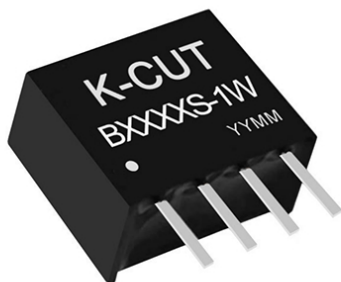


DC/DC CONVERTER

B_S-1W Serie

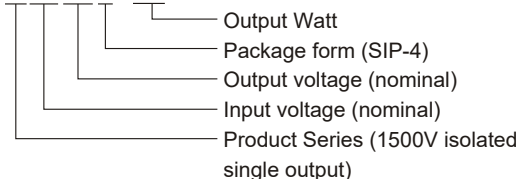
K-CUT

1W Constant Voltage Input, Isolated Unregulated Single Output.



Product Naming Rules

BXXXXS-1W



Product Feature

- SIP-4, industry standard pinout
- Low quiescent current and high conversion efficiency
- Low ripple factor and low noise
- Built-in soft start technology
- 1500VDC isolated voltage
- Working temperature range -40°C~ +85°C
- Special specifications can be designed

Application Range

Product naming rules B_S-1W series products are specially applied in distributed power systems need to produce. Designed for applications with a power supply isolated from the input power.

The product Suitable for:

- 1) The variation range of input power supply voltage is within 10%;
- 2) Isolation is required between input and output (isolation voltage 1500VDC);
- 3) the output voltage stability and output ripple noise requirements are not high.

Product Model list

The following parameters were tested at room temperature +25°C at nominal input voltage.

MODEL	Input Voltage Range VDC (Nominal)	Output Voltage (VDC)	Output Current(mA) Max/Min	Maximum Capacitive Load (UF)	Efficiency (%,Min/Typ) @Max
B0303S-1W	2.97~3.63V (3.3V Nominal)	3.3	303/30.3	200	68/72
B0305S-1W		5	200/20	200	74/78
B0309S-1W		9	112/11.2	200	74/78
B0312S-1W		12	84/8.4	200	74/78
B0315S-1W		15	67/6.7	200	74/78
B0324S-1W		24	42/4.2	200	74/78
B0503S-1W	4.5~5.5V (3.3V Nominal)	3.3	303/30.3	200	70/74
B0505S-1W		5	200/20	200	76/80
B0509S-1W		9	112/11.2	200	76/80
B0512S-1W		12	84/8.4	200	76/80
B0515S-1W		15	67/6.7	200	76/80
B0524S-1W		24	42/4.2	200	76/80
B0903S-1W	8.1~9.9V (3.3V Nominal)	3.3	303/30.3	200	72/76
B0905S-1W		5	200/20	200	76/80
B0909S-1W		9	112/11.2	200	76/80
B0912S-1W		12	84/8.4	200	76/80
B0915S-1W		15	67/6.7	200	76/80
B0924S-1W		24	42/4.2	200	76/80

MODEL	Input Voltage Range VDC (Nominal)		Output Current(mA) Max/Min	Maximum Capacitive Load (UF)	Efficiency (%,Min/Typ) @Max
B1203S-1W	10.8~13.2V (3.3V Nominal)	3.3	303/30.3	200	72/76
B1205S-1W		5	200/20	200	76/80
B1209S-1W		9	112/11.2	200	76/80
B1212S-1W		12	84/8.4	200	76/80
B1215S-1W		15	67/6.7	200	76/80
B1224S-1W		24	42/4.2	200	76/80
B1503S-1W	13.5~16.5V (3.3V Nominal)	3.3	303/30.3	200	72/76
B1505S-1W		5	200/20	200	76/80
B1509S-1W		9	112/11.2	200	76/80
B1512S-1W		12	84/8.4	200	76/80
B1515S-1W		15	67/6.7	200	76/80
B1524S-1W		24	42/4.2	200	76/80
B2403S-1W	21.6~26.4V (3.3V Nominal)	3.3	303/30.3	200	70/74
B2405S-1W		5	200/20	200	76/80
B2409S-1W		9	112/11.2	200	76/80
B2412S-1W		12	84/8.4	200	76/80
B2415S-1W		15	67/6.7	200	76/80
B2424S-1W		24	42/4.2	200	76/80
BXXXXS-1W	Special specifications can be designed according to customer requirements				
The no-load power consumption of the preceding psus is about 10% of the rated output power. 1.The nominal output voltage refers to the input voltage at the nominal value and output current at full load conditions tested; 2.The maximum capacitive load indicates the maximum capacitive load capacity of the module power supply. Generally, the external output capacitance cannot exceed the maximum capacitive load value of the module power supply. Otherwise, the module may fail to start properly and the long-term reliability of the module may be affected.					

Product Working Limit Value

If used beyond the following limits, the module may be damaged. The module is not allowed to continue working beyond the limits.

Project	Condition	Min	Nominal	Max	Units
Input Voltage Range	3.3V Input	-0.7	3.3	5	Vdc
	5V Input	-0.7	5	9	
	9V Input	-0.7	9	15	
	12V Input	-0.7	12	18	
	15V Input	-0.7	15	21	
	24V Input	-0.7	24	30	
Maximum Power Output		---	---	1	W
Operating Temperature Range	Output is full load	-40	---	+85	℃
Storage Temperature	---	-55	---	+105	
Store Humidity	No Condensation	---	---	95	%
Pin Resistance To Welding Temperature	Solder joint distance from shell 1.5mm 10秒	---	---	300	℃
Output Short Circuit Protection		---	---	1	s

*Please test the surface temperature of the enclosure

③ The series modules do not have the function of input anti-reverse connection. Input positive and negative connections are prohibited; otherwise, the modules may be irreversibly damaged.

Product Output Characteristics

The following parameters are tested at room temperature +25℃ at nominal input voltage.

Project	Condition		Min	Norimal	Max	Units
Output Voltage Accuracy			Error envelope curve			
Linear Voltage Regulation Rate	Input Voltage Change±1%	3. 3V Output	---	---	±1. 5	%
		Other Output	---	---	±1. 2	
Load Regulation	10% to 100% load	3. 3V Output	---	18	---	
		5V Output	---	12	---	
		9V Output	---	8	---	
		12V Output	---	7	---	
		15V Output	---	6	---	
		24V Output	---	5	---	
Temperature drift coefficient	100% Load		---	---	±0. 03	%/℃
Ripple Wave & Noise	20MHz Bandwidth		---	60	---	mVp-p
Noise Note: ripple and noise are tested by removing the oscilloscope probe grounding.						

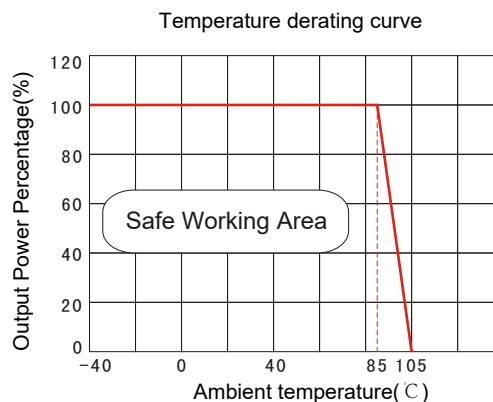
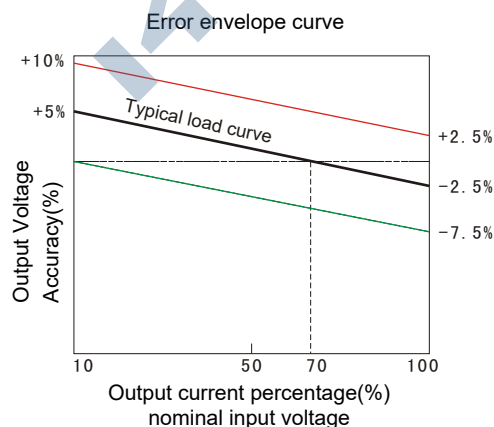
General Product Characteristics

Project	Condition	Min	Nominal	Max	Units
Insulation Vlitage	Insulation voltage test time 1 minute, leakage current less than 1mA	1500	---	---	VDC
Insulation Resistance	Input-output, insulation voltage 1500VDC	1000	---	---	M Ω
Isolation Capacitance	Input-output, 100KHz/ 0.1 v	---	40	---	pF
Switching Frequency	100% load, input nominal voltage	---	100	300	KHz
Mean Free Error Time	MIL-HDFK-21 7F@25℃	3500	---	---	Hours

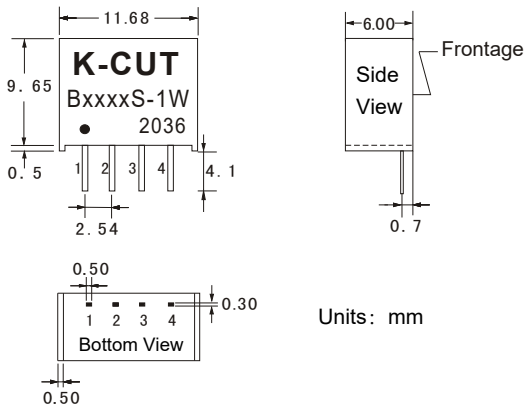
Physical Characteristics Of Products

Shell Material	Black flame retardant heat resistant epoxy resin (UL94-V0)
Package Size	11.68*10.15*6.00mm
Weight	1.2g (Typ.)
Type Of Cooling	Natural Air Cooling

Product Charactererristic Curve



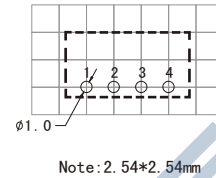
1) Model Size



2) Pin Definitions

1	2	3	4
-Vin	+Vin	-Vout	+Vout

3) Suggested Layout

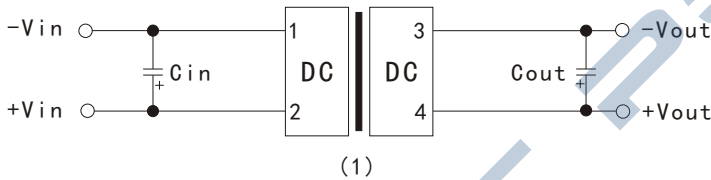


Product Peripheral Recommendation Circuit

Recommended Circuit 1

For situations with general ripple noise requirements, a filter capacitor can be connected in parallel at both the input and output ends. The external circuit is shown in Figure (1) below.

The recommended value of its filter capacitance is shown in Table (1).

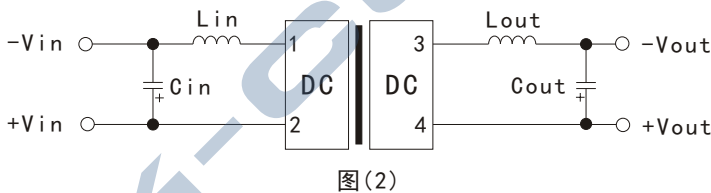


Vin (VDC)	Cin	Vout (VDC)	Cout
3.3/5	10uF/16V	3.3/5	10uF/16V
9/12	4.7uF/25V	9/12	4.7uF/25V
15/24	2.2uF/50V	15/24	1uF/50V

List (1)

Recommended Circuit 2

For the occasions where ripple noise is strictly required, please refer to Figure (2) for the external circuit, and see Table (2) for the recommended values of filter capacitance and inductance.



Vin (VDC)	3.3/5/9/12/15/24
Cin	(1) 中 Cin Parameter
Lin	4.7uH
Cout	(1) 中 Cout Parameter
Lout	4.7uH

List (2)

产品使用注意事项

- Recommended circuit input requirements: Ensure that the output voltage fluctuation range of the power supply does not exceed the input requirements of the DC/DC module. The output power of the input power supply must be greater than the output power of the DC/DC module.
- When the actual power consumption of the load is less than 10% of the rated output power of the module or there is no load, it is recommended to connect a dummy load to the output terminal. The dummy load (resistance) can be calculated based on 5-10% of the rated power of the module, and the resistance value is $U_{out} / (1W \times 10\%)$.
- Overload protection: under normal operating conditions, the output circuit of the product 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 in the circuit;
- The tolerance of the external capacitor at the output terminal should not be too large; otherwise, it is easy to cause overcurrent or bad startup of the module.