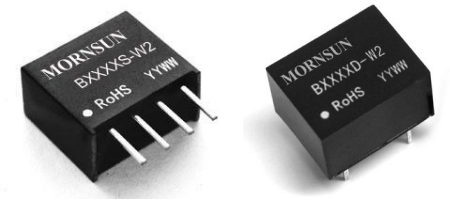
MORNSUN®

B_S(D)-W2 Series

0.25W, FIXED INPUT, ISOLATED & UNREGULATED SINGLE OUTPUT DC-DC CONVERTER



RoHS

FEATURES

- SIP/DIP Package
- 1KVDC Isolation
- Temperature Range: -40°C ~ +85°C
- No Heatsink Required
- Internal SMD Construction
- No External Component Required
- Industry Standard Pinout
- RoHS Compliance

PRODUCT PROGRAM

Part Number	Input		Output			Efficiency (%, Typ)
	Voltage (VDC)		Voltage (VDC)	Current (mA)		
	Nominal	Range		Max.	Min.	
B0503S-W2	5	4.5-5.5	3.3	76	8	64
B0505S/D-W2			5	50	5	64
B1505S-W2	15	13.5-16.5	5	50	5	60

COMMON SPECIFICATIONS

Item	Test conditions	Min.	Typ.	Max.	Units
Storage humidity				95	%
Operating temperature		-40		85	°C
Storage temperature		-55		125	
Temp. rise at full load			15	25	
Lead temperature	1.5mm from case for 10 seconds			300	
Cooling		Free air convection			
Case material		Plastic(UL94-V0)			
Short circuit protection*				1	s
MTBF		3500			k hours
Weight	B_S-W2 Series		1.2		g
	B_D-W2 Series		1.8		

*Supply voltage must be discontinued at the end of short circuit duration.

ISOLATION SPECIFICATIONS

Item	Test conditions	Min.	Typ.	Max.	Units
Isolation voltage	Tested for 1 minute and 1mA max	1000			VDC
Isolation resistance	Test at 500VDC	1000			MΩ
Isolation capacitance			85		pF

APPLICATIONS

The B_S-W2/B_D-W2 series are specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

1) Where the voltage of the input power supply is fixed (Voltage variation ≤ ±10%);
2) Where isolation is necessary between input and output (Isolation voltage ≤1000VDC);
3) Where the regulation of the output voltage and the output ripple noise are not demanding.

Such as: purely digital circuits, ordinary low frequency analog circuits, and IGBT power device driving circuits.

MODEL SELECTION

B0505S-W2

- Rated Power
- Package Style
- Output Voltage
- Input Voltage
- Product Series

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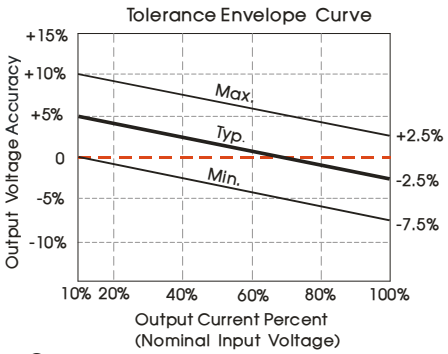
Http://www.mornsun-power.com

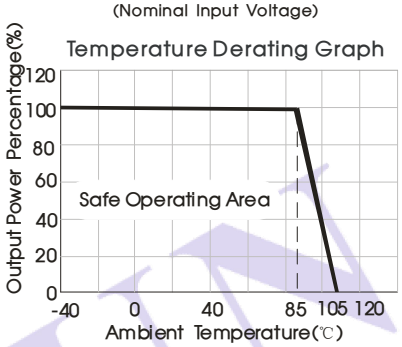
OUTPUT SPECIFICATIONS

Item	Test conditions	Min.	Typ.	Max.	Units
Output power				0.25	W
Line regulation	For Vin change of ±1%(3.3V output)			±1.5	--
	For Vin change of ±1%(others output)			±1.2	
Load regulation	10% to 100% load(3.3V output)		15	20	%
	10% to 100% load (5V output)		12.8	15	
Output voltage accuracy		See tolerance envelope graph			
Temperature drift	100% full load			±0.03	%/°C
Ripple & Noise*	20MHz Bandwidth		50	75	mVp-p
Switching frequency	Full load, nominal input		110		kHz

*Test ripple and noise by "parallel cable" method. See detailed operation instructions at Testing of Power Converter section, application notes.

TYPICAL CHARACTERISTICS





APPLICATION NOTE

1) Requirement on output load

In order to ensure the converter can work reliably with high efficiency, the minimum load should not less than 10% rated load when it is used. If the needed power is indeed small, please parallel a resistor on t the output side (The sum of the efficient power and resistor consumption power is not less than 10%).

2) Recommended circuit

If you want to further decrease the input/output ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter, see (Figure 1).

It should also be noted that the inductance and the frequency of the "LC" filtering network should be staggered with the DC/DC frequency to avoid mutual interference. However, the capacitance of the output filter capacitor must be proper. If the capacitance is too big, a startup problem might arise. It's not recommended to connect any external capacitor in the application field.

3) Output Voltage Regulation and Over-voltage Protection Circuit

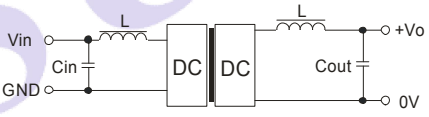
The simplest device for output voltage regulation, over-voltage and over-current protection is a linear voltage regulator with overheat protection that is connected to the input or output end in series (Figure 2).

4) Overload Protection

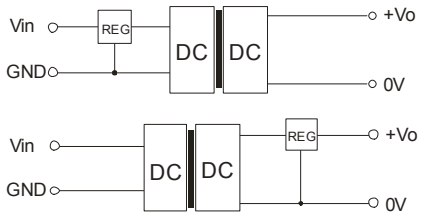
Under normal operating conditions, the output circuit of these products has no protection against overload. The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit.

5) No parallel connection or plug and play

RECOMMENDED CIRCUIT



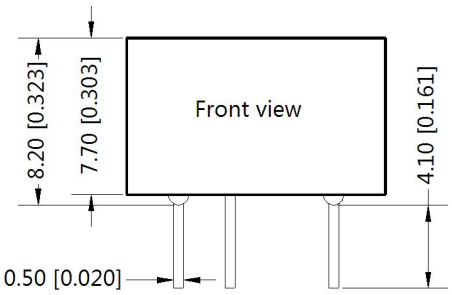
(Figure 1)

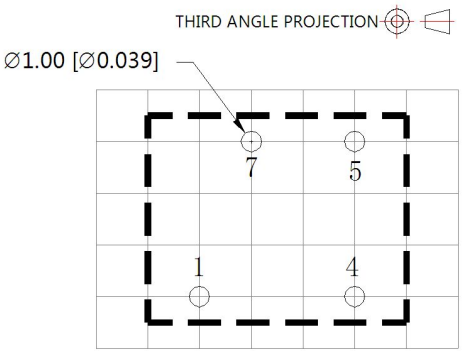


(Figure 2)

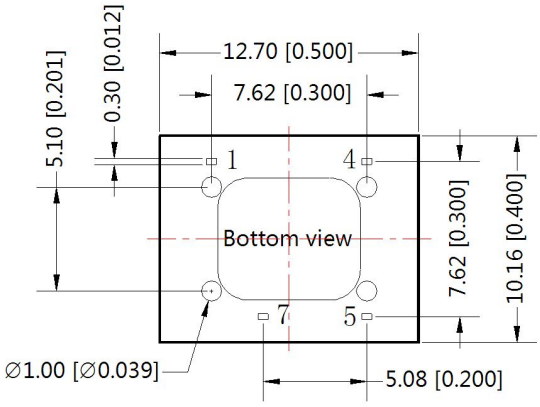
OUTLINE DIMENSIONS & PIN CONNECTIONS

B_D-W2





Note:Grid 2.54*2.54mm

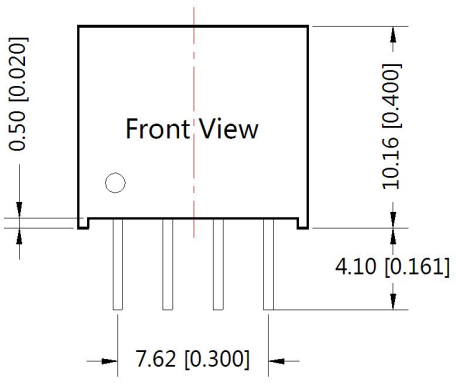


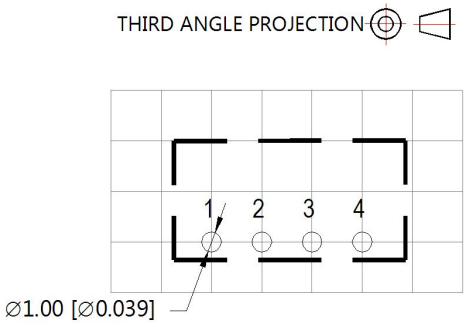
Pin-Out	
Pin	Function
1	GND
4	Vin
5	+Vo
7	0V

Note:
Unit :mm[inch]
Pin section tolerances:±0.10[±0.004]
General tolerances:±0.25[±0.010]

OUTLINE DIMENSIONS & PIN CONNECTIONS

B_S-W2





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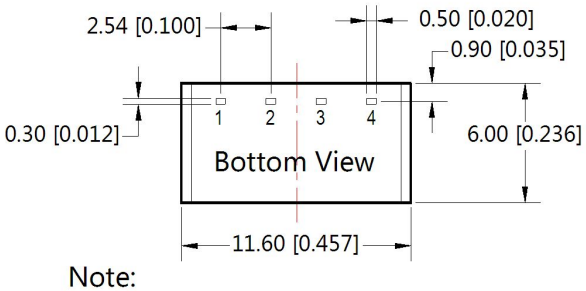

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Note:

1. Packing Information please refer to 'Product Packing Information'. Packing bag number: 58200003;
2. Operation under minimum load will not damage the converter; However, they may not meet all specification listed, and that will reduce the life of product.
3. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
4. Only typical models listed, other models may be different, please contact our technical person for more details.
5. In this datasheet, all the test methods of indications are based on corporate standards.