BR45D / 65 SERIES 45/ 65/ 72 Watts

KEY FEATURES

- Input under Voltage Protection
- Over Current Protection (Hiccup Mode)
- Short Circuit Protection (Hiccup Mode)
- Over Voltage Protection (Hiccup Mode)
- Over Temperature Protection (Self-recovery)
- Remote ON/OFF Control
- Remote Sense *
- Output Voltage Trim
- UL60950-1 and CSA C22.2 No. 60950-1-07
- Meet UL94V-0 Flammability Requirements
- Rohs6 Compliant
- Size: 2.28 x 1.45 x 0.38 Inches (BR65S-1.2S)
  2.28 x 1.45 x 0.4 Inches (BR45D/BR65D)
- 3-Years Product Warranty

*BR45D Series and BR65D-12D without this function

DESCRIPTION

The BR45D/65D/65S series DC-DC converter are high-efficiency and power density isolated models. This series contain 3 modules, output power from 45W to 65W, output voltage covering 1.2V, 3.3V/1.2V, 3.3V/1.5V and ±12V. All models support primary ON/OFF control. This series which conform to the RoHS6 requirement can be used in the fields of communication, data transmission and distributed power supply system.

BR45D Series	BR65D-12D	BR65S-1.2S
		

ELECTRICAL SPECIFICATIONS

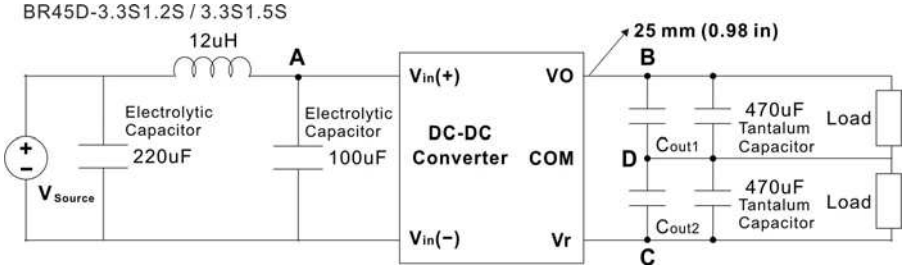
Conditions: TA = 25°C (77°F), Airflow = 1 m/s (200 LFM), Vin = 48 V, unless otherwise notes.

Model No.			BR45D-3.3S1.2S	BR45D-3.3S1.5S	BR65D-12D	BR65S-1.2S
Max Output Wattage (W)			42W	45W	65W	72W
Input	Voltage (V.DC.)		48V (36~75V)			
	Current (A) (max)		2.0A	2.0A	2.7A	2.6A
	No-Load Loss (W) (typ.)		2.4W	2.4W	1.3W	2W
Output	Voltage (V.DC.)		Vo : 3.33V Vr : 1.24V	Vo : 3.33V Vr : 1.54V	±12.1V	1.2V
	Regulated Voltage Precision (max.)		±3%			
	Current (A) (max.)		8A / 13A	8A / 12A	2.7A / 2.7A	60A
	Line Regulation (LL-HL) (typ.)		±1%	±1%	±0.3%	±0.2%
	Load Regulation (0-100%) (typ.)		±1.5%	±1.5%	±0.5%	±0.2%
	Ripple & Noise (peak to peak) (typ.) (Oscilloscope Bandwidth:20 MHz)		50 mV	75 mV	75 mV	100 mV
	Efficiency (typ.)	100% Load	88%	88%	90%	89%
	(Vin = 48 V; TA=25°C (77°F))	50% Load	88%	88%	90%	90.5%
Protection	Over Power Protection		Hiccup mode			
	Over Current Protection		Hiccup mode			
	Over Voltage Protection		Vo: 3.9~5.0V Vr: 1.45~1.8V (Hiccup mode)	Vo: 3.9~5.0V Vr: 1.77~2.26V (Hiccup mode)	14~16.6V (Hiccup mode)	1.4~2.0V (Hiccup mode)
	Short Circuit Protection (max.)		Hiccup mode			
	Over Temperature Protection		Threshold:110~135°C (typ.) / Hysteresis:5°C (min.) Self-recovery (The values are obtained by measuring the temperature of the hottest power component on the top surface of the converter.)			
Isolation	Voltage (V.DC.)		1500 VDC (Functional Isolation)			
Environment	Operating Temperature		-40°C…+85°C			
	Storage Temperature		-55°C…+125°C			
	Temperature Coefficient (max.)		0.02 % Vout / °C (TA = -40°C to +85°C (-40°F to +185°F))			
	Humidity		95% RH			
	MTBF		1.5 Million Hours			2.5 Million Hours
			(Telcordia SR332; 80% load; Airflow = 1.5m/s (300 LFM); TA = 40°C (104°F)			
Safety	Agency Approvals		CE, UL, TUV			
EMC	EMI (Conducted & Radiated Emission)		UL60950-1 and CSA C22.2 No. 60950-1-07			
Physical	Dimension (L x W x H) Tolerance ±0.5 mm		BR65S-1.2S: 2.28 x 1.45 x 0.38 Inches (57.9 x 36.8 x 9.7 mm) others: 2.28 x 1.45 x 0.4 Inches (57.9 x 36.8 x 10.2 mm)			
	Weight		50 g	50 g	80 g	38 g
Other	Remote On/Off Voltage	Low level (V.DC.)	-0.7~1.2V			
		High level (V.DC.)	3.5~12V			
	On/Off Current	Low level (mA) (max.)	1mA			

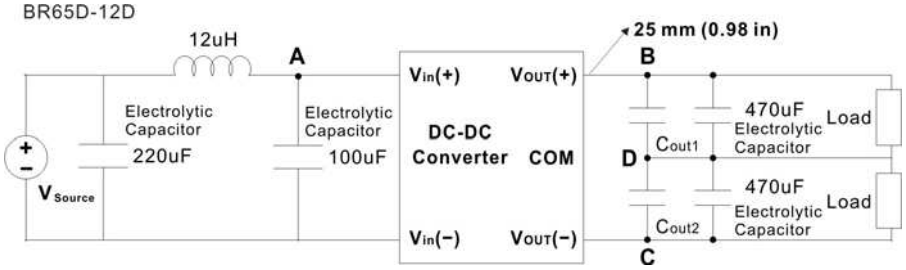
BR45D / 65 SERIES 45/ 65/ 72 Watts

NOTE

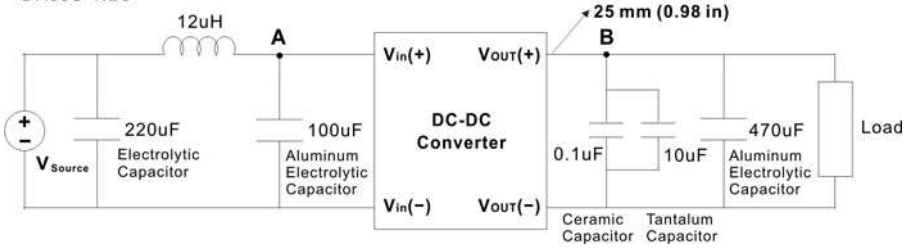
BR45D-3.3S1.2S / 3.3S1.5S



BR65D-12D



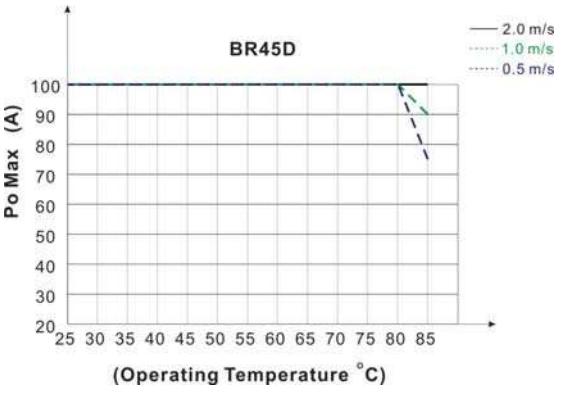
BR65S-1.2S

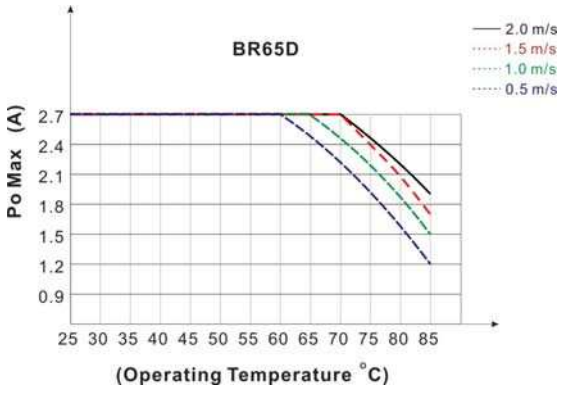


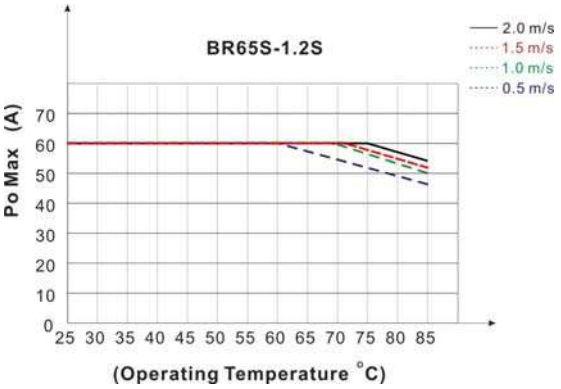
1. During the test of input reflected ripple current, the input terminal must be connected to a 12uH inductor and a 220uF electrolytic capacitor.
2. Point B, which is for testing the output voltage ripple, is 25 mm (0.98 in.) away from the 3.3Vout / +12 Vout pin.
3. Point C, which is for testing the output voltage ripple, is 25 mm (0.98 in.) away from the 1.2Vout / 1.5Vout / -12 Vout pin.
4. Cout1 and Cout2 are capacitors that connect a 10 μF tantalum capacitor to a 0.1 μF ceramic capacitor in parallel.

1. During the test of input reflected ripple current, the input terminal must be connected to a 12uH inductor and a 220uF electrolytic capacitor.
2. Point B, which is for testing the output voltage ripple, is 25 mm (0.98 in.) away from the Vout(+) pin.

DERATING



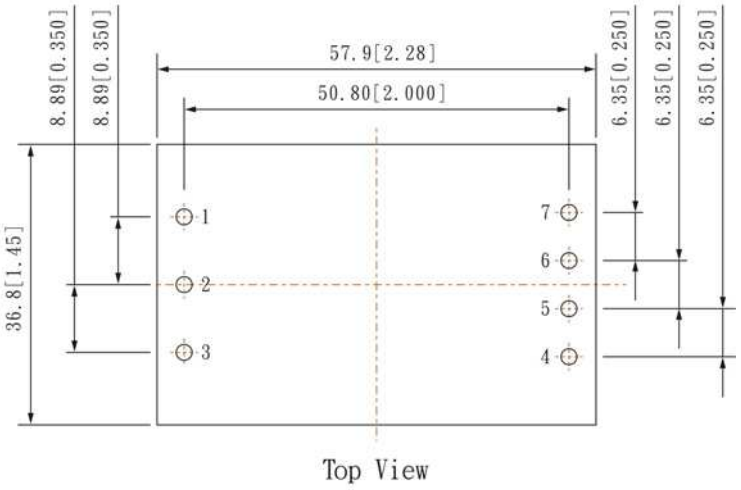




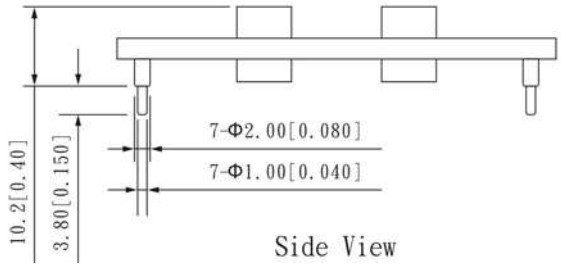
MECHANICAL DIMENSION

BR45D-3.3S1.2S / BR45D-3.3S1.5S / BR65D-12D

Unit: mm [in.]



Top View



Side View

PIN#	3.3S1.2S 3.3S1.5S	12D
1	+DC IN	+DC IN
2	ON / OFF CTL	ON / OFF CTL
3	-DC IN	-DC IN
4	+Vr	-12V DC OUT
5	COM	COM
6	TRIM	TRIM
7	+VO	+12V DC OUT

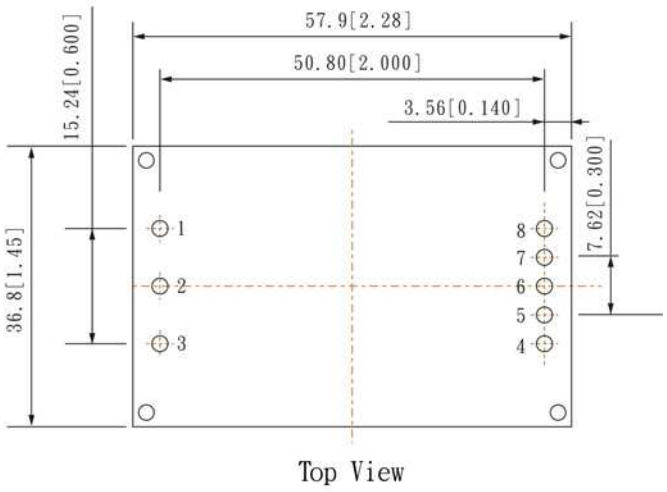
Note

1. All dimensions in mm [in.] Tolerances: x.x ± 0.5 mm [x.xx ± 0.02 in.] x.xx± 0.25 mm [x.xxx ± 0.010 in.]
2. Pin 1-7 are 1.00 ± 0.05 mm [0.040 ± 0.002 in.] diameter with 2.00 ± 0.10 mm [0.080 ± 0.004 in.] diameter standoff shoulders.

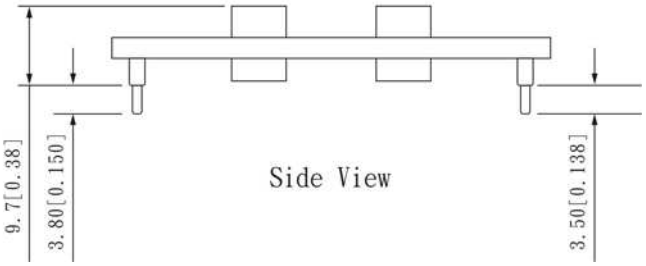
MECHANICAL DIMENSION

BR65S-1.2S

Unit: mm [in.]



Top View



Side View

PIN#	Single
1	-DC IN
2	ON / OFF CTL
3	+DC IN
4	+DC OUT
5	+Sense
6	TRIM
7	-Sense
8	-DC OUT

Note

1. All dimensions in mm [in.] Tolerances: x.x ± 0.5 mm [x.xx ± 0.02 in.] x.xx± 0.25 mm [x.xxx ± 0.010 in.]
2. Pin 1-3, 5-7 are 1.00 ± 0.05 mm [0.040 ± 0.002 in.] diameter with 2.00 ± 0.10 mm [0.080 ± 0.004 in.] diameter standoff shoulders.
   Pin4 and pin8 are 1.50 ± 0.05 mm [0.060 ± 0.002 in.] diameter with 2.50 ± 0.10 mm [0.098 ± 0.004 in.] diameter standoff shoulders.