120-50	6	2MBI600VT-170E	9	2SK3451-01MR	55	2SK3612-01L, S	53	2SK3928-01	56
1MBI100U4F-120L-50	5	2MBI100VA-170-50	6	2MBI600VT-170E	9	2SK3468-01	54	2SK3648-01	53	2SK3929-01MR	56
1MBI150VA-120L-50	5	2MBI150HH-120-50	8	2MBI600VX-120-50	7	2SK3469-01MR	54	2SK3649-01MR	53	2SK3930-01L, S	56
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1MBI400VF-120-50	5	2MBI200VB-120-50	6	2MBI800VG-120P	9	2SK3513-01L, S	55	2SK3683-01MR	54	2SK3985-01	54
1MBI600V-120-50	5	2MBI200VH-120-50	6	2MBI800VG-120P	9	2SK3514-01	54	2SK3684-01L, S	54	2SK3986-01MR	54
1MBI600VF-120-50	5	2MBI200VH-170-50	6	2MBI800VG-170E	9	2SK3515-01MR	54	2SK3685-01	54	2SK3987-01L, S	54
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1MBI650VXA-170EH-54	10	2MBI225VN-120-50	7	2MBI800VT-170E	9	2SK3519-01	54	2SK3687-01MR	55	2SK3989-01MR	55
1MBI650VXA-170EL-50	10	2MBI225VX-120-50	7	2MBI800VT-170E	9	2SK3520-01MR	54	2SK3688-01L, S	55	2SK3990-01L, S	55
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1MBI1600VC-170E	9	2MBI450VN-170-50	7	2MBI1400VXB-170P-50	11	2SK3595-01MR	53	2SK3778-01	53	6MBI75VW-120-50	12
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6MBP15VRB060-50	19	7MBP35VFN120-50	20	7MBR35VM120-50	17	12MBI100VN-120-50	15	FA5502P/M	36	FA7711V	40
6MBP15VRC060-50	19	7MBP50VDA060-50	22	7MBR35VP120-50	17	12MBI100VX-120-50	15	FA5504P/N	32	FA7764AN/P	40
6MBP15VRD060-50	19	7MBP50VDA120-50	22	7MBR35VW120-50	18	EPL4PC-R3S	78	FA5510P/N	32	FA13842P/N	32
6MBP15VSG060-50	19	7MBP50VDN120-50	22	7MBR35VY120-50	18	EPL6GC-R3S	78	FA5511P/N	32	FA13843P/N	32
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6MBP100VDA120-50	22	7MBR15VKC060-50	16	7MBR100VY060-50	18	FA6A10N	38	FA5641N	34	FDRW60C120J	77
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FMC07N90E	49	FMH28N50E	47	FMP10N60S1	44	FMV09N65E	48	FMY24N60ES	59	PG865C15R	70
FMC08N80E	48	FMH28N50ES	50	FMP11N60E	48	FMV09N70E	48	FMY29N60S1FDA	58	PG985C3R	74
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TS868C04R	68	YA972S6R	71	YG872C10R	66		
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保守移行機種 / Maintenance products

- ・ 下記記載の機種は保守品移行機種です。
- ・ 新規設計には使用されないようお願いいたします。

- ・ Models listed below are for maintenance products only.
- ・ Do not use them for new designing

機種 Description	型式 Type number	機種 Description	型式 Type number	機種 Description	型式 Type number
パワーデバイス Power Devices	6MBP100RA060	パワーデバイス Power Devices	7MBP25RJ120	整流ダイオード Rectifier Diodes	CB803-03
	6MBP100RA120		7MBP25RU2A120		CB863-06
	6MBP100RTB060		7MBP25TEA120-50		CB863-12
	6MBP100RTJ060		7MBP300RA060		CB863-15
	6MBP100TEA060-50		7MBP50RA060		ERA81-004
	6MBP150RA060		7MBP50RA120		ERA82-004
	6MBP150RA120		7MBP50RJ120		ERA83-004
	6MBP150RTB060		7MBP50RTB060		ERA83-006
	6MBP150RTJ060		7MBP50RTJ060		ERA84-009
	6MBP150TEA060-50		7MBP50RU2A120		ERA85-009
	6MBP15RA120		7MBP50TEA060-50		ERA91-02
	6MBP200RA060		7MBP50TEA120-50		ERA92-02
	6MBP20RTA060		7MBP75RA060		ERB81-004
	6MBP25RA120		7MBP75RA120		ERB83-004
	6MBP25RJ120		7MBP75RJ120		ERB83-006
	6MBP25RU2A120		7MBP75RTB060		ERB84-009
	6MBP25TEA120-50		7MBP75RTJ060		ERB91-02
	6MBP300RA060		7MBP75RU2A120		ERB93-02
	6MBP50RA060		7MBP75TEA060-50		ERC81-004
	6MBP50RA120		7MBP75TEA120-50		ERC81-006
	6MBP50RJ120		7MBR10UF120		ERC81S-004
	6MBP50RTB060		7MBR15UF060		ERC84-009
	6MBP50RTJ060		7MBR15UF120		ERC91-02
	6MBP50RU2A120		7MBR20UF060		FD867-12
	6MBP50TEA060-50		7MBR30UF060		FD867-15
	6MBP50TEA120-50				FD868-12
	6MBP75RA060				FD868-15
	6MBP75RA120				SC802-04
	6MBP75RJ120				SC802-06
	6MBP75RTB060				SC802-09
	6MBP75RTJ060				SC902-2
	6MBP75RU2A120				SD832-03
	6MBP75TEA060-50				SD832-04
	6MBP75TEA120-50				SD833-03
	7MBP100RA060				SD833-04
	7MBP100RA120				SD833-06
	7MBP100RTB060				SD833-09
	7MBP100RTJ060				SD834-03
	7MBP100TEA060-50				SD834-04
	7MBP150RA060				SD862-04
	7MBP150RA120				SD863-04
	7MBP150RTB060				SD863-06
	7MBP150RTJ060				SD863-10
	7MBP150TEA060-50				SD882-02
	7MBP200RA060				SD883-02
	7MBP25RA120				SD883-04

廃型機種 / Discontinued products

- ・下記記載の機種は廃型機種です。
- ・新規設計には使用されないようお願いいたします。

- ・ Models listed below are for discontinued products only.
- ・ Do not use them for new designing

機種 Description	型式 Type number	機種 Description	型式 Type number	機種 Description	型式 Type number
パワーデバイス Power Devices	1MBI150NH-060	パワーデバイス Power Devices	6MBI35S-140	整流ダイオード Rectifier Diodes	FDLR20C20
	1MBI150NK-060		6MBI50S-060		KP823C03
	1MBI200N-120		6MBI50S-120		KP823C04
	1MBI200NH-060		6MBI50S-140		KP823C09
	1MBI200NK-060		6MBI75S-060		PA955C6R
	1MBI300N-120		6MBI75S-120		PG985C6R
	1MBI300NN-120		6MBI75S-140		TP858C12R
	1MBI300NP-120		6MBP15RH060-50		TP869C04R
	1MBI400N-120		6MBP20RH060-50		TS862C04R
	1MBI400NN-120		6MBP30RH060-50		TS906C3R
	1MBI400NP-120		7MBR100SB060		TS952C6R
	1MBI600NN-060		7MBR100SD060		TS955C6R
	1MBI600NP-060		7MBR10SA120		YA852C12R
	2MBI100N-060		7MBR10SA140		YA852C15R
	2MBI100N-120		7MBR10SC120		YA855C12R
	2MBI100NB-120		7MBR15SA120		YA855C15R
	2MBI100NC-120		7MBR15SA140		YA858C12R
	2MBI150N-060		7MBR15SC120		YA858C15R
	2MBI150N-120		7MBR20SC060		YA862C04R
	2MBI150NB-120		7MBR25SA120		YA869C04R
	2MBI150NC-060		7MBR25SA140		YA951S6R
	2MBI150NC-120		7MBR25SC120		YA952C6R
	2MBI200N-060		7MBR30SA060		YA952S6R
	2MBI200N-060-03		7MBR30SC060		YA955C6R
	2MBI200N-120		7MBR35SB120		YG801C09R
	2MBI200NB-120		7MBR35SB140		YG802C03R
	2MBI200NB-120-01		7MBR35SD120		YG802C09R
	2MBI300N-060		7MBR50SA060		YG803C04R
	2MBI300N-060-04		7MBR50SB060		YG811S09R
	2MBI300N-120		7MBR50SB120		YG831C03R
	2MBI300N-120-01		7MBR50SB140		YG831C04R
	2MBI300NB-060		7MBR50SC060		YG832C03R
	2MBI300NB-060-01		7MBR50SD120		YG832C04R
	2MBI400N-060		7MBR75SB060		YG835C03R
	2MBI400N-060-01		7MBR75SD060		YG835C04R
	2MBI50N-060				YG838C03R
	2MBI50N-120				YG852C12R
	2MBI600NT-060				YG852C15R
	2MBI75N-060				YG855C12R
	2MBI75N-120				YG855C15R
	4MBI75T-060				YG858C12R
	4MBI100T-060				YG858C15R
	4MBI150T-060				YG862C04R
	4MBI200T-060				YG864S06R
	1MBI600PX-120				YG869C04R
	1MBI600PX-140				YG881C02R
	2MBI100PC-140				YG882C02R
2MBI100SC-120		YG885C02R			
2MBI150PC-140		YG906C3R			
2MBI150SC-120		YG951S6R			
2MBI200PB-140		YG952C6R			
2MBI200S-120		YG952S6R			
2MBI300P-140		YG955C6R			
2MBI300S-120					
2MBI50P-140					
2MBI75P-140					
6MBI100S-060					
6MBI100S-120					
6MBI100S-140					
6MBI10S-120					
6MBI15S-120					
6MBI25S-120					
6MBI35S-120					
		集積回路 Integrated Circuits	FA3675F-H1		
			FA7709R-H1		
			FA7716R-H4		
			FA7723R-H4		
			FA7724R-H4		
			FA7724AR-H4		
			FA7728F-D1		
			FA7729R-H1		
			FA7730F-D1		
			FA7731F-D1		
			FA7743N-D1		
		IGBT ドライブ用 ハイブリッド IC	EXB840		
		Hybrid ICs for IGBT Drive	EXB841		
		IPS (インテリジェントパワースイッチ)	F5016H		
		IPS (Intelligent Power switch)	F5017H		
			F5021H		
			F5022		
			F5038H		
		整流ダイオード Rectifier Diodes	FDLA20C20		
			FDLA20C20		
			FDLH20C20		
			FDLP20C20		
				パワー MOSFET Power MOSFET	2SJ314-01L, S
					2SJ472-01L, S
					2SJ473-01L, S
					2SJ474-01L, S
					2SJ475-01
					2SJ476-01L, S
					2SJ477-01MR
					2SK2687-01
					2SK2688-01L, S

廃型機種 / Discontinued products

機種 Description	型式 Type number	機種 Description	型式 Type number
パワー MOSFET Power MOSFET	2SK2689-01MR	パワー MOSFET Power MOSFET	2SK3613-01
	2SK2690-01		2SK3644-01
	2SK2691-01R		2SK3645-01MR
	2SK2806-01		2SK3646-01L, S
	2SK2807-01L, S		2SK3647-01
	2SK2808-01MR		2SK3673-01MR
	2SK2809-01MR		2SK3674-01L, S
	2SK2890-01MR		2SK3675-01
	2SK2891-01		2SK3677-01MR
	2SK2892-01R		2SK3678-01
	2SK2893-01		2SK3679-01MR
	2SK2894-01R		2SK3690-01
	2SK2895-01		2SK3691-01MR
	2SK2896-01L, S		2SK3769-01MR
	2SK2897-01MR		2SK3770-01MR
	2SK2898-01		2SK3771-01MR
	2SK2899-01R		2SK3776-01
	2SK2900-01		2SK3777-01R
	2SK2901-01L, S		2SK3780-01
	2SK2902-01MR		2SK3781-01R
	2SK2903-01MR		2SK3788-01
	2SK2904-01		2SK3789-01R
	2SK2905-01R		2SK3870-01
	2SK2906-01		2SK3871-01MR
	2SK2907-01R		2SK3872-01L, S
	2SK3362-01		2SK3873-01
	2SK3363-01		2SK3874-01R
	2SK3364-01		2SK3875-01
	2SK3517-01		2SK3876-01R
	2SK3518-01MR		2SK3883-01
	2SK3529-01		2SK3884-01
	2SK3530-01MR		2SK3885-01
	2SK3531-01		2SK3913-01MR
	2SK3532-01MR		2SK3914-01
	2SK3533-01		2SK3915-01MR
	2SK3534-01MR		2SK3923-01
	2SK3549-01		2SK3924-01L, S
	2SK3550-01R		2SK3925-01
	2SK3586-01		2SK3926-01MR
	2SK3587-01MR		2SK3927-01L, S
	2SK3588-01L, S		2SK4005-01MR
	2SK3589-01		2SK4006-01L, S
	2SK3601-01		FMA18N25G
	2SK3605-01		

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