

M8647-38

THE MOST COMPLETE
MINIATURE, HIGH DENSITY,
QUAD OUTPUT,
DC/DC CONVERTER
(UP TO 125W)

APPLICATIONS

Military, Ruggedized, Telecom, Industrial

SPECIAL FEATURES

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Fixed switching frequency (250 KHz)
- External synchronization capability
- TTL logic enable
- EMI/RFI filters included
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

ENVIRONMENTAL

Meets or exceeds MIL-STD-810D

Temperature:

Operating -55°C to $+90^{\circ}\text{C}$ (baseplate)

Storage -55°C to $+125^{\circ}\text{C}$

RELIABILITY

150,000 hours, calculated per
MIL-STD-217F at $+85^{\circ}\text{C}$ baseplate,
ground fixed.



ELECTRICAL SPECIFICATIONS

DC INPUT

DC Input range: 18 to 70 VDC

Input transient protection:

All models meet or exceed (no damage)

MIL-STD-1275A (100V for 50 mSec) and

MIL-STD-704A, MIL-STD-704D (80V for 0.1 Sec)

Over-voltage shutdown with auto-recovery

Efficiency: up to 80%

EMI/RFI:

All models meet or exceed MIL-STD-461C

CE03, CE07, CS01, CS02, CS06, RE02, RS02, RS03

Isolation:

200V between Input and Output

200V between Input and Case

DC OUTPUT (floating)

+5V/8A, +12V/1A, -12V/1A, +28V/2A

Line/Load regulation:

Less than 1% (no load to full load, -55°C to $+90^{\circ}\text{C}$)

Ripple and Noise: 50mVp-p, typical (max. 1%)

Current limiting (Hiccup):

Continuous protection for unlimited time

Over voltage protection:

Passive tranzorb on outputs.

Over temperature protection:

Shutdown at baseplate temperature of $+105^{\circ}\text{C}$ ($\pm 5^{\circ}\text{C}$)

Automatic recovery at baseplate temperature

lower than $+95^{\circ}\text{C}$ ($\pm 5^{\circ}\text{C}$)

Isolation:

200V between Output and Input

100V between Output and Case

PIN ASSIGNMENT

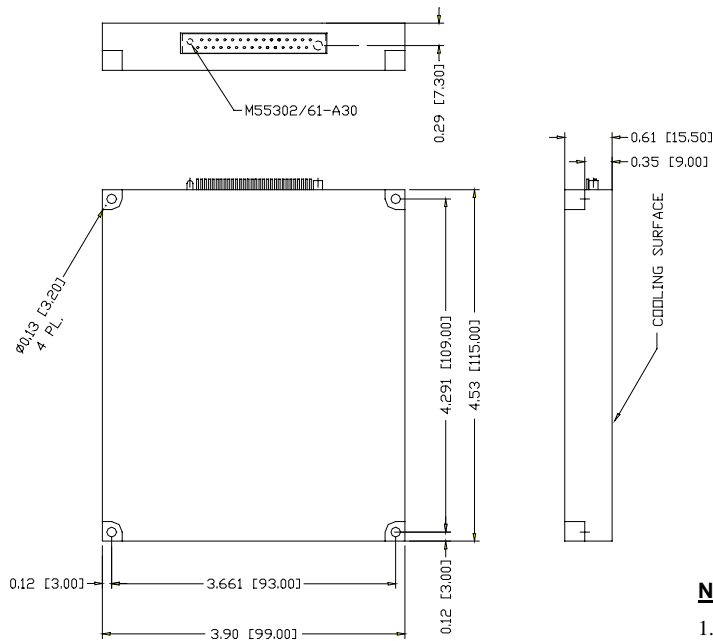
PIN No.	PIN Function
1	+ OUT 1
2	+ OUT 1
3	- OUT 1
4	- OUT 1
5	- OUT 4
6	+ OUT 2
7	- OUT 2
8	+ OUT 3
9	- OUT 3
10	N.C.

PIN No.	PIN Function
11	SIGNAL RTN *
12	- VIN
13	- VIN
14	+ VIN
15	+ VIN
16	+ OUT 1
17	+ OUT 1
18	- OUT 1
19	- OUT 1
20	+ OUT 4

PIN No.	PIN Function
21	+ OUT 2
22	- OUT 2
23	+ OUT 3
24	- OUT 3
25	INHIBIT
26	- VIN
27	- VIN
28	+ VIN
29	+ VIN
30	SYN

* Signal RTN for the INHIBIT and the SYN signals.

OUTLINE DRAWING



* Specifications are subject to change without prior notice by the manufacturer

Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
.XX ±.02 IN
.XXX ±.01 IN
3. Weight: 12.8 Oz (370 gr)
4. Add suffix SL to specify connector with guideset per M55302/57-A30X
5. Add suffix OC to specify connector with guideset per M55302/63-C30 (Opposite Connector with different pin out)

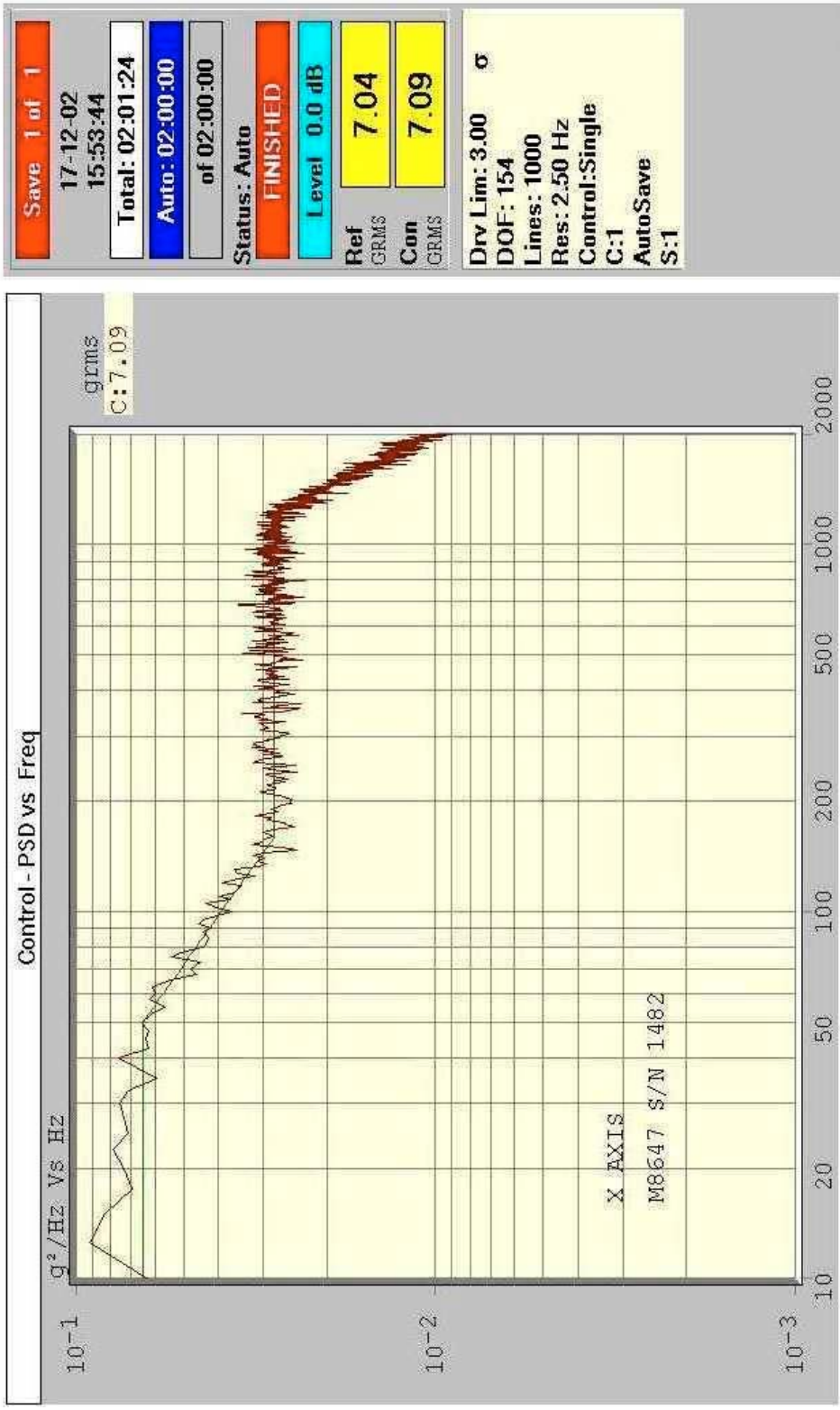
M8647-38 Vibration Test

This model is a vibration hardened version of the M8647 power supply series. The M8647-38 has an enhanced vibration characteristics design, which enables the power supply to be able to withstand prolonged exposure to customer specific spectral density characteristics.

Verification has been performed by a comprehensive vibration test. During the test the UUT output voltages were continuously monitored. The UUT was continuously ON while exposed to endurance levels for a 2 (two) hour period per each axis.

No deviations were monitored during the vibration procedure. The M8647-38 UUT has passed the test successfully.

Following are the vibration output curves for the test.

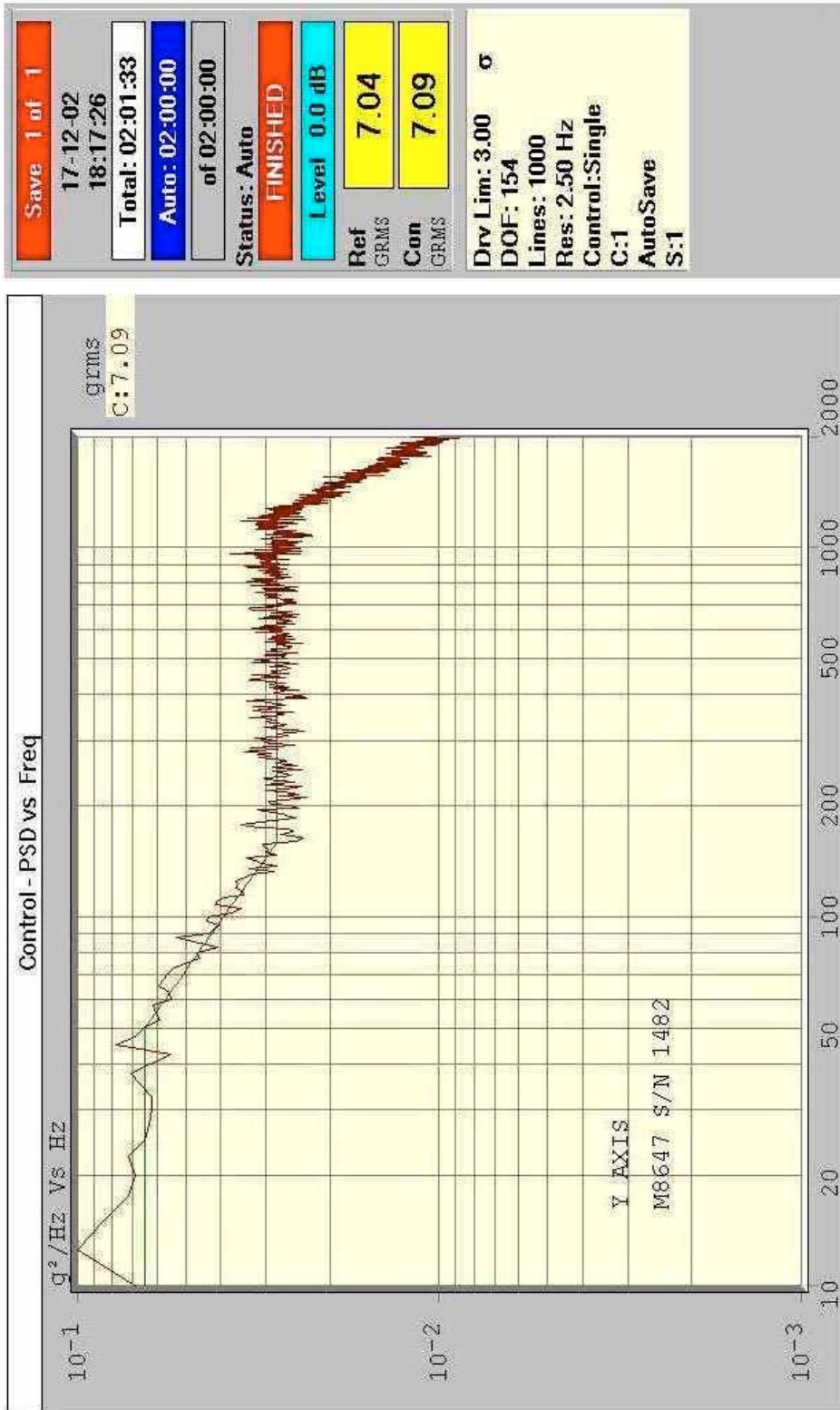


Save 1 of 1
 17-12-02
 15:53:44
 Total: 02:01:24
 Auto: 02:00:00
 of 02:00:00
 Status: Auto
FINISHED
 Level 0.0 dB
 Ref GRMS 7.04
 Con GRMS 7.09
 Drv Lim: 3.00 σ
 DOF: 154
 Lines: 1000
 Res: 2.50 Hz
 Control: Single
 C: 1
 AutoSave
 S: 1

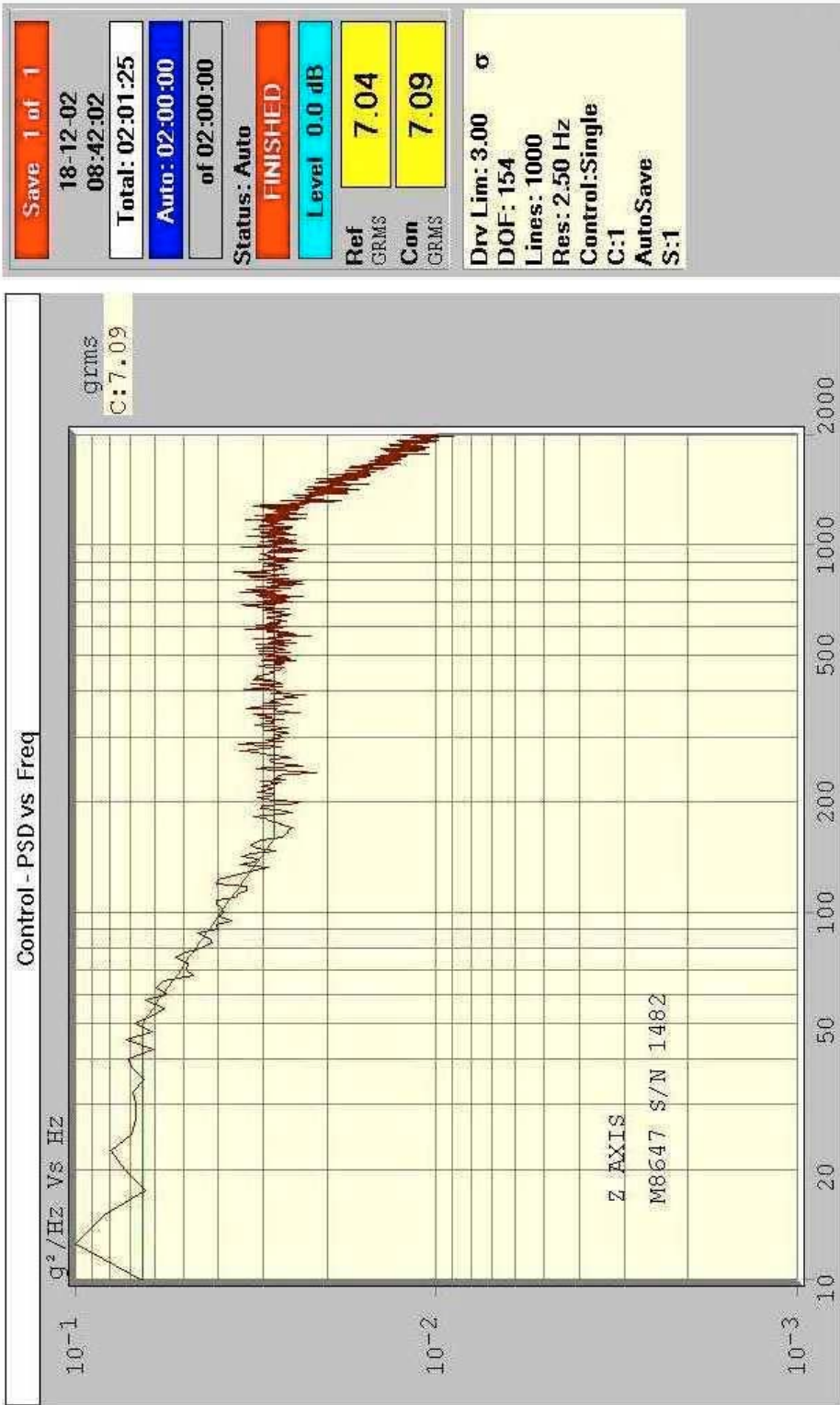
RANDOM SETUP ID: m8647
 SETUP DESCRIPTION: m8647
 RUN NAME: run29
 CH-1: 100.0 mV/g
 CH-2: 100.0 mV/g
 CH-3: 10.00 mV/g
 CH-4: 10.00 mV/g
 RUN DESC:



P.O.BOX 810, 7 FIELD LANE RD., ROUTE 106, BELMONT, NEW HAMPSHIRE 03220, U.S.A.
 TEL: (603)267-8865, FAX: (603)267-7258 WEBSITE: www.milpower.com



RANDOM SETUP ID: m8647
 SETUP DESCRIPTION: m8647
 RUN NAME: run30
 CH-1: 100.0 mV/g
 CH-2: 100.0 mV/g
 CH-3: 10.00 mV/g
 CH-4: 10.00 mV/g
 RUN DESC:



Save 1 of 1

18-12-02
08:42:02

Total: 02:01:25

Auto: 02:00:00
of 02:00:00

Status: Auto
FINISHED

Level 0.0 dB

Ref GRMS 7.04

Con GRMS 7.09

Drv Lim: 3.00 σ

DOF: 154

Lines: 1000

Res: 2.50 Hz

Control: Single

C: 1

AutoSave

S: 1

RANDOM SETUP ID: m8647

SETUP DESCRIPTION: m8647

RUN NAME: run31

CH-1: 100.0 mV/g

CH-2: 100.0 mV/g

CH-3: 10.00 mV/g

CH-4: 10.00 mV/g

RUN DESC:



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