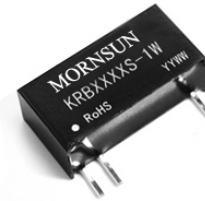


KRB_S-1W Series

**1W, WIDE INPUT, REGULATED & NON-ISOLATED
SINGLE OUTPUT DC-DC CONVERTER**



Patent Protection RoHS

FEATURES

- Miniature SIP Package
- High Efficiency
- Temperature Range:-20°C ~ +71°C
- UL94-V0 Package
- No External Component Required
- No Heatsink Required
- Industry Standard Pinout
- MTBF>1,000,000 hours

APPLICATIONS

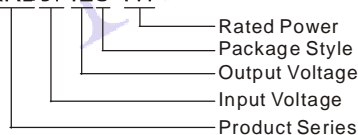
The KRB_S-1W series are specially designed for applications where a wide range input voltage power supplies are unnecessary isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is wide range;
- 2) Where isolation is unnecessary between input and output;
- 3) Where the regulation of the output voltage and the output ripple/noise are not demanding.

MODEL SELECTION

KRB0712S-1W



PRODUCT PROGRAM

Part Number	Input			Output			Efficiency (% , Typ.)
	Voltage (VDC)			Voltage (VDC)	Current (mA)		
	Nominal	Range	Max.*		Max.	Min.	
KRB0305S-1W	3.3	2.7-5.4	5.4	5	200	20	80
KRB0309S-1W				9	110	11	81
KRB0312S-1W				12	83	9	82
KRB0512S-1W	5	3.6-7.2	7.2	12	83	9	83
KRB0524S-1W				24	42	5	80
KRB0703S-1W	7.2	5-8	10	3.3	300	30	83
KRB0705S-1W				5	200	20	84
KRB0712S-1W	7.2	5-8	10	12	83	9	85
KRB0724S-1W	7.2	6.4-8.4	10	24	42	5	82
KRB1203S-1W	12	9-14	14	3.3	300	30	80
KRB1205S-1W	12	9-14	14	5	200	20	81

Note: Models listed with strike-through text have been officially discontinued.
*If Input voltage above specified may cause permanent damage to the device.

OUTPUT SPECIFICATIONS

Item	Test conditions	Min.	Typ.	Max.	Units
Output power	See above products program	0.1		1	W
Output Voltage accuracy	Refer to recommended circuit		±1	±3	%
Load regulation	From 10% to 100% load		±0.5	±0.75	
Line regulation	Input voltage from low to high		±0.2	±0.5	
Temperature drift (Vout)	Refer to recommended circuit			0.02	%/°C
Ripple+Noise*	20MHZ Bandwidth		80	150	mVp-p
Switching frequency	100% load, nominal input voltage	100		500	kHz

*Test ripple and noise by "parallel cable" method. See detailed operation instructions at Testing of Power Converter section, application notes.
Note: KRB0305S-1W Output Voltage Accuracy: ±5%(max).

MORNSUN Science & Technology Co.,Ltd.

Address: No. 5, Kehui St. 1, Kehui development center, Science Ave., Guangzhou Science City, Luogang district, Guangzhou, P.R.China.

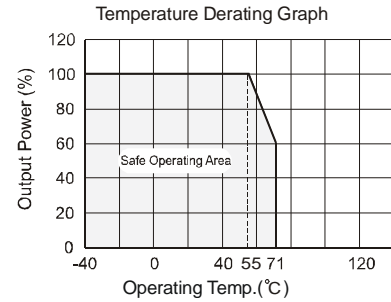
Tel: 86-20-38601850

Fax:86-20-38601272

[Http://www.mornsun-power.com](http://www.mornsun-power.com)

COMMON SPECIFICATIONS					
Item	Test Conditions	Min	Typ	Max	Units
Storage humidity				95	%
Storage temperature		-55		125	°C
Operating Temp.	Power derating (above 55°C)	-20		71	
Lead temperature	1.5mm from case for 10 seconds			300	
Temp. rise at full load			15	25	
Cooling		Free air convection			
Case material		Plastic(UL94-V0)			
MTBF	25°C(MIL-HDBK-217F)	1000			k hours
Weight			3		g

TYPICAL CHARACTERISTICS



APPLICATION NOTE

1) Requirement on Output Load

To ensure this module operate efficiently and reliably, a minimum load is specified for this kind of DC/DC converter in addition to a maximum load (namely full load). During operation, make sure the specified range of input voltage is not exceeded, the minimum output load is **not less than 10% Of the full load**. If the actual load is less below the specified minimum load, the output ripple of this type of DC/DC converter may increase drastically.

If the actual output power from the load in your circuit is very small, please connect a resistor with proper resistance at the output end to in parallel to increase the load, or use our company's other products with a lower rated output power.

2) Recommended Circuit

This Series have been tested according to the following recommended testing circuit before leaving factory (Figure 1).

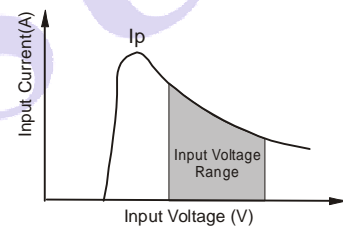
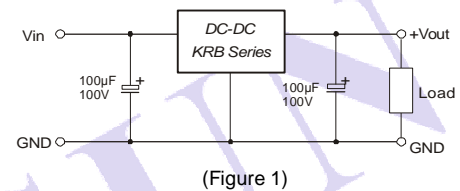
If you want to further decrease the input/output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance should not be too high(Table 1).

3) Input Current

When it is used in unregulated power supply, be sure that the fluctuating range of the power supply and the rippled voltage do not exceed the module standard. Input current of power supply should afford the startup current of this kind of DC/DC module (Figure 2).

4) No parallel connection or plug and play

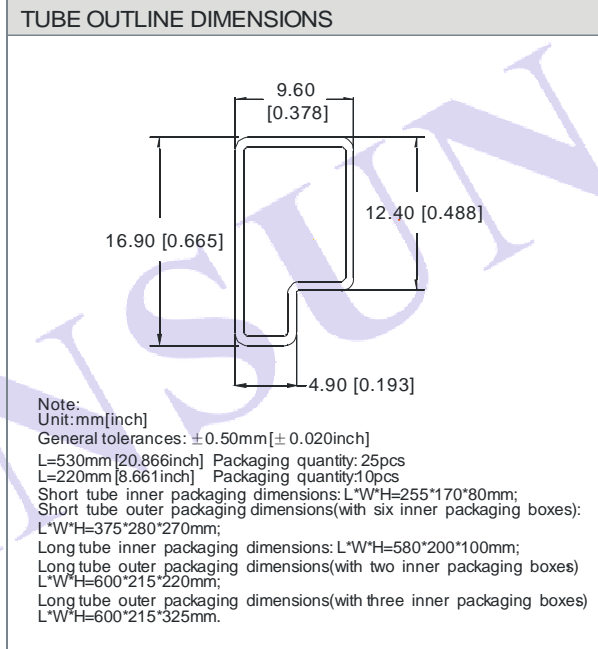
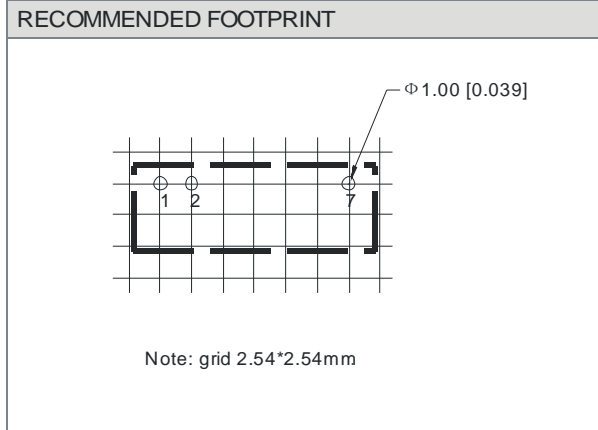
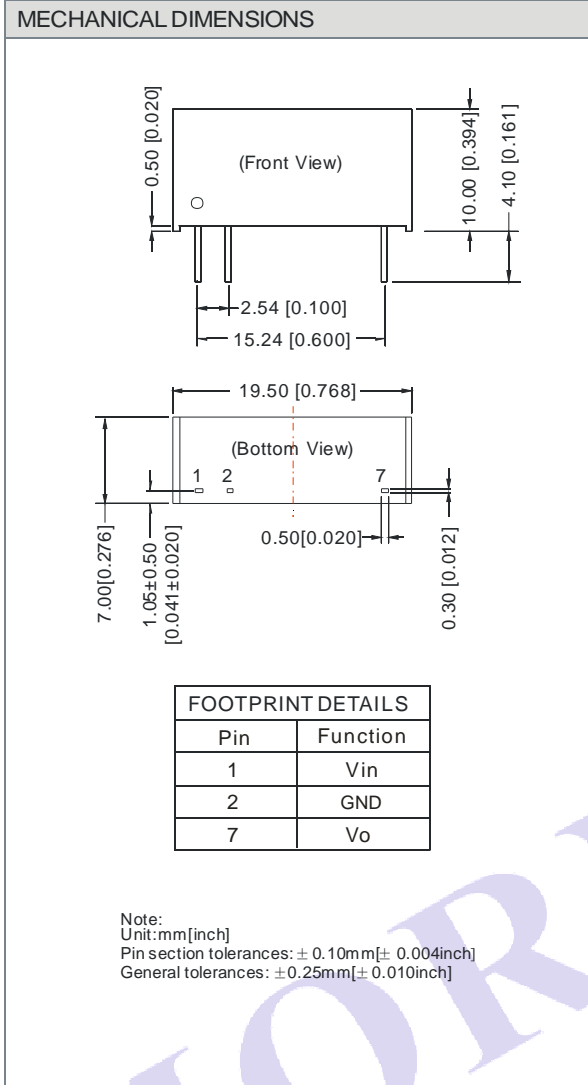
RECOMMENDED CIRCUIT



External Capacitor Table (Table 1)

Cin	Cout (Normal Temp.)	Cout (-20°C ~+71°C)
100µF	100µF (Electrolytic Capacitor)	47µF (Tantalum Capacitor)

OUTLINE DIMENSIONS & FOOTPRINT DETAILS



Note:

1. Operation under minimum load will not damage the converter; However, they may not meet all specification listed.
2. All specifications measured at $T_a=25^\circ\text{C}$, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
3. Only typical models listed, other models may be different, please contact our technical person for more details.
4. In this datasheet, all the test methods of indications are based on corporate standards.