

20 Watt**2x1 Inch Package B
2:1 Input Range - Metal Case**

- o Single & Dual Outputs
- o Pi Input Filter
- o Six-Sided Shielded
- o Efficiency up to 90%
- o Remote On/Off Control
- o Continuous Short Circuit Protection



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		%EFF	CAPACITOR LOAD MAX.			
			MIN.	MAX.	NO LOAD	FULL LOAD					
20BRD12W12LC	9-18 VDC	±12 VDC	42 mA	±835 mA	40 mA	1856 mA	90	1000 µF			
20BRD12W15LC		±15 VDC	33 mA	±670 mA		1861 mA		800 µF			
20BRS24W1.8LC	18-36 VDC	1.8 VDC	0 mA	6000 mA	30 mA	523 mA	86	6000 µF			
20BRS24W2.5LC		2.5 VDC		6000 mA		710 mA			88		
20BRS24W3.3LC		3.3 VDC		5000 mA	40 mA	764 mA	90	5000 µF			
20BRS24W5LC		5 VDC		4000 mA	60 mA	926 mA		4000 µF			
20BRS24W12LC		12 VDC		1670 mA	20 mA	928 mA		2000 µF			
20BRS24W15LC		15 VDC		1330 mA		924 mA		1000 µF			
20BRD24W12LC		±12 VDC		42 mA	±835 mA	928 mA		1000 µF			
20BRD24W15LC		±15 VDC		33 mA	±670 mA	930 mA		800 µF			
20BRS48W1.8LC		36-75 VDC		1.8 VDC	0 mA	6000 mA		30 mA	262 mA	86	6000 µF
20BRS48W2.5LC				2.5 VDC		6000 mA			359 mA		
20BRS48W3.3LC	3.3 VDC		5000 mA	386 mA		89			5000 µF		
20BRS48W5LC	5 VDC		4000 mA	40 mA		463 mA		90	4000 µF		
20BRS48W12LC	12 VDC		1670 mA	15 mA		469 mA	89	2000 µF			
20BRS48W15LC	15 VDC		1330 mA			472 mA	88				
20BRD48W12LC	±12 VDC		42 mA	±835 mA		10 mA	464 mA	90	1000 µF		
20BRD48W15LC	±15 VDC		33 mA	±670 mA			471 mA	89	800 µF		

SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS			
Input Voltage Range			2:1
Input Surge Voltage (100 ms max.)	12 V		25 VDC max.
	24 V		50 VDC max.
	48 V		100 VDC max.
Undervoltage lockout	12 Vin power up		8.8 V
	12 Vin power down		8 V
	24 Vin power up		17 V
	24 Vin power down		16 V
	48 Vin power up		34 V
	48 Vin power down		33 V
Positiv Logic Remote ON/OFF Control	Logic compatibility Module ON Module OFF	CMOS or Open Collector TTL ref. to -Vin >+5.5 VDC or Open Circuit <1.2 VDC	
Input Filter			Pi Type

OUTPUT SPECIFICATIONS			
Voltage Accuracy			±1.5% max.
Voltage Balance (Dual)			±2.0% max.
Minimum Output Current			0 A
Transient Response 75%to 100% Step Load Change		Error Band ±5% Vout Nominal, Recovery Time <500µ sec.	
External Trim Adj. Range	Single		±10%
Ripple and Noise at 20 MHz BW ³			75 mV p-p max.
Temperature Coefficient			±0.03%/°C max.
Short Circuit Protection			Continuous
Line Regulation ¹⁾	Single		±0.2% max.
	Dual		±0.5% max.
Load Regulation ²⁾	Single/Dual		±1.0% max.
Over Voltage Protection			Zener or TVS Clamp
Start Up Time	20 BRS24W12LC		13 ms
	...15LC		
	20BRS48W12LC		22 ms
	...15LC other		5ms

NOTE:

1. Measured from High Line to Low Line.
2. Measured from Full Load to 1/10 Load.
3. The Output Noise is measured with 0.1 µ MLCC.

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GENERAL SPECIFICATION

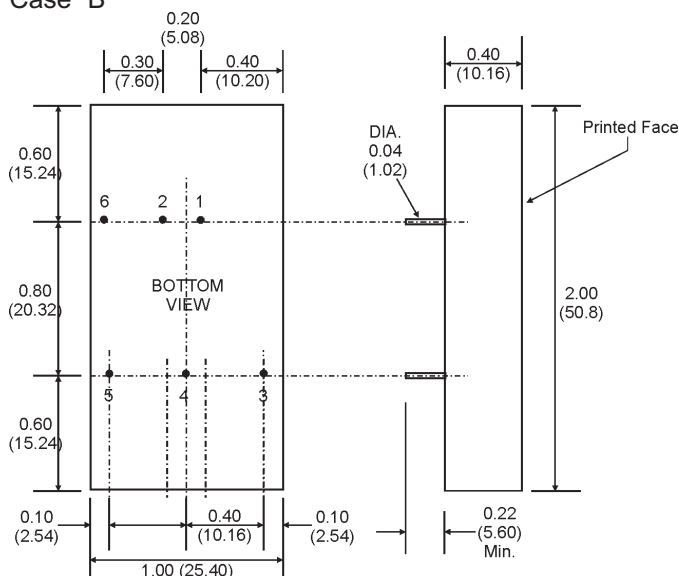
Efficiency	see table
Isolation Voltage	1500 VDC min.
Isolation Resistance	100 Mohms min.
Isolation Capacitance	1000 pF
Switching Frequency	350 kHz
Operating Temperature Range	-40°C to +85°C
Derating above +71°C	Linearly to Zero Power at +100°C
Case Temperature ⁴⁾	+100°C max.
Cooling	Natural Convection
Storage Temperature Range	-55°C to +125°C
Humidity	95% RH max. Non Condensing
Recommended Reflow Soldering Pb-free ⁵⁾	see diagram
EMI/RFI	Six-Sided Continuous Shield
Case Material	Black Coated Copper with Non-Conductive Base
Case Dimensions	2.0 x 1.0 x 0.4 Inches (50.8 x 25.4 x 10.2 mm)
Weight	35 g
Pinout	6 Pin-Inner 6 Pin-Outer Standard add Suffix "PO" to Partno.

4. Maximum Case Temperature under any operating condition should not exceed +100°C.

5. We do not recommend vapor phase soldering!

MECHANICAL SPECIFICATIONS

Case "B"



All Dimensions in Inches (mm).

Tolerances x.xx = ±0.04, x.xxx = ±0.010 (Inches)

x.xx = ±1.0, x.xxx = ±0.25 (mm)

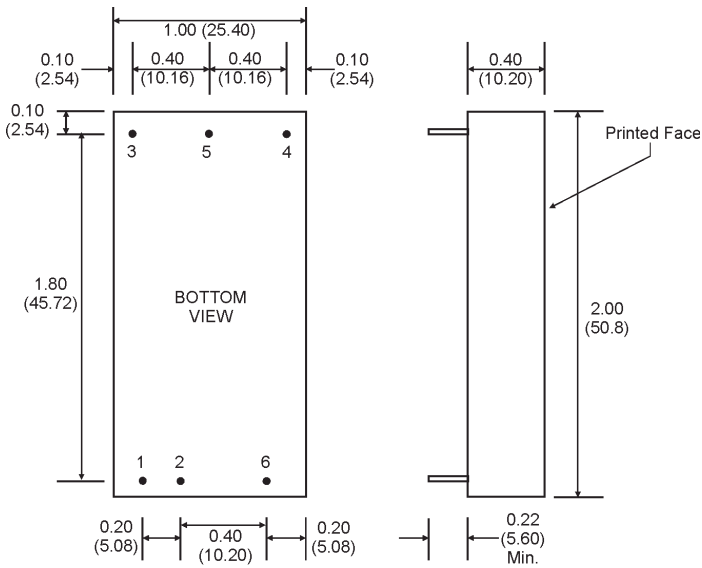
PIN CONNECTIONS

PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
3	+OUTPUT	+OUTPUT
4	TRIM	COMMON
5	-OUTPUT	-OUTPUT
6	REMOTE CONTROL	REMOTE CONTROL

SPECIFICATIONS

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Case "B" Suffix „PO“

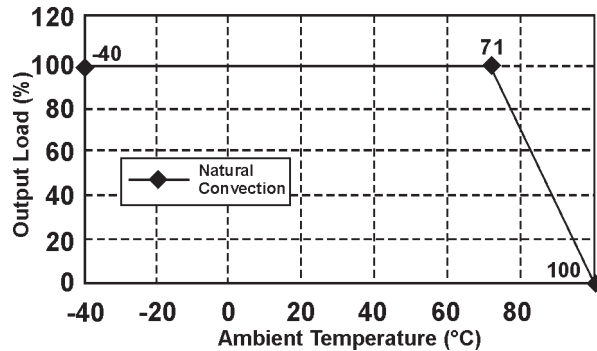


PIN CONNECTIONS - SUFFIX "PO"		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
3	+OUTPUT	+OUTPUT
4	TRIM	-OUTPUT
5	-OUTPUT	COMMON
6	REMOTE CONTROL	REMOTE CONTROL

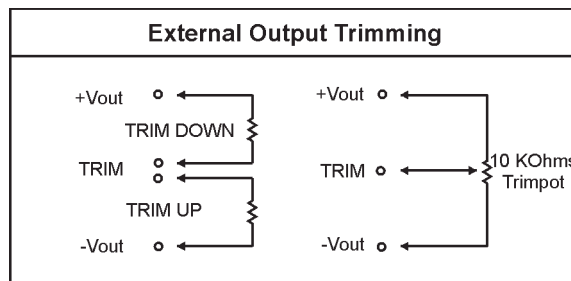
All Dimensions in Inches (mm).
 Tolerances x.xx = ±0.04 , x.xxx = ±0.010 (Inches)
 x.xx = ±1.0, x.xxx = ±0.25 (mm)

APPLICATION NOTES & DIAGRAMS

Derating Diagram



Maximum case temperature under any operating condition should not exceed 100°C.



Output may optionally be externally trimmed (±10%) with a fixed resistor or an external trimpot as shown.

NOTICE:
 The information in this document has been carefully checked. However, no responsibility is assumed for inaccuracies!
 Specifications can be changed without notice. The latest and most complete information can be found on our website.