

B_S-1W series: 1 W fixed-voltage input with isolated, non-regulated single-output.



Product Naming Rules



Product Features

- 4 Pin SIP International Standard Pins
- Low static current and high conversion efficiency
- Low ripple coefficient and low noise
- Built-in Soft Start Technology
- Isolation Voltage: 1500 VDC
- Operating temperature range: -40°C to +85°C
- We can design products with custom specifications according to customer requirements.

applied range

The B_S-1W series products are specifically designed for applications in distributed power systems where a power supply isolated from the input source is required. These products are suitable for:

- 1) The variation range of the input power supply voltage is within $\pm 10\%$;
- 2) Isolation is required between input and output (isolation voltage: 1500 V DC).
- 3) For applications where low requirements are placed on output voltage stability and ripple noise.

Product Model Number Table

All parameters were measured at room temperature (+25°C) under the module operating at its nominal input voltage.

Product model	Input voltage (VDC) range value (nominal value)	Output ① Vol-tage (VDC)	Output (MA) Max (Full Load) / Min (Light Load)	Maximum capacitive load (μF) ②	Productiveness (% , Min/Typ) at Full Load
B0303S-1W	2.97~3.63 (nominal voltage: 3.3 V)	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 to 5.5 (Nominal voltage: 5 V)	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	8.1~9.9 (Nominal voltage: 9 V)	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

Product model	Input voltage (VDC) range value (nominal value)	Output ① Vol- tage (VDC)	Output (MA) Max (Full Load) / Min (Light Load)	Maximum capacitive load (μF) ②	Productiveness (%, Min/Typ) @ Full Load
B1203S-1W	10.8-13.2 (12 V 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	13.5-16.5 (15 V 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	21.6-26.4 (24 V 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	We can design products with custom specifications tailored to customer requirements, offering models with power outputs ranging from 0.1 W to 1 W.				
For all the aforementioned power modules, the no-load power consumption is approximately 10% of the rated output power. ① The nominal output voltage is measured under conditions where the input voltage equals the nominal value and the output current operates at full load. ② The maximum capacitive load represents the highest capacity of the module power supply to handle capacitive loads at its output. Generally, external output capacitors must not exceed this maximum value; otherwise, it may cause improper module startup and compromise long-term operational reliability.					

Using beyond these limit values may damage the module. The module must not operate continuously at these limits.

Project	Condition	Least value ③	Nominal value	Crest value	Unit
Input voltage range	3.3V Input Module	-0. 7	3. 3	5	Vdc
	5V Input Module	-0. 7	5	9	
	9V Input Module	-0. 7	9	15	
	12V Input Module	-0. 7	12	18	
	15V Input Module	-0. 7	15	21	
	24V Input Module	-0. 7	24	30	
Maximum output		---	---	1	W
Operating temperature range	Output at full load	-40	---	+85	℃
Storage Temperature	---	-55	---	+105	
Storage Humidity	No condensation	---	---	95	%
Pin Welding Temperature Resistance	Weld point distance from the housing: 1.5 mm, duration: 10 seconds	---	---	300	℃
Output Short-Circuit Protection		---	---	1	s
*Test the surface temperature of the housing					
③ This series of modules lacks an input reverse connection protection feature; incorrect polarity connections (positive/negative) are strictly prohibited, as they may cause irreversible damage to the module.					

Product Export Characteristics

All parameters were measured at room temperature (+25°C) under the module's nominal input voltage.

Project	Condition	Least value	Nominal value	Crest value	Unit
Output Voltage Precision		See the error envelope curve diagram.			
Linear voltage regulation rate	Input voltage variation $\pm 1\%$	3.3V Output Module	---	± 1.5	%
		Other Output Modules	---	± 1.2	
Load Adjustment Rate	10% to 100% load	3 3V Output Module	---	18	
		5V Output Module	---	12	
		9V Output Module	---	8	
		12V Output Module	---	7	
		15V Output Module	---	6	
		24V Output Module	---	5	
Temperature Drift Coefficient	100% Load	---	---	± 0.03	/°C
Waves & Noise	20 MHz bandwidth	---	60	---	mVp-p

Note: Testing of ripples and noise is performed using the contact test method with the oscilloscope probe's ground wire removed.

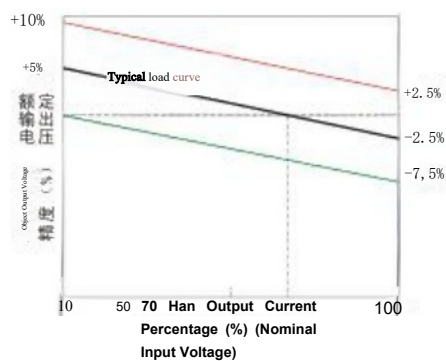
General Characteristics of the Product

Project	Condition	Minimum value	Nominal value	Crest value	Unit
Insulation Voltage	Test duration: 1 minute; leakage current: less than 1 mA	1500	---	---	VDC
Insulation resistance	Input/Output: Insulation Voltage 500 VDC	1000	---	---	MΩ
Isolation capacitance	Input/Output, 100 kHz/0.1 V	---	40	---	pF
Switching frequency	100% load, input nominal voltage	---	100	300	KHz
Mean free error time	MIL-HDFK-217F@25°C	3500	---	---	Kh ours

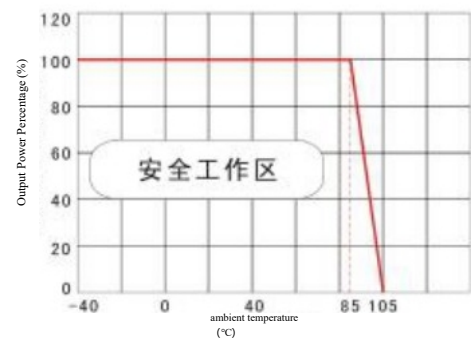
Sheathing material	Black flame-retardant and heat-resistant epoxy resin (UL94-VO)
Packaging Size	11.68*10.15*6.00mm
Weight	1.2g (Typ.)
Cooling-down method	Natural air cooling

Product Characteristics Curve

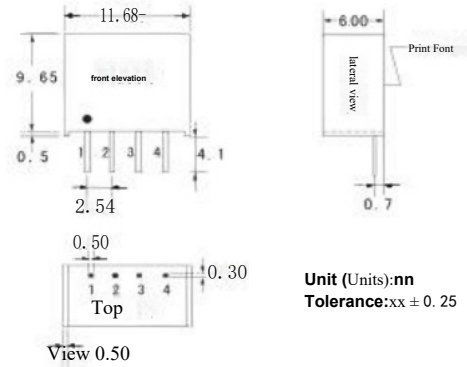
Error Envelope Curve Diagram



Temperature Derating Curve Diagram



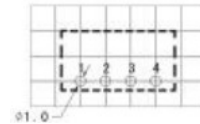
1) External Dimensions



2) Pin Definitions

1	2	3	4
-Vin	+Vin	-Vout	+Vout
Enter a negative value	Enter positive value	Output negative	Output Positive

3) Recommended Printing Layout

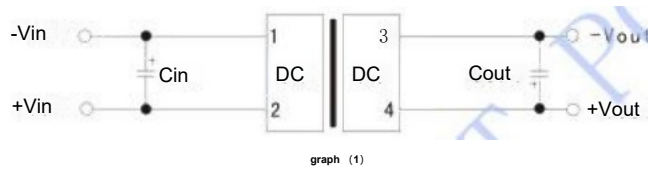


Note: Grid spacing is 2.54×2.54 mm

Recommended Circuit for Product Periphery

Recommended Circuit 1

For applications with general ripple noise requirements, a filter capacitor may be connected in parallel at both the input and output terminals, as shown in Figure (1). The recommended values of these filter capacitors are listed in Table (1).

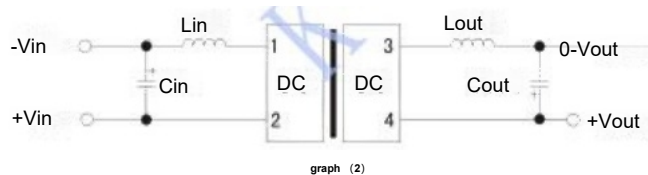


Vin (VDC)	Cin	Vout (VDC)	Cout
3.3/5	10uF/16V	3.3/5	10uF/16V
9/12	4.7uF/25V	9/12	4.7uF/25V
15/24	2.2uF/50V	15/24	1uF/50V

Table (1)

Recommended Circuit 2

For applications requiring stringent control of ripple noise, refer to Figure (2) for the external circuit configuration; recommended values for filter capacitors and inductors are detailed in Table (2).



Vin (VDC)	3.3/5/9/12/15/24
Cin	See the Cin parameter in Table (1).
Lin	4.7uH
Cout	See the Cout parameter in Table (1)
Lout	4.7uH

Table (2)

Product Usage Instructions

- **Input Requirements:** The output voltage fluctuation range of the power supply must not exceed the input requirements specified for the DC/DC module; the output power of the input power source must be greater than that of the DC/DC module.
- **Output load requirements:** Avoid operating under no-load conditions whenever possible. If the actual power consumption is less than 10% of the module's rated output power or if no-load operation occurs, connect a dummy load externally to the output terminal. The dummy load (resistor) should be set at 5–10% of the module's rated power, calculated as: resistor value = $U_{out} / (1 W \times 10\%)$.
- **Overload protection:** Under normal operating conditions, the product's output circuit lacks overload protection functionality. The simplest solution is to connect a self-resetting fuse in series at the input or install an additional circuit breaker in the circuit.
- **The capacitance value of the external capacitor connected to the output should not be excessively large, as this may cause overcurrent or poor startup performance during module activation.**