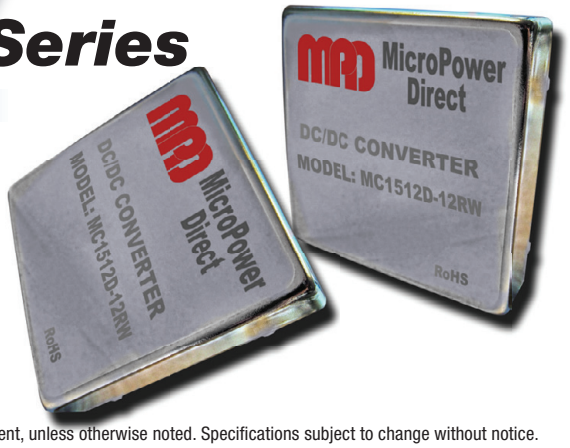
MC1500xRW Series

High Performance, 15W Wide Input Range DC/DC Converters



Key Features:

- 15W Output Power
- Wide 2:1 Input Range
- High Efficiency
- 1,500 VDC Isolation
- Single and Dual Outputs
- >1.12 MHour MTBF
- -40°C to +85°C Operation

RoHS

Electrical Specifications

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

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	12 VDC Input	9.0	12.0	18.0	VDC
	24 VDC Input	18.0	24.0	36.0	
	48 VDC Input	36.0	48.0	72.0	
Input Filter	Internal Capacitors				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0		%
Line Regulation	VIN = Min to Max		±0.5		%
Load Regulation, IOUT = 0% to 100%	Single Output		±0.5		%
	Dual Output, See Note 1		±0.5		
Ripple & Noise (20 MHz), See Note 2			100		mV P - P
Temperature Coefficient			±0.02		%/°C
Output Overload Protection			140		%IOUT
Output Short Circuit	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input/Output 3 Seconds	1,500			VDC
Isolation Voltage	Case/Input or Output	1,000			VDC
Isolation Resistance	500 VDC		1,000		MΩ
Isolation Capacitance	100 kHz, 0.1V		1,000		pF
Switching Frequency			125		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+85	°C
Operating Temperature Range	Case			+100	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	2.00 x 2.00 x 0.40 Inches (50.80 x 50.80 x 10.16 mm)
Case Material	Metal Case, Epoxy Base (UL-94V0)
Weight	2.1 Oz (60.0g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	1.121			MHours

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (0.1 Sec)	12 VDC Input	-0.7		25.0	VDC
	24 VDC Input	-0.7		50.0	
	48 VDC Input	-0.7		100.0	
Lead Temperature	1.5 mm From Case For 10 Sec			260	°C

Caution: Exceeding Absolute Maximum Ratings may damage the module. These are not continuous operating ratings.

MicroPower Direct
292 Page Street
Suite D
Stoughton, MA 02072
USA

T: (781) 344-8226
F: (781) 344-8481
E: sales@micropowerdirect.com
W: www.micropowerdirect.com

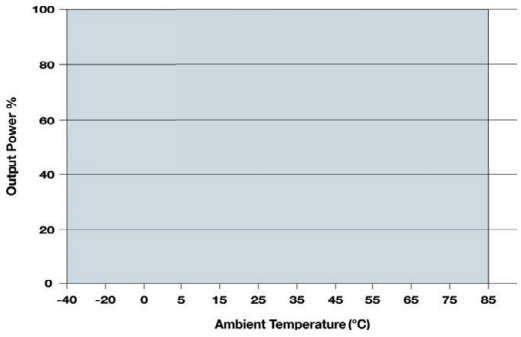
www.micropowerdirect.com

Model Selection Guide

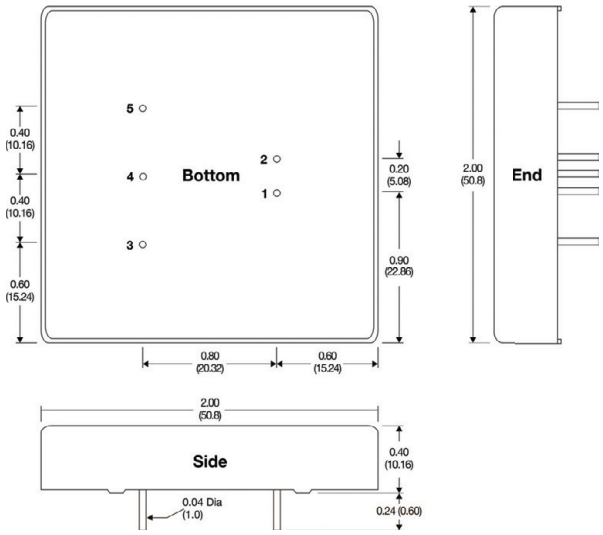
Model Number	Input				Output			Output Capacitive Load	Efficiency	Fuse Rating Slow-Blow
	Voltage (VDC)		Current (mA)		Voltage	Current	Current			
	Nominal	Range	Full-Load	No-Load	(VDC)	(mA, Max)	(mA, Min)	(µF Max)	(%, Typ)	(mA)
MC1512S-03RW	12	9.0 - 18.0	1,031	30	3.3	3,000	0.0	3,300	80	3,000
MC1512S-05RW	12	9.0 - 18.0	1,524	30	5.0	3,000	0.0	3,300	82	3,000
MC1512S-07RW	12	9.0 - 18.0	1,506	30	7.2	2,083	0.0	2,200	83	3,000
MC1512S-09RW	12	9.0 - 18.0	1,470	30	9.0	1,666	0.0	1,000	85	3,000
MC1512S-12RW	12	9.0 - 18.0	1,470	30	12.0	1,250	0.0	1,000	85	3,000
MC1512S-15RW	12	9.0 - 18.0	1,470	30	15.0	1,000	0.0	680	85	3,000
MC1512S-18RW	12	9.0 - 18.0	1,470	30	18.0	833	0.0	470	85	3,000
MC1512S-24RW	12	9.0 - 18.0	1,453	30	24.0	625	0.0	470	86	3,000
MC1512D-03RW	12	9.0 - 18.0	1,031	30	±3.3	±1,500	±0.0	±1,500	80	3,000
MC1512D-05RW	12	9.0 - 18.0	1,524	30	±5.0	±1,500	±0.0	±1,500	82	3,000
MC1512D-07RW	12	9.0 - 18.0	1,506	30	±7.2	±1,041	±0.0	±1,000	83	3,000
MC1512D-09RW	12	9.0 - 18.0	1,488	30	±9.0	±833	±0.0	±680	84	3,000
MC1512D-12RW	12	9.0 - 18.0	1,488	30	±12.0	±625	±0.0	±470	84	3,000
MC1512D-15RW	12	9.0 - 18.0	1,488	30	±15.0	±500	±0.0	±330	84	3,000
MC1512D-18RW	12	9.0 - 18.0	1,470	30	±18.0	±416	±0.0	±220	85	3,000
MC1512D-24RW	12	9.0 - 18.0	1,470	30	±24.0	±312	±0.0	±220	85	3,000
MC1524S-03RW	24	18.0 - 36.0	515	25	3.3	3,000	0.0	3,300	80	1,500
MC1524S-05RW	24	18.0 - 36.0	744	25	5.0	3,000	0.0	3,300	84	1,500
MC1524S-07RW	24	18.0 - 36.0	744	25	7.2	2,083	0.0	2,200	84	1,500
MC1524S-09RW	24	18.0 - 36.0	735	25	9.0	1,666	0.0	1,000	85	1,500
MC1524S-12RW	24	18.0 - 36.0	735	25	12.0	1,250	0.0	1,000	85	1,500
MC1524S-15RW	24	18.0 - 36.0	726	25	15.0	1,000	0.0	680	86	1,500
MC1524S-18RW	24	18.0 - 36.0	726	25	18.0	833	0.0	470	86	1,500
MC1524S-24RW	24	18.0 - 36.0	726	25	24.0	625	0.0	470	86	1,500
MC1524D-03RW	24	18.0 - 36.0	515	25	±3.3	±1,500	±0.0	±1,500	80	1,500
MC1524D-05RW	24	18.0 - 36.0	753	25	±5.0	±1,500	±0.0	±1,500	83	1,500
MC1524D-07RW	24	18.0 - 36.0	744	25	±7.2	±1,041	±0.0	±1,000	84	1,500
MC1524D-09RW	24	18.0 - 36.0	735	25	±9.0	±833	±0.0	±680	85	1,500
MC1524D-12RW	24	18.0 - 36.0	726	25	±12.0	±625	±0.0	±470	86	1,500
MC1524D-15RW	24	18.0 - 36.0	726	25	±15.0	±500	±0.0	±330	86	1,500
MC1524D-18RW	24	18.0 - 36.0	726	25	±18.0	±416	±0.0	±220	86	1,500
MC1524D-24RW	24	18.0 - 36.0	718	25	±24.0	±312	±0.0	±220	87	1,500
MC1548S-03RW	48	36.0 - 72.0	257	20	3.3	3,000	0.0	3,300	80	750
MC1548S-05RW	48	36.0 - 72.0	372	20	5.0	3,000	0.0	3,300	84	750
MC1548S-07RW	48	36.0 - 72.0	372	20	7.2	2,083	0.0	2,200	84	750
MC1548S-09RW	48	36.0 - 72.0	367	20	9.0	1,666	0.0	1,000	85	750
MC1548S-12RW	48	36.0 - 72.0	363	20	12.0	1,250	0.0	1,000	86	750
MC1548S-15RW	48	36.0 - 72.0	359	20	15.0	1,000	0.0	680	87	750
MC1548S-18RW	48	36.0 - 72.0	359	20	18.0	833	0.0	470	87	750
MC1548S-24RW	48	36.0 - 72.0	359	20	24.0	625	0.0	470	87	750
MC1548D-03RW	48	36.0 - 72.0	257	20	±3.3	±1,500	±0.0	±1,500	80	750
MC1548D-05RW	48	36.0 - 72.0	372	20	±5.0	±1,500	±0.0	±1,500	84	750
MC1548D-07RW	48	36.0 - 72.0	372	20	±7.2	±1,041	±0.0	±1,000	84	750
MC1548D-09RW	48	36.0 - 72.0	367	20	±9.0	±833	±0.0	±680	85	750
MC1548D-12RW	48	36.0 - 72.0	363	20	±12.0	±625	±0.0	±470	86	750
MC1548D-15RW	48	36.0 - 72.0	359	20	±15.0	±500	±0.0	±330	87	750
MC1548D-18RW	48	36.0 - 72.0	359	20	±18.0	±416	±0.0	±220	87	750
MC1548D-24RW	48	36.0 - 72.0	359	20	±24.0	±312	±0.0	±220	87	750

Notes:
1. Load regulation is specified for a load change of 10% to 100% for dual output units.
2. When measuring output ripple, an external 1 µF ceramic capacitor & 10 µF electrolytic capacitor should be placed in parallel from the +Vout pin to the -Vout pin for single output models, or from each output to common for dual output models.
3. These converters are specified for operation without external components. However, in some applications the addition of 10 µF capacitor across the input will enhance stability and performance.
4. It is recommended that a fuse be used on the input of a power supply for protection. See the Model Selection table above for the correct rating.

Derating Curve



Mechanical Dimensions



Pin Connections

Pin	Single Output
1	+VIN
2	-VIN
3	+VOUT
4	No Pin
5	-VOUT

Pin	Dual Output
1	+VIN
2	-VIN
3	+VOUT
4	Common
5	-VOUT

Notes:
- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)

MicroPower Direct
We Power Your Success - For Less!
292 Page Street Ste D Stoughton, MA 02072 • TEL: (781) 344-8226 • FAX: (781) 344-8481 • E-Mail: sales@micropowerdirect.com