MI-RAM Series

MILITARY COTS OUTPUT RIPPLE ATTENUATOR MODULES

Features

- **Compatible with all MI- series modules**
- **Military Specification Compliance**
- **Environments: MIL-STD-810**
- **Efficiency 93-99%**
- **Operating Temperature to 100°C**
- **No adjustment required**
- **Reduces output PARD to < 10mVp-p**
- **Full attenuation up to 20A load**

Specifications

INPUT

Input Voltage Range	5Vdc to 50Vdc
DC Voltage Drop	0.34 to 0.38 No load to full load

OUTPUT

Efficiency	93 to 99%
Output Noise & Ripple	MI-200: 2mVp-p typical 10%-100% load MI-J00: 6mV p-p typical 10%-100% load
Output Voltage Accuracy	99.5% to 100.5%
DC Voltage Drop	0.34 to 0.38 No load to full load
Full Load Current	MI-RAM-I1: 10A MI-RAM-M1: 10A MI-RAM-I2: 20A MI-RAM-M2: 20A

OPERATING

Isolation Characteristics	Input / Output / Base 250V rms

ENVIRONMENTAL

Part number	**MI-RAM-I2**	**MI-RAM-M2**
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	12hrs 25 cycles	96hrs 200 cycles
Temperature Cycling	48 hrs, 12cycles -65°C to +100°C	48hrs, 12cycles -65°C to +105°C
Test Data Supplied at these Temperatures	-40°C, +80°C	-55°C, +80°C
Derating	NAVMATP-4855-1A	

STANDARDS AND APPROVALS

Spikes	±50% nom line voltage per MIL-STD-6051 50ms
Conducted EMI	CE102 per MIL-STD-461D
Environmental (MIL-STD-810D)	
Altitude – Method 500.2	40,000 ft
Humidity - Method 507.2	86,240 % hours
Acceleration – Method 513.3	9 g's
Vibration – Method 514.3	20 g's
Shock – Method 516.3	40 g's
Reliability (MIL-HDBK-217E)	
25°C Ground Benign	885,917 hours
50°C Naval Sheltered	87,068 hours
65°C Airborne inhabited cargo	49,153 hours

MECHANICAL

Weight	85 grams
Dimensions	57.9 x 61 x 12.7mm

Electrical Considerations

TRANSIENT RESPONSE AND DYNAMIC RANGE:

Full rated noise attenuation will be maintained at the MI-RAM output for step load changes up to 10% of the rated output current of the source converter, with the MI—RAM exhibiting an underdamped output excursion of less than 10mV pp. Some degradation in noise attenuation during the transient response period following the step may be exhibited for larger load changes. Adding output capacitance to the MI-RAM will increase the dynamic rejection range.

SENSE CONNECTION:

Both sense-in and sense-out connections are provided on the MI-RAM. Sense-in connections must be connected to the corresponding sense connections on the Vicor converter from which the MI-RAM is powered. Sense-out pins on the MI-RAM must be connected either directly to the MI-RAM power-output pins, or at the point of load.

OUTPUT LOAD CHARACTERISTICS:

When used in combinations with Vicor DC-DC converters, and with sense leads connected, the MI-RAM will be stable for any non-inductive load.