MI-RAM™

Military COTS Ripple Attenuator Modules

Features

- Reduces output PARD to <10 mV pp
- Full attenuation up to 20 A load
- Compatible with all MI-Series units from 5 to 50 Vdc output
- No adjustments required
- 93%-99% efficiency
- Converter sense, trim, OV and OC retained
- MIL-STD-810 environments
- Size: 2.28" x 2.4" x 0.5" (57,9 x 61,0 x 12,7 mm)

Specifications

(At T_{BP} = 25°C, unless otherwise specified)

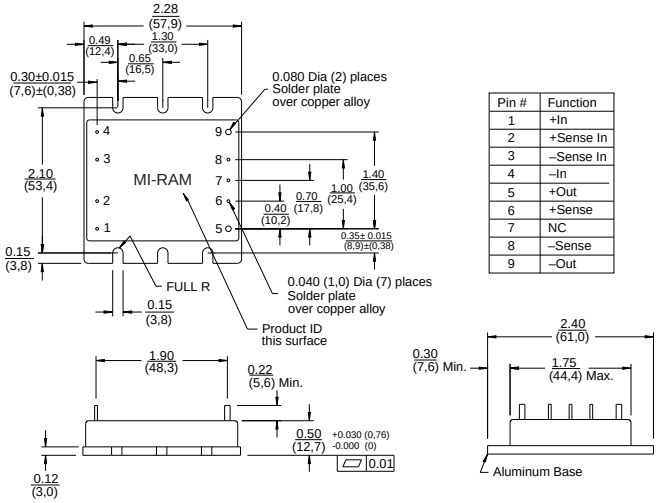
PARAMETER	MIN	TYP	MAX	UNITS	NOTES
Output noise and ripple		2.0	3.0	mV pp	MI-200; 10% to 100% load
		6.0	10.0	mV pp	MI-J00; 10% to 100% load
Input voltage range	5Vdc		50	Vdc	
Output voltage accuracy	99.5		100.5	%	Of MI source converter
Full load current			10	A	MI-RAM-I1 and MI-RAM-M1
			20	A	MI-RAM-I2 and MI-RAM-M2
DC voltage drop	0.34		0.38		10% to full load
Dissipation = (DC voltage drop x load current) + (Vin x 15 mA)					
Isolation		250		Vrms	Input/output to baseplate
Weight		3.0 (85)		ounces (grams)	

Product Grade Specifications

PARAMETER	PRODUCT GRADE I-Grade	PRODUCT GRADE M-Grade
Storage temperature	-55°C to +125°C	-65°C to +125°C
Operating temperature (baseplate)	-40°C to +100°C	-55°C to +100°C
Power cycling burn-in	12 hours, 25 cycles	96 hours, 200 cycles
Temperature cycled with power off	12 cycles	12 cycles
17°C per minute rate of change	-65°C to +100°C	-65°C to +100°C
Test data supplied at these temperatures*	-40°C, +80°C	-55°C, +80°C
Warranty	2 years	2 years
Environmental compliance	MIL-STD-810	MIL-STD-810

**Test data available for review or download from vicorpower.com*

Mechanical Drawing



Pin #	Function
1	+In
2	+Sense In
3	–Sense In
4	–In
5	+Out
6	+Sense
7	NC
8	–Sense
9	–Out

Product Highlights

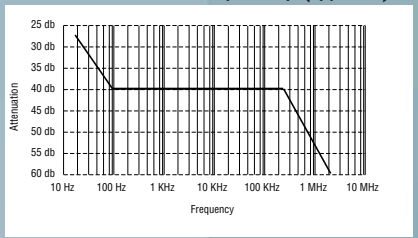
The MI-RAM is designed for applications where extremely low noise outputs are required. When used with any Vicor MI-Series DC-DC converter, the MI-RAM reduces both line frequency related ripple and switching noise to less than 10 mV p-p, DC to 20 MHz.

The combination of the MI-RAM with an MI converter provides the output noise performance of a linear supply at a power density in excess of 15 W/in^3.

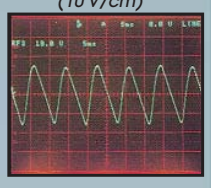
All of the features of the MI-Series converter remain available while using the MI-RAM, including output voltage trimming, OVP and OTP (MI-200 only), current limiting, remote sense, and output inhibit.

All units are manufactured in ISO 9001-registered facilities. Full epoxy encapsulation in a low profile package enables the MI-RAM to meet MIL-STD-810 environmental testing requirements.

Attenuation vs. Frequency (typical)



Input to the converter (10 V/cm)



Output from the RAM (2 mV/cm)