

# MHI1500BRW18 Series

## Compact 1" x 2", 15W Ultra-High Isolation DC/DC Converters



### Key Features:

- 15W Output Power
- 8.0 kV Isolation
- 15 kV/ $\mu$ S CMTI
- Reinforced Insulation
- EN 60950 Approved (Pend.)
- Wide 2:1 Input Range
- Compact 1" x 2" Case
- Wide Temp Range



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### 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	75.0		
Start-Up Threshold Voltage	12 VDC Input			9.0	VDC	
	24 VDC Input			18.0		
	48 VDC Input			36.0		
Under Voltage Shutdown	12 VDC Input		7.5		VDC	
	24 VDC Input		15.0			
	48 VDC Input		30.0			
Start Up Time	Nominal Input, Constant Resistive Load			30	mS	
Input Filter	$\pi$ (Pi) Filter					

Output						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Output Voltage Accuracy				$\pm 1.0$	%	
Output Voltage Balance	Dual Output, Balanced Loads			$\pm 2.0$	%	
Line Regulation	$V_{IN} = \text{Min to Max}$			$\pm 0.5$	%	
Load Regulation, See Note 2	Single Output			$\pm 0.5$	%	
	Dual Output			$\pm 1.0$	%	
Ripple & Noise (20 MHz) <sup>&lt;</sup> See Note 3	5 & 5.1 VDC Output Models		50		mV P - P	
	All Other Models		100			
Transient Recovery Time, See Note 4	25% Load Step Change			300	$\mu$ Sec	
Transient Response Deviation			$\pm 3.0$	$\pm 5.0$	%	
Output Power Protection	Hiccup Mode		150		%	
Temperature Coefficient				$\pm 0.02$	%/°C	
Output Short Circuit	Continuous (Hiccup Mode)					

General						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Isolation Voltage, 60 Sec	Rated For 60 Sec	4,200			VAC rms	
	Tested For 1 Sec	8,000			VDC	
Isolation Resistance	500 VDC	10			G $\Omega$	
Isolation Capacitance	100 kHz, 1V			60	pF	
Common Mode Transient Immunity		15			kV/ $\mu$ S	
Switching Frequency			285		kHz	

Environmental							
Parameter	Conditions	Min.	Typ.	Max.	Units		
Operating Temperature Range	Ambient	See Chart on Page 2					
	Case			+95	°C		
Storage Temperature Range		-50		+125	°C		
Cooling	Free Air Convection						
Humidity	RH, Non-condensing			95	%		

Physical						
Case Size	See Mechanical Diagram (Page 3)					
Case Material	Non-Conductive Black Plastic (UL94-V0)					
Weight	0.86 Oz (24.5g)					

Reliability Specifications						
Parameter	Conditions	Min.	Typ.	Max.	Units	
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	1.0			MHours	
Safety Standards	UL 60950, EN 60950 (Pending)					

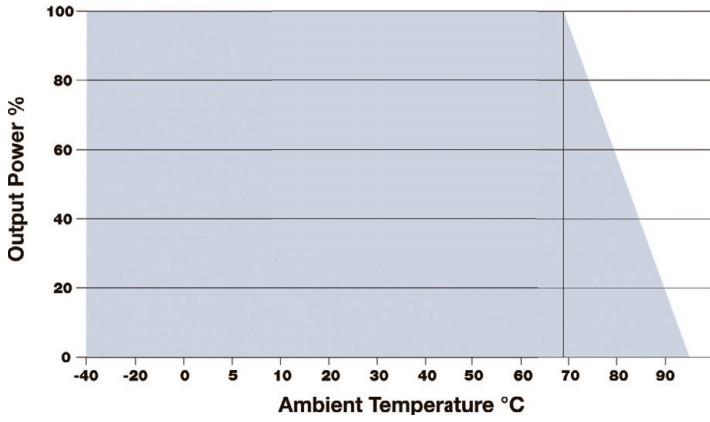
Absolute Maximum Ratings						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Input Voltage Surge (0.1 Sec)	12 VDC Input			25.0	VDC	
	24 VDC Input			50.0		
	48 VDC Input			100.0		
Lead Temperature	1.5 mm From Case for 10 Sec			260	°C	

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

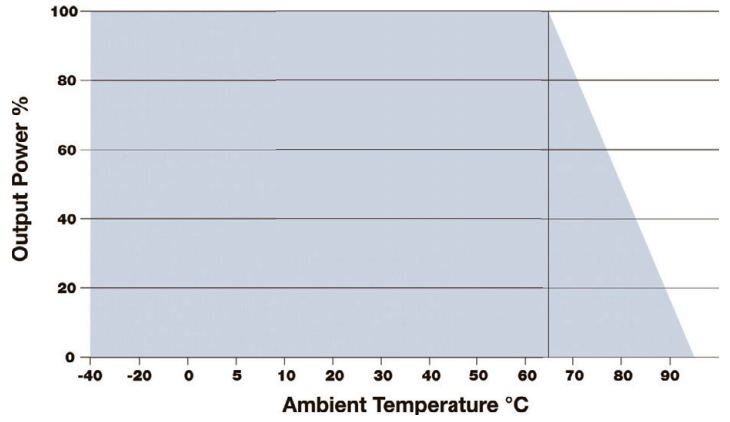
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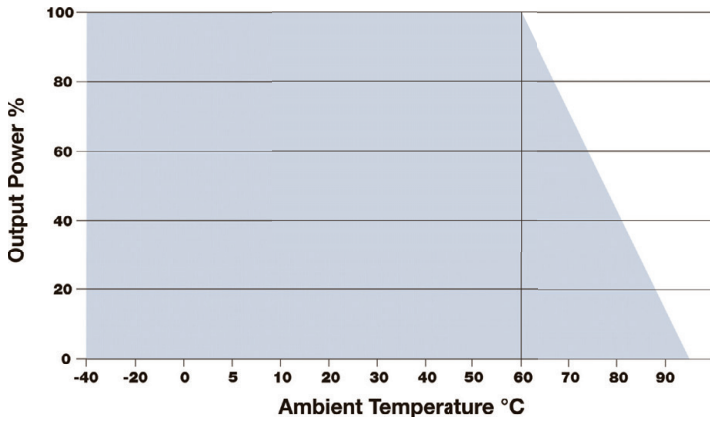
Derating Curves, Cont.



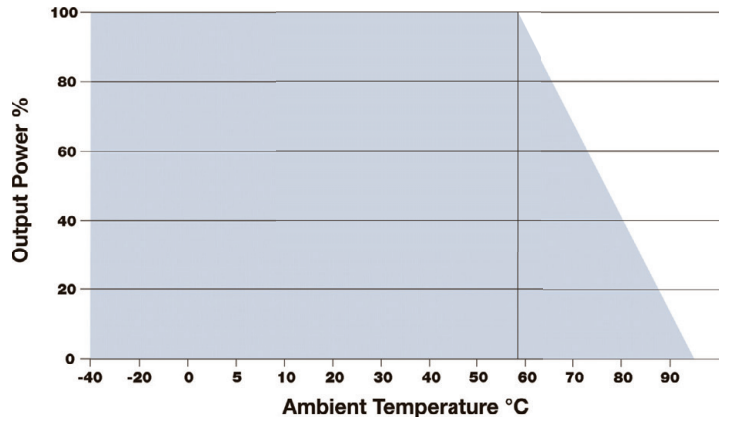
MHI1512S-12BRW18, MHI1524S-12BRW18, MHI1512D-12BRW18  
MHI1548D-12BRW18, MHI1548D-15BRW18



MHI1548S-05BRW18, MHI1548S-05.1BRW18, MHI1548S-12BRW18

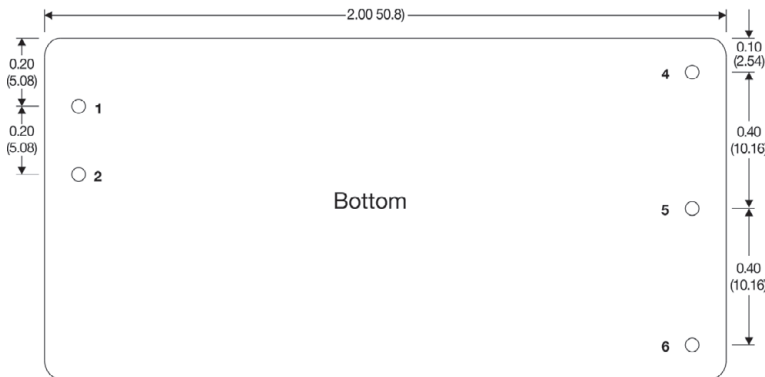
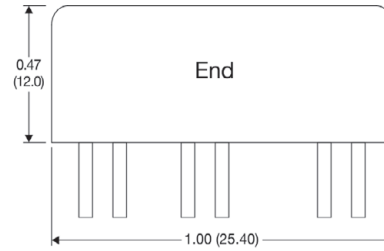
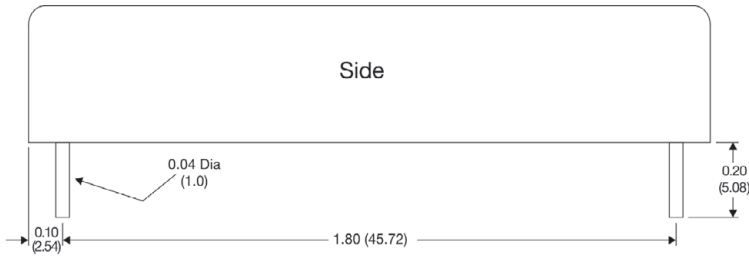


MHI1524D-05RW18, MHI1524S-05.1BRW18



MHI1512S-05BRW18, MHI1512S-05.1BRW18

Mechanical Dimensions



Pin Connections

Pin	Single Output	Pin	Dual Output
1	+VIN	1	+VIN
2	-VIN	2	-VIN
4	+VOUT	4	+VOUT
5	No Pin	5	Common
6	-VOUT	6	-VOUT

Notes:

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