

M8254 SERIES

DC/DC POWER SUPPLY



DESCRIPTION

The M8254 DC-DC power supply is a Dual Output, high density, highly efficient military grade rugged DC to DC converter capable of delivering up to 200W output power. Features include; High efficiency, low noise, internal EMI filters and can support parallel operation for higher power applications.

FEATURES

- DC/DC Dual output power supply up to 200W
- Standard input version: 9 to 48 VDC
- Complies with MIL-STD-461F
- Output #1 12V to 48V @ Max 150W
- Output #2 3.3V to 12V @ Max 40W
- High efficiency
- Full galvanic isolation between Input, Chassis and Outputs.
- Inrush Current Limiter
- External Inhibit (On/Off)
- Fixed switching freq. (250 kHz)
- EMI filters included
- Remote sense compensation for Auxiliary output
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery
- High density
- Conduction cooled via the baseplate
- J-STD-001B and IPC-610A Class-3 workmanship
- Conformal Coating per MIL-I-46058C and IPC-CC-830

HOW TO ORDER

PART NUMBER	INPUT	OUTPUTS		OUTPUT POWER
	VOLTAGE RANGE	OUTPUT #1	OUTPUT #2	VOLTAGE
CF-02EM8254100	10 to 48 VDC	28V/6A	5V/3A	183W
CF-02EM8254101	10 to 48 VDC	24V/7A	15V/1.5A	190.5W
CF-02EM8254102	10 to 48 VDC	6V/16A	12V/2A	120W

ELECTRICAL SPECIFICATIONS:

DC INPUT:		
Voltage and Frequency: 10 to 36 VDC 9 to 48 VDC	Isolation: Input to Output: 200VDC Input to Case: 200VDC	Reverse Polarity Protections: Protection for unlimited time

DC OUTPUT:		
Voltage Regulation: ±1% or better (no load to full load, low line to high line, -46°C to +85°C).	Ripple & Noise: Max. 1% of output voltage without external capacitance. When connected to system capacitance ripple drops significantly.	Overvoltage: Protection OutputActive Over-Voltage Protection: The power supply shall protect the outputs from overvoltage greater than 110% of the specified output voltage.
Current Limit: & Overload Continuous protection (10-30% above maximum current) for unlimited time (Hiccup).	Over Temp Protection: Output shuts down if base plate temperature exceeds +105°C ± 5°C. Automatic recovery when baseplate temperature returns to below +95°C ± 5°C.	
Efficiency: Minimum 80%-85%	Isolation Output to Case: 200VDC	

SPECIFICATIONS (CONT.):

Control & Indication	INHIBIT Input	The INHIBIT signal is used to turn the power supply ON and OFF. To turn the power supply OFF, apply a TTL “0” signal or SHORT to SIGNAL RTN. To turn the power supply ON, apply a TTL “1” signal or leave this pin OPEN. If not used (always ON), leave this pin OPEN. This signal is referenced to SIGNAL RTN.
	VOUT SENSE	The SENSE is used to achieve accurate load regulations at load terminals (this is done by connecting the pins directly to the load’s terminals). The use of remote sense has a limit of voltage dropout between converter’s output and load terminals up to 0.25V. When not used connect SENSE to OUT and SENSE RTN to OUT RTN.
Environment Designed to meet MILSTD-810F	Temperature	Operating: -46°C to +85°C (at baseplate) Storage: -46°C to +105°C
	Humidity	Method 514.8 , 516.8 Procedure I & VI Up to 95%-100%
	Salt-fog	Method 509.4
	Altitude	Method 514.8 & 516.8 Procedures I & VI Up to 10,000 ft. AGL
	Mechanical Shock	Functional Shock IAW MIL-STD-810H, Method 516.8, Procedure I, SRS Curve for Functional Test for Ground Equipment (40g peak, 45hz crossover frequency).
	Vibration	Functional Vibration IAW MIL-STD-810H, Method 514.8, Procedure-I, Cat 4, Composite Wheeled Vehicle Unknown Orientations (Figure 514.8C-6 /Table 514.8C-VIII).
	Fungus	Method 509.5 Does not support fungus growth, in accordance with the guidelines of MIL-STD-454, Requirement 4.
EMI	MIL-STD-461F	Meets* MIL-STD-461F CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103 *EMC Compliance achieved with 5µH LISN, shielded harness and static resistive load.
Reliability	150,000 hours, calculated per MIL-HDBK-217F Notice 2 at +85°C baseplate, Ground Fix conditions.	
Cooling Requirements	The M8254 is a baseplate cooled unit. The base of the M8254 should be thermally attached to a suitable heatsink that maintains it below +85 °C	
Form factor	3.091” wide, 1” high and 5.512” deep. For detailed dimensions and tolerances see Drawing: M8254001	
Weight	0.503 gram	

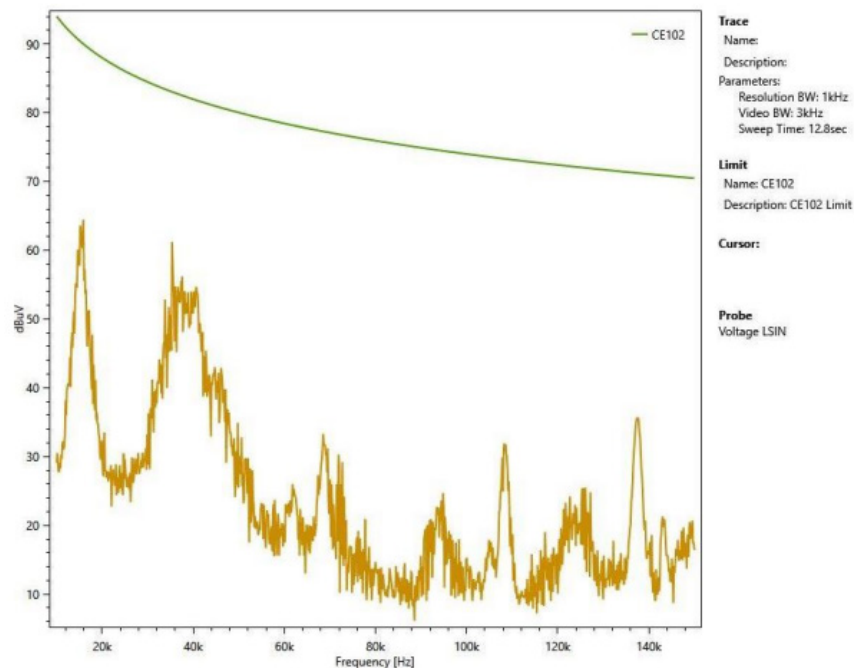
PIN ASSIGNMENT:

Connector type: DD44M4000C or eq.
Mates with: M24308/2-13F or eq.

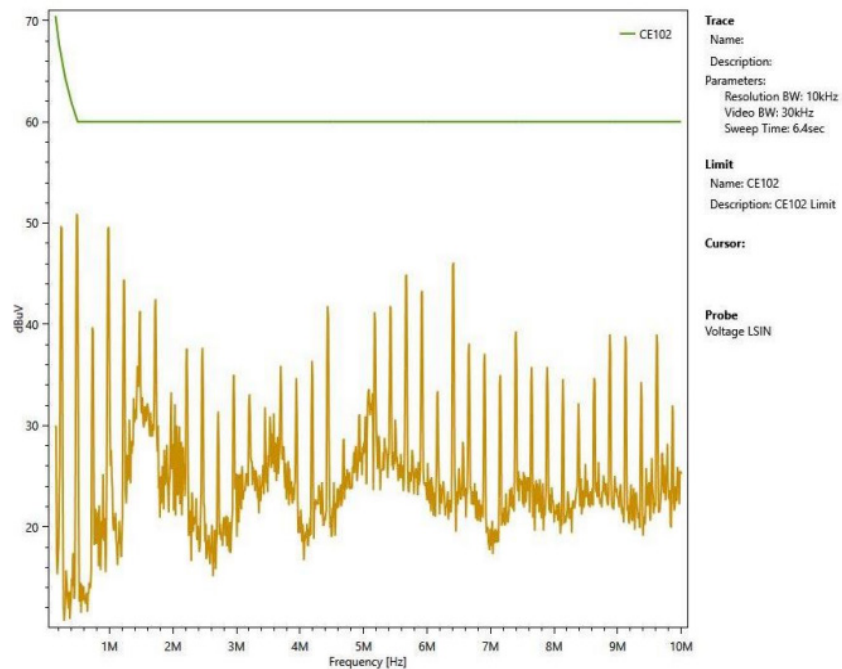
Function	Pin No.
VIN	12,13,14,27,28,29,42,43
VIN RTN	9,10,11,25,26,39,40,41
OUT 1	1,2,16,17,31,32
OUT 1 RTN	3,4,18,19,33,34
+SENSE 1	36
-SENSE 1	35
OUT 2	5,6,20,21
OUT 2 RTN	7,8,22,23
+SENSE 2	38
-SENSE 2	24
INHIBIT	44
SYN	30
SIGNAL RTN	15
CHASSIS (Not Used)	37

TEST RESULTS:

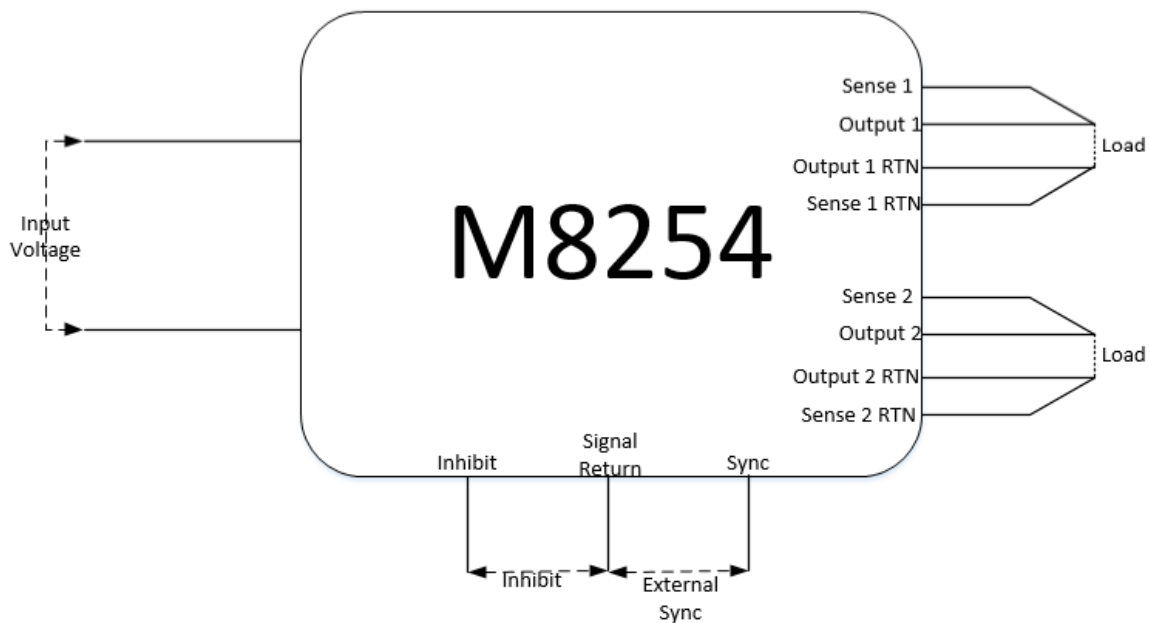
CE102 MIL-STD-461F Conducted Emission, 10 kHz -150 kHz
Line (nominal input voltage, full load)



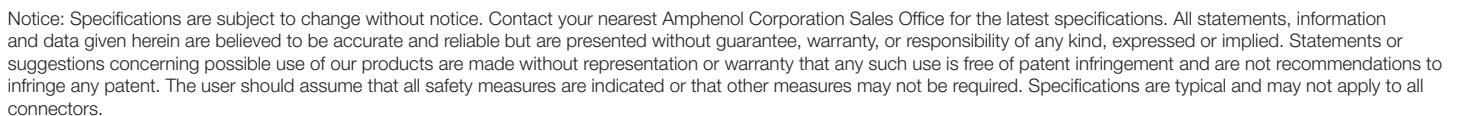
CE102 MIL-STD-461F Conducted Emission, 150 kHz -10 MHz
Line (nominal input voltage, full load)



TYPICAL CONNECTION DIAGRAM:



OUTLINE DIMENSIONS:



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