BR130 SERIES 36/ 60/ 72/ 100/ 132 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 (others Model)
  2.28 x 1.45 x 0.39 Inches (BR130-3.3S)
  2.28 x 1.45 x 0.5 Inches (BR130-3.3SB)
- 3-Years Product Warranty

DESCRIPTION

The BR130 series is a new generation isolated DC-DC converter that uses an industry standard quarter-brick structure, and features high efficiency and power density, operates from an input voltage range of 36 V to 75 V, provides the rated output voltage of 1.2V / 1.5V / 1.8V / 2.5V / 3.3V and the maximum output current of 30A / 40A.

BR130-1.2S / 1.5S / 1.8S / 2.5S / 3.3S	BR130-3.3SB
	

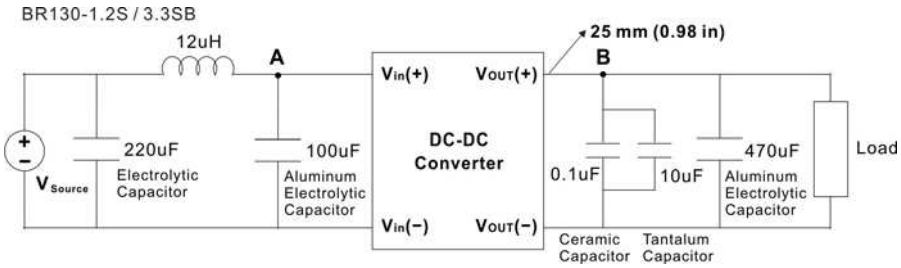
ELECTRICAL SPECIFICATIONS

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

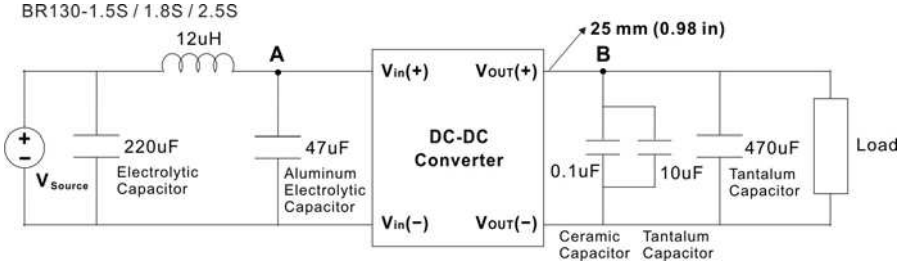
Model No.			BR130-1.2S	BR130-1.5S	BR130-1.8S	BR130-2.5S	BR130-3.3S	BR130-3.3SB
Max Output Wattage (W)			36W	60W	72W	100W	132W	
Input	Voltage (V.DC.)		48V (36~75V)					
	Current (A) (max)		1.3A	2A	2.4A	3.5A	4.5A	
	No-Load Loss (W) (typ.)		1W	2W	2W	3.5W	3.6W	
Output	Voltage (V.DC.)		1.2V	1.5V	1.8V	2.5V	3.3V	
	Regulated Voltage Precision (max.)		±3%					
	Current (A) (max.)		30A	40A				
	Line Regulation (LL-HL) (typ.)		±0.2%	±0.2%	±1%	±0.2%	±0.2%	
	Load Regulation (0-100%) (typ.)		±0.2%	±0.3%	±1%	±0.3%	±0.3%	
	Ripple & Noise (peak to peak) (typ.) (Oscilloscope Bandwidth:20 MHz)		100 mV	100 mV	100 mV	100 mV	120 mV	
	Efficiency (typ.) (Vin = 48 V; TA=25℃ (77℉))	100% Load	89.5%	90.5%	91.5%	92%	93.5%	93.5%
		50% Load	89.5%	91.5%	92%	92%	93.5%	93.5%
		20% Load	—	87%	87%	86.5%	87.5%	—
Protection	Over Power Protection		Hiccup mode					
	Over Current Protection		Hiccup mode					
	Over Voltage Protection		1.4~2.0V (Hiccup mode)	1.8~2.5V (Hiccup mode)	2.2~3.0V (Hiccup mode)	3.0~3.8V (Hiccup mode)	3.9~4.7V (Hiccup mode)	
	Short Circuit Protection (max.)		Hiccup mode					
	Over Temperature Protection		Threshold:115~135℃ (typ.) / Hysteresis:5℃ (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℃…+85℃					
	Storage Temperature		-55℃…+125℃					
	Temperature Coefficient (max.)		0.02 % Vout / ℃ (TA = -40℃ to +85℃ (-40℉ to +185℉))					
	Humidity		95% RH					
	MTBF		2.5 Million Hr	1.5 Million Hr	1.5 Million Hr	1.5 Million Hr	1.5 Million Hr	2.5 Million Hr
			(Telcordia SR332; 80% load; Airflow = 1.5m/s (300 LFM); TA = 40℃ (104℉)					
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		BR130-3.3SB: 2.28 x 1.45 x 0.5 Inches (57.9 x 36.8 x 12.7 mm) BR130-3.3S: 2.28 x 1.45 x 0.39 Inches (57.9 x 36.8 x 9.8 mm) others: 2.28 x 1.45 x 0.38 Inches (57.9 x 36.8 x 9.7 mm)					
	Weight		38 g	38 g	38 g	38 g	40 g	58 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					

NOTE

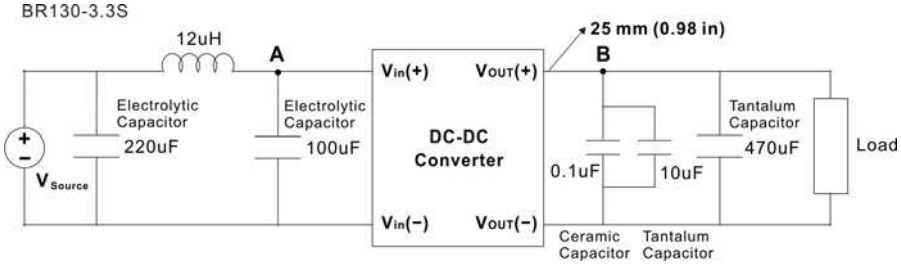
BR130-1.2S / 3.3SB



BR130-1.5S / 1.8S / 2.5S

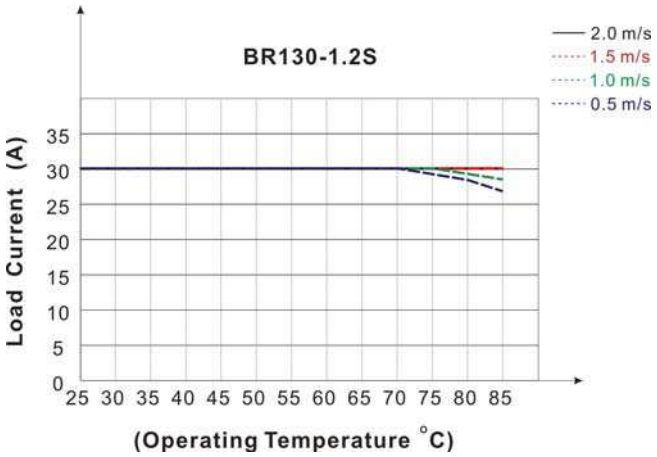


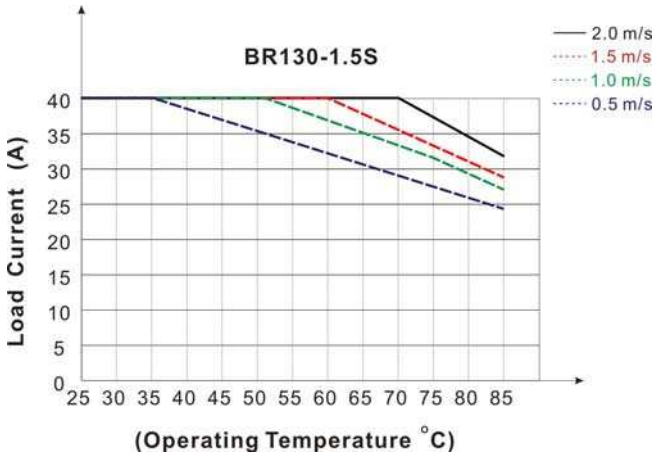
BR130-3.3S

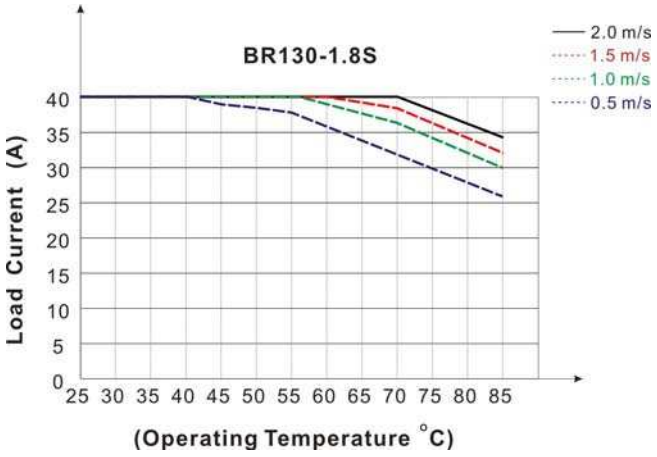


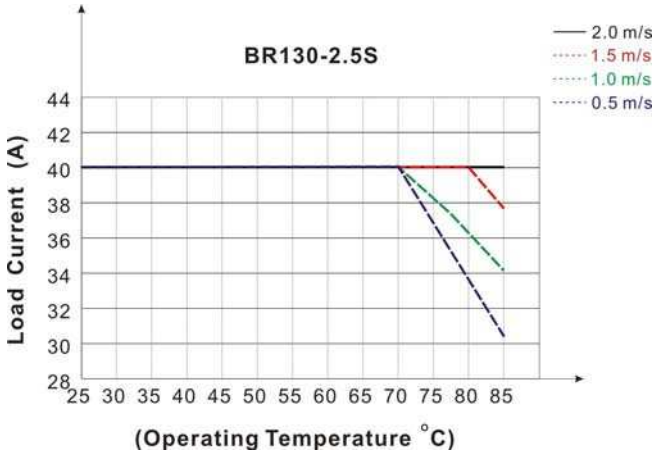
1. During the test of input reflected ripple current, the input terminal must be connected to a 12uH inductor and a 220uF electrolytic capacitor.
2. Point B, which is for testing the output voltage ripple, is 25 mm (0.98 in.) away from the Vout(+) pin.

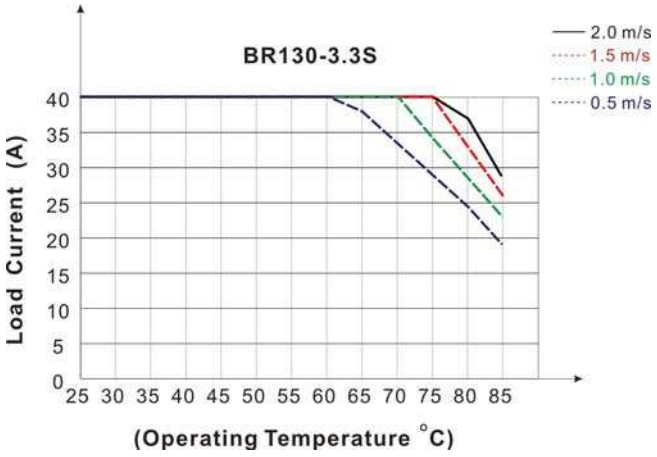
DERATING

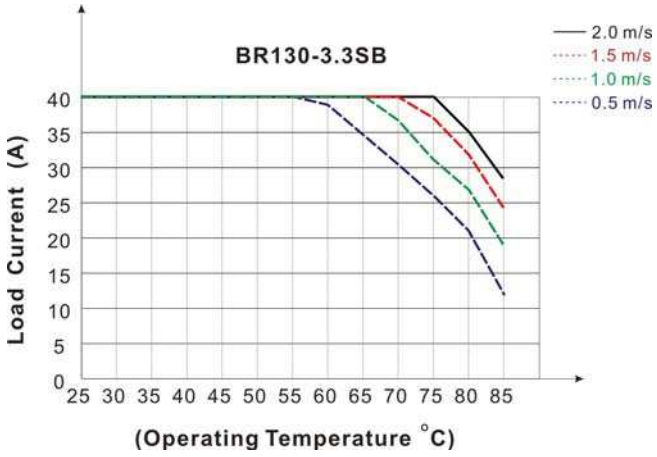

BR130-1.2S
2.0 m/s
1.5 m/s
1.0 m/s
0.5 m/s
Load Current (A)
0 5 10 15 20 25 30 35
25 30 35 40 45 50 55 60 65 70 75 80 85
(Operating Temperature °C)


BR130-1.5S
2.0 m/s
1.5 m/s
1.0 m/s
0.5 m/s
Load Current (A)
0 5 10 15 20 25 30 35 40
25 30 35 40 45 50 55 60 65 70 75 80 85
(Operating Temperature °C)


BR130-1.8S
2.0 m/s
1.5 m/s
1.0 m/s
0.5 m/s
Load Current (A)
0 5 10 15 20 25 30 35 40
25 30 35 40 45 50 55 60 65 70 75 80 85
(Operating Temperature °C)


BR130-2.5S
2.0 m/s
1.5 m/s
1.0 m/s
0.5 m/s
Load Current (A)
28 30 32 34 36 38 40 42 44
25 30 35 40 45 50 55 60 65 70 75 80 85
(Operating Temperature °C)

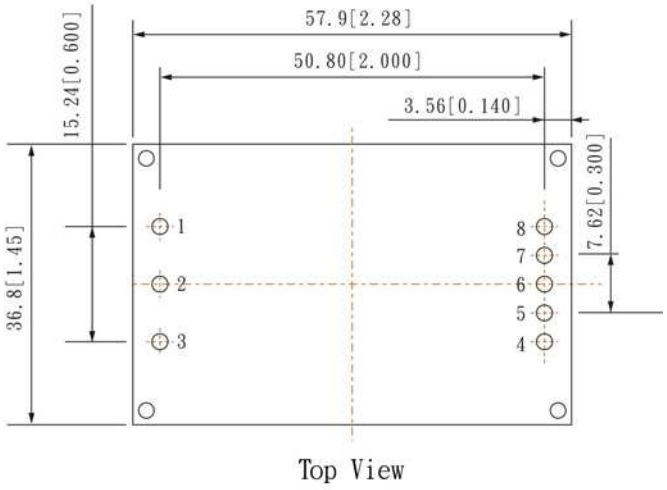

BR130-3.3S
2.0 m/s
1.5 m/s
1.0 m/s
0.5 m/s
Load Current (A)
0 5 10 15 20 25 30 35 40
25 30 35 40 45 50 55 60 65 70 75 80 85
(Operating Temperature °C)


BR130-3.3SB
2.0 m/s
1.5 m/s
1.0 m/s
0.5 m/s
Load Current (A)
0 5 10 15 20 25 30 35 40
25 30 35 40 45 50 55 60 65 70 75 80 85
(Operating Temperature °C)

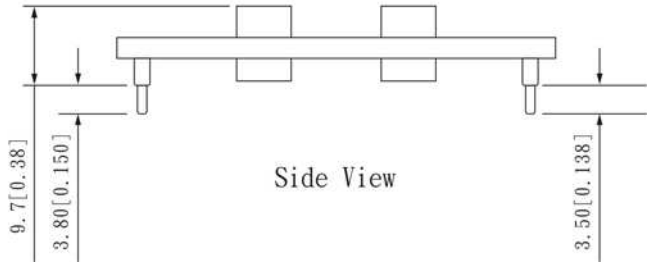
MECHANICAL DIMENSION

BR130-1.2S / BR130-1.5S / BR130-1.8S / BR130-2.5S / BR130-3.3S

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

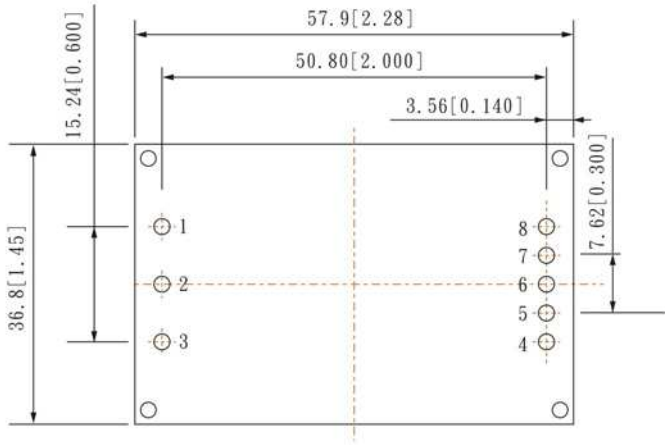
Note

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.

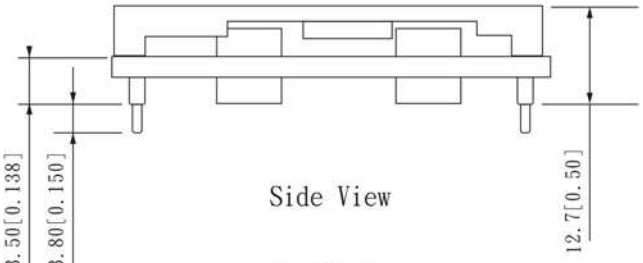
MECHANICAL DIMENSION

BR130-3.3SB

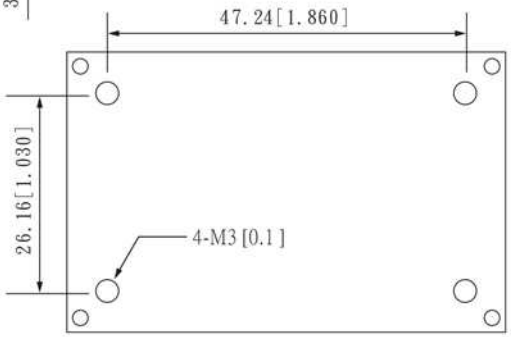
Unit: mm [in.]



Top View



Side View



Bottom 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.
3. M3 Screw used to bolt unit's baseplate to other surfaces (such as heatsink) must not exceed 3.00 mm (0.120 in.) depth below the surface of baseplate.