



MicroPower Direct



10W, Wide Input Range
Single and Dual Output
DC/DC Converters
B1000RW Series

Key Features

- 2:1 Input Range
- 12W Output Power
- Meets EN55022 Class "A"
- Compact 1" x 2" Case
- 1500 VDC I/O Isolation
- Low Cost

Electrical Specifications

Specifications typical @ +25°C with nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Start Voltage	12 VDC Input	8.0	8.5	9.0	VDC
	24 VDC Input	15.0	17.0	18.0	
	48 VDC Input	30.0	33.0	36.0	
Input Filter	Meets EN55022 Class "A"				
Reverse Polarity Input Current				2.0	A
Short Circuit Input Power				3,500	mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±0.5	±1.0	%
Output Voltage Balance	Dual Output, Balanced Loads		±0.5	±1.0	%
Line Regulation	Vin = Min to Max		±0.1	±0.3	%
Load Regulation	Io = 10% to 100%		±0.1	±0.5	%
Ripple & Noise (20 MHz)			50	75	mV P-P
Ripple & Noise (20 MHz)	Over Line, Load & Temp.			100	mV P-P
Ripple & Noise (20 MHz)				15	mV rms
Output Power Protection		120			%
Transient Response Time (Note 1)	25% Load Step Change		150	300	mSec
Transient Response Deviation			±2.0	±4.0	%
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit	Continuous				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,500			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 KHz, 1V		120	160	pF
Switching Frequency		260	300	340	KHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-40	+25	+71	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%
EMV/RFI	Six-Sided Shielded, Metal Case				
Conducted EMI	EN55022 Class A				

Physical

Case Size	2.0 x 1.0 x 0.4 inches (50.8 x 25.4 x 10.2 mm)
Case Material	Metal with Non-Conductive Base
Weight	1.06 oz (30g)

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL STD 217F, 25°C, Grd Benign		726		k Hours

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 sec)	12 VDC Input	-0.7		25.0	VDC
	24 VDC Input	-0.7		50.0	
	48 VDC Input	-0.7		100.0	
Internal Power Dissipation	All Models			5,000	mW

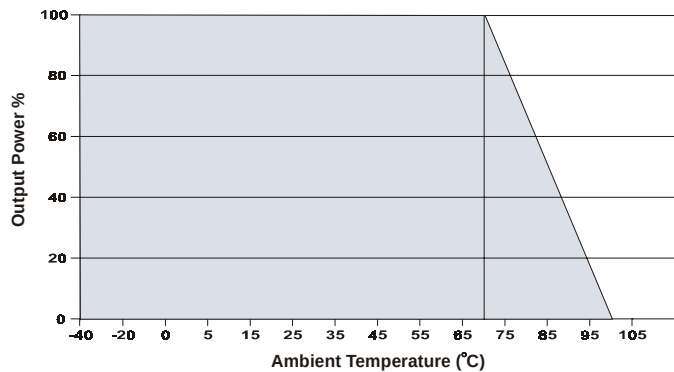
Caution: Exceeding these values can damage the module. These are not continuous operating ratings.

Model Selection Guide

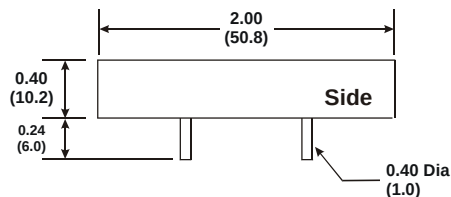
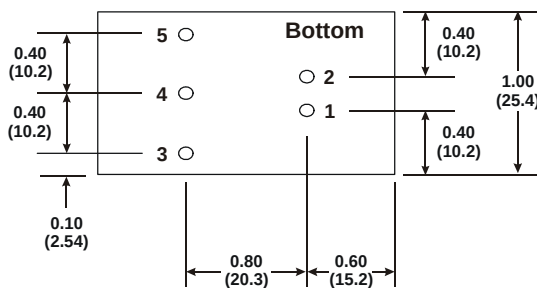
Model Number	Input					Output			Efficiency %, Typ.
	Voltage (VDC)		Current (mA)		Reflected Ripple Current (mA, Typ.)	Voltage (VDC)	Current (mA, Max.)	Current (mA, Min.)	
	Nominal	Range	Full-Load	No-Load					
B1001RW	12.0	9.0 - 18.0	917.0	30.0	50.0	3.3	2400	120	72
B1002RW	12.0	9.0 - 18.0	1082.0	30.0	50.0	5.0	2000	100	77
B1003RW	12.0	9.0 - 18.0	1038.0	30.0	50.0	12.0	830	42	80
B1004RW	12.0	9.0 - 18.0	1047.0	30.0	50.0	15.0	670	34	80
B1005RW	12.0	9.0 - 18.0	1027.0	30.0	50.0	24.0	416	21	81
B1006RW	12.0	9.0 - 18.0	1068.0	30.0	50.0	±5.0	±1000	±50	78
B1007RW	12.0	9.0 - 18.0	1027.0	30.0	50.0	±12.0	±416	±21	81
B1008RW	12.0	9.0 - 18.0	1041.0	30.0	50.0	±15.0	±333	±17	80
B1011RW	24.0	18.0 - 36.0	434.0	20.0	25.0	3.3	2400	120	76
B1012RW	24.0	18.0 - 36.0	534.0	20.0	25.0	5.0	2000	100	78
B1013RW	24.0	18.0 - 36.0	506.0	20.0	25.0	12.0	830	42	82
B1014RW	24.0	18.0 - 36.0	511.0	20.0	25.0	15.0	670	34	82
B1015RW	24.0	18.0 - 36.0	501.0	20.0	25.0	24.0	416	21	83
B1016RW	24.0	18.0 - 36.0	521.0	20.0	25.0	±5.0	±1000	±50	80
B1017RW	24.0	18.0 - 36.0	507.0	20.0	25.0	±12.0	±416	±21	82
B1018RW	24.0	18.0 - 36.0	507.0	20.0	25.0	±15.0	±333	±17	82
B1021RW	48.0	36.0 - 75.0	217.0	10.0	12.0	3.3	2400	120	76
B1022RW	48.0	36.0 - 75.0	260.0	10.0	12.0	5.0	2000	100	80
B1023RW	48.0	36.0 - 75.0	253.0	10.0	12.0	12.0	830	42	82
B1024RW	48.0	36.0 - 75.0	252.0	10.0	12.0	15.0	670	34	83
B1025RW	48.0	36.0 - 75.0	251.0	10.0	12.0	24.0	416	21	83
B1026RW	48.0	36.0 - 75.0	257.0	10.0	12.0	±5.0	±1000	±50	81
B1027RW	48.0	36.0 - 75.0	251.0	10.0	12.0	±12.0	±416	±21	83
B1028RW	48.0	36.0 - 75.0	251.0	10.0	12.0	±15.0	±333	±17	83

- Notes:** 1. Transient recovery is measured to within a 1% error band for a load step change of 75% to 100%.
2. When measuring output ripple, it is recommended that an external 0.1 μ F ceramic capacitor be placed from the +Vout pin (pin 3) to the -Vout pin (pin 5) for single output units and from each output (pin 3 & pin 5) to common (pin 4) for dual output models.
3. For further protection, it is recommended that an external slow-blow fuse be added to the converter input line. The fuse rating should be 1500 mA for 48V input models or 3000 mA for 24V input models.

Derating Curve



Mechanical Dimensions



- Notes:**
All dimensions are typical in inches (mm)
Tolerance x.xx = ± 0.01 (± 0.25)
NC = No Connection

Pin Connections

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Common
5	-Vout	-Vout



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