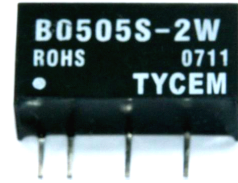


DESCRIPTION

The BxxxxS-2W 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 2 watt output at 85°C .

**FEATURES**

- | | |
|---|--|
| ✧ RoHS compliant | ✧ 5V & 12V 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 2 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	
B0505S-2W	5	5	400	513	78	19	2327	SIP
B0509S-2W	5	9	222	492	81	27	1393	
B0512S-2W	5	12	167	479	84	32	832	
B0515S-2W	5	15	133	481	83	27	481	
B1205S-2W	12	5	400	207	81	28	716	
B1209S-2W	12	9	222	198	84	42	593	
B1212S-2W	12	12	167	197	85	46	461	
B1215S-2W	12	15	133	197	85	54	328	

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	
Reflected ripple current	5V input types		38		mA p-p
	12V input types		33		

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power ²	TA=-40°C to 85°C			2	W
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		7.0	8.5	%
	10% load to rated load, 9V output types		4.5	5.2	
	10% load to rated load, 12V output types		4.5	5.5	
	10% load to rated load, 15V output types		3.7	8.5	
	10% load to rated load, 5V output types		7.0	8.5	
	10% load to rated load, 9V output types		4.5	5.2	
Ripple and Noise	BL0505S-2W, BW=DC to 20MHz		96	200	mV p-p
	B0509S-2W, BW=DC to 20MHz		67		
	B0512S-2W, BW=DC to 20MHz		59		
	B0515S-2W, BW=DC to 20MHz		53		
	B1205S-2W, BW=DC to 20MHz		76		
	B1209S-2W, BW=DC to 20MHz		63		
	B1212S-2W, BW=DC to 20MHz		53		
	B1215S-2W, BW=DC to 20MHz		45		

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

GENERAL CHARACTERISTICS

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

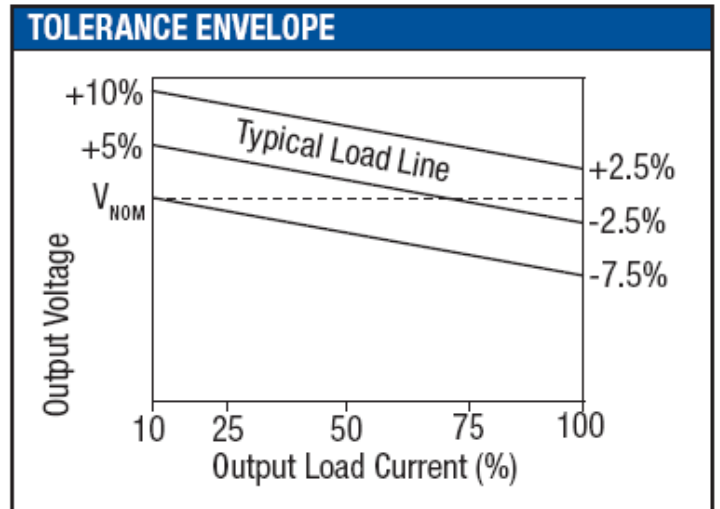
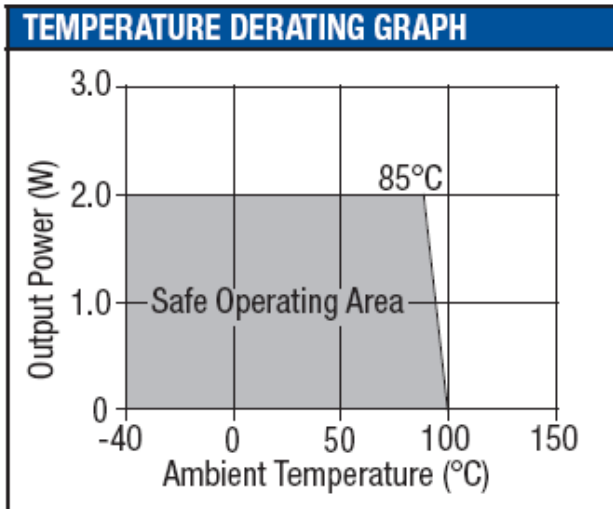
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Type	Max.	Units
Specification	5V & 12V input types	-40		85	°C
Storage	All	-50		150	
Case Temperature above ambient	5V output types			45	
	All other output types			36	
Cooling	Free air convection				

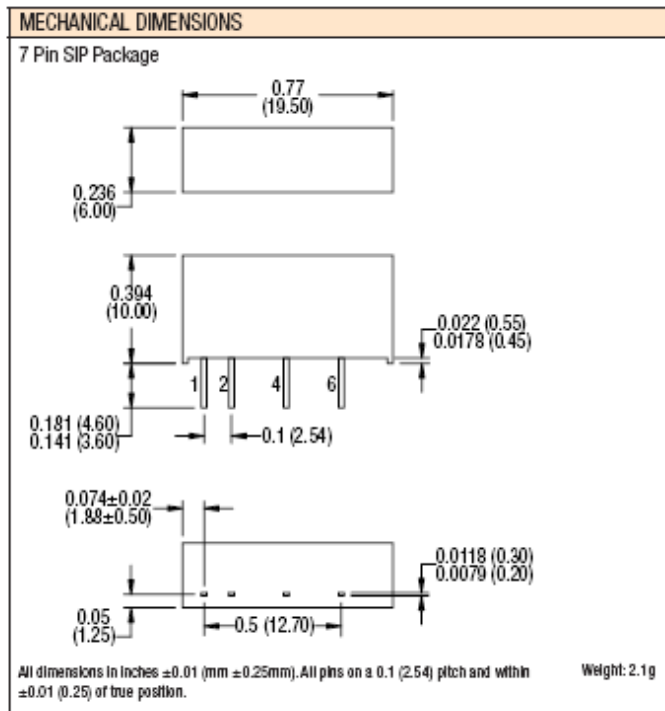
ISOLATION CHARACTERISTICS

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.

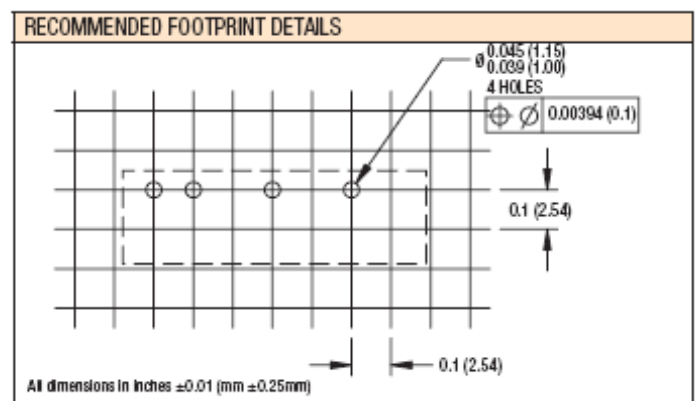


PACKAGE SPECIFICATIONS



PIN CONNECTIONS - 7 PIN SIP

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



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