

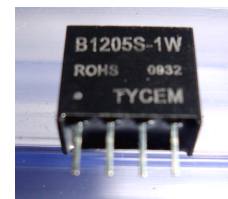
ISOLATED UNREGULATED DUAL OUTPUT DC/DC CONVERTER

MICRODC

BxxxxS-1W SERIES

DESCRIPTION

The BxxxxS-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 . For lower ripple, refer to output ripple reduction section.



FEATURES

- | | |
|---|--|
| ✧ RoHS compliant | ✧ 5V, 12V, 24V & 48V input |
| ✧ Single isolated output | ✧ 5V, 9V, 12V and 15V output |
| ✧ 1kVDC isolation | ✧ No heatsink required |
| ✧ Efficiency up to 80% | ✧ Internal SMD construction |
| ✧ Wide temperature performance at full 1 watt load, -40°C to 85°C | ✧ Fully encapsulated with toroidal magnetics |
| ✧ Power density 1.53W/cm ³ | ✧ No external components required |
| ✧ UL 94V-0 package material | ✧ MTTF up to 2.4 million hours |
| ✧ Footprint from 0.69cm 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	
B0503S-1W	5	3.3	303	278	72	40	300	SIP
B0505S-1W	5	5	200	289	70	48	290	
B0509S-1W	5	9	111	260	77	37	1173	
B0512S-1W	5	12	83	256	78	33	633	
B0515S-1W	5	15	66	250	80	40	360	
B0524S-1W	5	24	42	248	80	48	290	
B1205S-1W	12	5	200	120	69	33	620	
B1209S-1W	12	9	111	115	74	48	488	
B1212S-1W	12	12	83	110	76	55	360	
B1215S-1W	12	15	66	115	72	48	488	
B2405S-1W	24	5	200	60	70	40	201	
B2409S-1W	24	9	111	56	75	59	185	
B2412S-1W	24	12	83	52	80	78	163	
B2415S-1W	24	15	66	52	80	79	136	
B4805S-1W	48	5	200	30	70	32	213	
B4809S-1W	48	9	111	28	75	50	194	
B4812S-1W	48	12	83	26	80	76	164	
B4815S-1W	48	15	66	26	80	75	140	

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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	
	Continuous operation, 48V input types	43.2	48	52.8	

OUTPUT CHARACTERISTICS

Parameter		Conditions	Min.	Typ.	Max.	Units
Rated Power ²	5V & 12V input types	TA=-40°C to 85°C			1	W
	24V & 12V input types	TA=-40°C to 85°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 & 48V 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, A05 types			7V
Input voltage VIN, A12 types			15V
Input voltage VIN, A24 types			28V
Input voltage VIN, A48 types			54V

ISOLATION CHARACTERISTICS

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

TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Type	Max.	Units
Specification	5V & 12V input types	-40		85	°C

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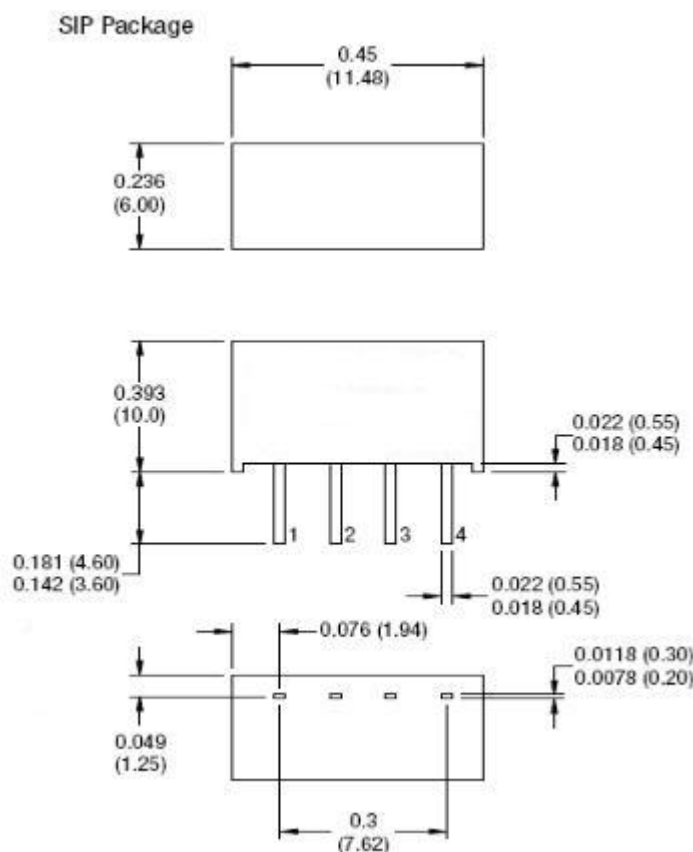
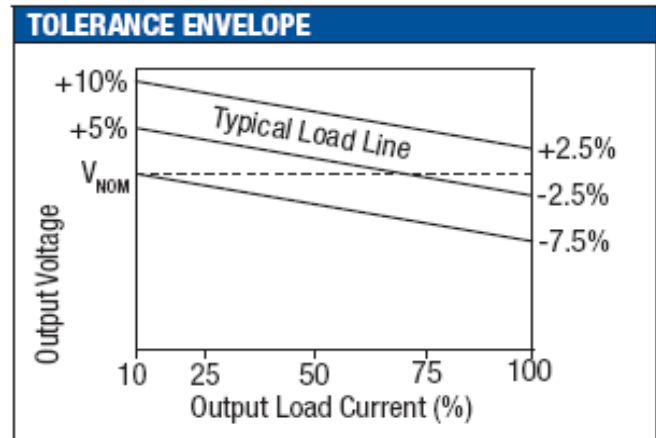
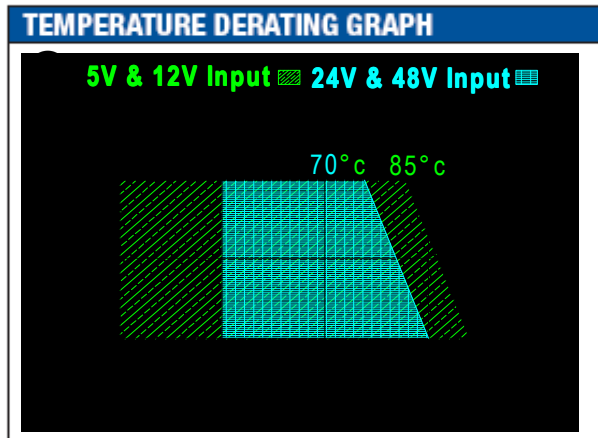
	24V & 48V input types	0		70	
Storage	All	-50		150	
Case Temperature above ambient	5V output types			41	
	All other output types			32	
Cooling	Free air convection				

GENERAL CHARACTERISTICS

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

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.

**PIN CONNECTIONS - 4 PIN SIP**

Pin	Function
1	-VIN
2	+VIN
3	-VOUT
4	+VOUT

PACKAGE SPECIFICATIONS

Guangzhou Tycem Electronics Limited

Web: www.tycem.com

Tel: + 86 20 81632207/81696730

Email: support@Tycem.com

Fax: + 86 20 81576282

All dimensions in inches ± 0.01 .

All pins on a 0.1 pitch and within 0.01 of true position.