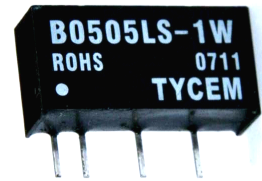


DESCRIPTION

The BxxxxLS-1W series of DC/DC Converters is particularly suited to isolating and/or converting DC power rails. The galvanic isolation allows the device to be configured to provide an isolated negative rail in systems where only positive rails exist. The wide temperature range guarantees startup from -40°C and full 1 watt output at 85°C .



FEATURES

✧ RoHS compliant	✧ 5V , 12V & 24V input
✧ Single isolated output	✧ 5V, 9V, 12V & 15V output
✧ 1kVDC isolation	✧ No heatsink required
✧ Efficiency up to 85%	✧ Internal SMD construction
✧ Wide temperature performance at full 1 watt load, -40°C to 85°C	✧ Fully encapsulated with toroidal magnetics
✧ Power density $1.44\text{W}/\text{cm}^3$	✧ No external components required
✧ UL 94V-0 package material	✧ MTTF up to 2327 khours
✧ Footprint from 1.46cm^2	✧ Custom solutions available
✧ Industry standard pinout	✧ PCB mounting

SELECTION GUIDE

Order Code	Input Voltage	Output Voltage	Output Current	Input Current (Rated Load)	Efficiency	Isolation Capacitance	MTTF ¹	Package Style
	(V)	(V)	(mA)	(mA)	%	pF	kHrs	
B0505LS-1W	5	5	200	289	69	30	2414	SIP
B0509LS-1W	5	9	111	260	77	37	1173	
B0512LS-1W	5	12	83	256	78	33	663	
B0515LS-1W	5	15	66	250	80	40	360	
B0524LS-1W	5	24	42	248	80	48	290	
B1205LS-1W	12	5	200	120	69	33	620	
B1209LS-1W	12	9	111	115	74	48	488	
B1212LS-1W	12	12	83	110	76	55	360	
B1215LS-1W	12	15	67	110	76	56	111	
B2405LS-1W	24	5	200	60	72	40	201	
B2409LS-1W	24	9	111	56	75	59	185	
B2412LS-1W	24	12	83	52	77	78	163	
B2415LS-1W	24	15	67	52	78	79	136	
B2424LS-1W	24	24	41	50	81	78	131	

When operated with additional external load capacitance the rise time of the input voltage will determine the maximum external capacitance value for guaranteed start up. The slower the rise time of the input voltage the greater the maximum value of the additional external capacitance for reliable start up.

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage Range	Continuous operation, 5V input types	4.5	5	5.5	V
	Continuous operation, 12V input types	10.8	12	13.2	
	Continuous operation, 24V input types	21.6	24	26.4	

OUTPUT CHARACTERISTICS

Parameter		Conditions	Min.	Typ.	Max.	Units
Rated Power ²	5V & 12V input types	TA=-40°C to 85°C			1	W
	24V input types	TA=0°C to 70°C				
Voltage Set Point Accuracy		See tolerance envelope				
Line regulation		High VIN to low VIN		1	1.2	%/%
Load Regulation		10% load to rated load, 5V output types			15	%
		10% load to rated load, other output types			10	
Ripple and Noise	5V & 12V Input	BW=DC to 20MHz, 5V output types		85	110	mV p-p
		BW=DC to 20MHz, 9V output types		60	75	
		BW=DC to 20MHz, 12V output types		50	65	
		BW=DC to 20MHz, 15V output types		40	55	
	24V Input	BW=DC to 20MHz, All output types			150	

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection ³				1 second
Lead temperature 1.5mm from case for 10 seconds				300°C
Internal power dissipation				450mW
Input voltage VIN, B05 types				7V
Input voltage VIN, B12 types				15V
Input voltage VIN, B24 types				28V

GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Type	Max.	Units
Switching frequency	All input types		100		kHz

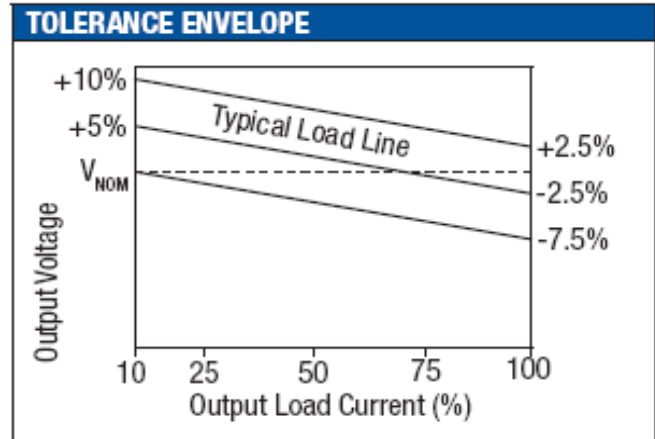
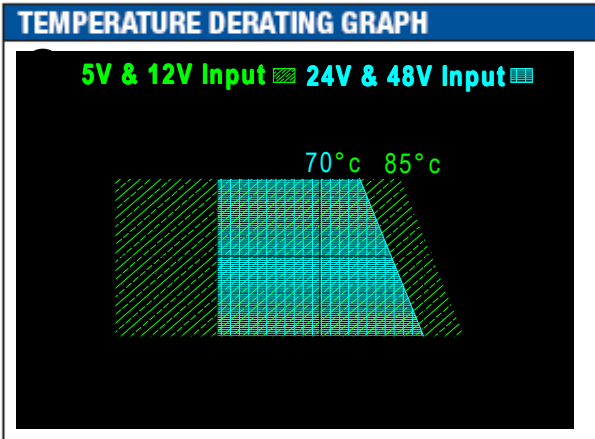
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Type	Max.	Units
Specification	5V & 12V input types	-40		85	°C
	24V input types	0		70	
Storage	All	-50		150	
Case Temperature above ambient	5V output types			41	
	All other output types			32	
Cooling	Free air convection				

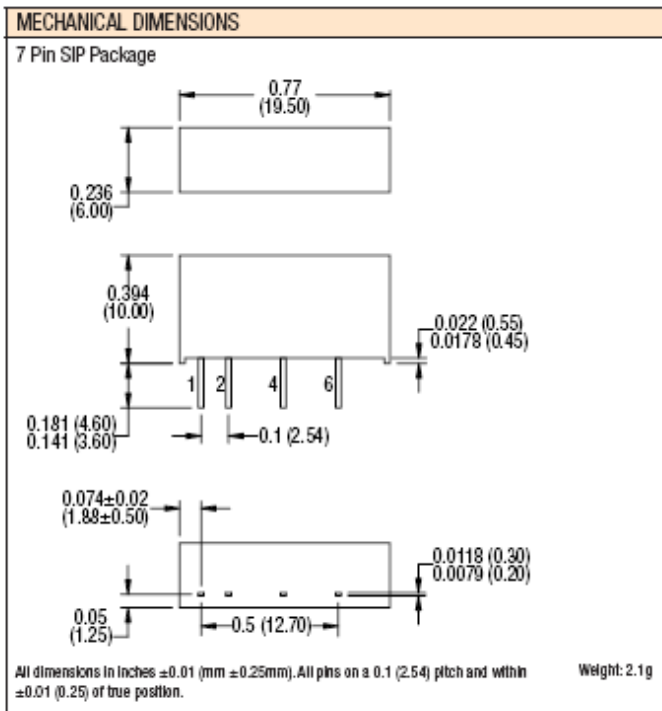
ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Type	Max.	Units
Isolation test voltage	Flash tested for 1 second	1000			VDC
Resistance	Viso= 1000VDC		10		GΩ

1. Calculated using MIL-HDBK-217F with nominal input voltage at full load.
 2. See derating graph
 3. Supply voltage must be discontinued at the end of the short circuit duration.
- All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

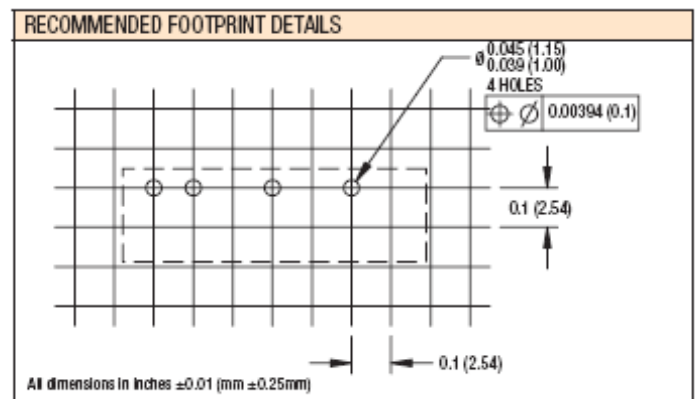


PACKAGE SPECIFICATIONS



PIN CONNECTIONS - 7 PIN SIP

Pin	Function
1	+V _{IN}
2	-V _{IN}
4	-V _{OUT}
6	+V _{OUT}



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