

KRB_S-1W Series

*WIDE INPUT REGULATED & NON-ISOLATED
1W OUTPUT SINGLE OUTPUT
MINIATURE SIP PACKAGE*

FEATURES

- Wide (2:1) Input Range
- Efficiency to 85%
- Operating Temperature: -20~+71°C
- Single Output
- UL94-V0 Package
- No Heat sink Required
- Industry Standard Pin out
- MTBF>1,000,000 hours
- Custom Service Available

APPLICATIONS

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

These products apply to:

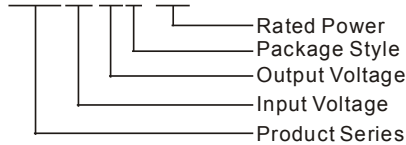
- 1) Where the voltage of the input power supply is wide range (voltage range: 2:1);
- 2) Where the regulation of the output voltage and the output ripple noise are demanding.

These products don't apply to:

- 1) Where the input voltage is required to be more than 2:1;
- 2) Where the isolation voltage between input and output is required;

MODEL SELECTION

KRB0712S-1W



PRODUCT PROGRAM

Part Number	Input			Output			Efficiency (% Typ)	Package Style
	Voltage (VDC)			Voltage (VDC)	Current (mA)			
	Nominal	Range	Max*		Max	Min		
KRB0305S-1W	3.3	2.7~5.4VDC	5.4	5	200	22	79	SIP
KRB0309S-1W	3.3	2.7~5.4VDC	5.4	9	110	11	82	SIP
KRB0312S-1W	3.3	2.7~5.4VDC	5.4	12	83	9	84	SIP
KRB0505S-1W	5	3.6~7.2VDC	7.2	5	200	20	85	SIP
KRB0512S-1W	5	3.6~7.2VDC	7.2	12	83	9	87	SIP
KRB0515S-1W	5	3.6~7.2VDC	7.2	15	67	7	88	SIP
KRB0524S-1W	5	3.6~7.2VDC	7.2	24	42	5	85	SIP
KRB0705S-1W	7.2	6.4~8.4VDC	10	5	200	20	84	SIP
KRB0709S-1W	7.2	6.4~8.4VDC	10	9	110	11	82	SIP
KRB0712S-1W	7.2	6.4~8.4VDC	10	12	83	9	85	SIP
KRB0715S-1W	7.2	6.4~8.4VDC	10	15	67	7	86	SIP
KRB0724S-1W	7.2	6.4~8.4VDC	10	24	42	5	85	SIP
KRB1203S-1W	12	9~12.5VDC	12.5	3	300	30	82	SIP
KRB1205S-1W	12	9~12.5VDC	12.5	5	200	20	86	SIP

If Input voltage above specified may cause permanent damage to the device.

ISOLATION SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Isolation voltage	Flash tested for 60 seconds	0			VDC
Isolation resistance	Test at 500VDC	0			MΩ

OUTPUT SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
1W output power	See below products program	0.1		1	W
No load current			1	5	mA
Output Voltage accuracy	Refer to recommended circuit			±3	%
Load regulation	From 25% to 100% load			±0.2	
Line regulation	Input Voltage From Low to High			±0.2	
Temperature drift (Vout)	Refer to recommended circuit			0.02	%/°C
Ripple	20Hz-300KHz bandwidth		100	300	mVp-p
Switching frequency	100% load, nominal input voltage	80		400	KHz

Note:

1. All specifications measured at $T_A=25^\circ\text{C}$, humidity<75%, nominal input voltage and rated output load unless otherwise specified.

2. See below recommended circuits for more details.



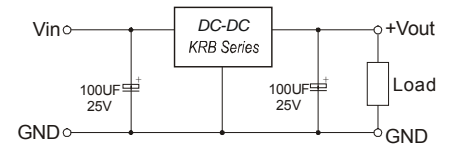
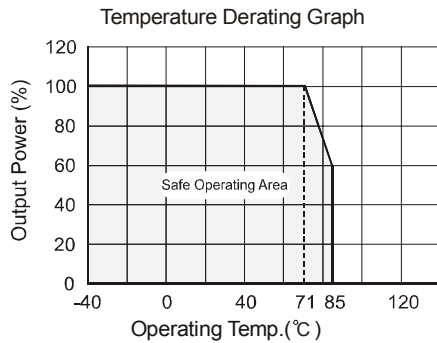
MORNSUN Science & Technology Ltd.

Address: 8th floor 8th building, Huangzhou Industrial District, Guangzhou, China
Tel: 86-20-38601850
Fax: 86-20-38601272
Http://www.mornsun-power.com

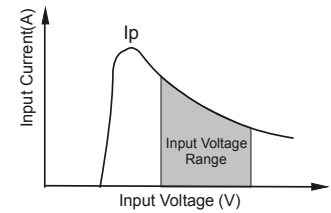
COMMON SPECIFICATION

Output Short Circuit Protection	Continuous
Temperature Rise at Full Load	30°C (TYP)
Cooling	Free Air Convection
No-load Power Consumption	500mW (typical)
Operating Temperature Range	-20°C~+71°C
Storage Temperature Range	-55°C~+125°C
Lead Temperature***	300°C Max.
Storage Humidity Range	≤ 95%
Case Material	Plastic (UL94-V0)
MTBF	>1,000,000 hours
***Lead Temperature 1.5mm from case for 10 seconds.	

TYPICAL CHARACTERISTICS



(Figure 1)



(Figure 2)

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. (See figure 2)

External Capacitor

Although this series of DC/DC converter can work without external capacitor, in order to keep an optimum performance, however, it needs external capacitor. (See Table 1)

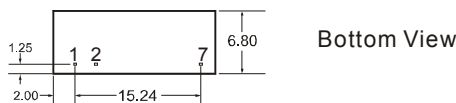
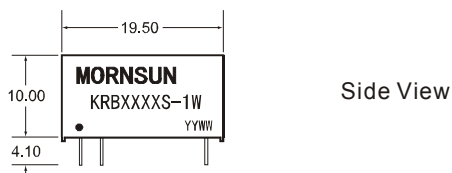
The products cannot be used in parallel.

FOOTPRINT DETAILS

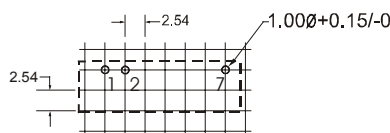
Pin	Function
1	Vin
2	COM
7	Vo

OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT

KRBXXXXS-1W Package



KRBXXXXS-1W Footprint



External Capacitor Table (See Table 1)

Vin	C _{in}	C _{out} (0+70°C)	C _{out} (-40+85°C)
5V & 12V	100uF	100uF (electrolytic capacitor)	47uF (tantalum capacitor)
24V & 48V	10uF		

Note: All Pins on a 2.54mm pitch; All Pin diameters are 0.50 mm (Tolerance:±0.25);

APPLICATION NOTE

Recommended Circuit

This Series have been tested according to the following recommended testing circuit before leaving factory. This series allowed to be tested and used under no load. 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. (See table 1).

Input Current

When it is used in unregulated power supply, be sure that the fluctuating range of the power supply



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