

M8647 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- **MINIATURE**
- **HIGH DENSITY**
- **QUAD OUTPUTS**
- **DC/DC CONVERTER**
- **UP TO 125W**

M8647 SERIES DC/DC POWER SUPPLY

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 Conditions

Meets or exceeds MIL-STD-810D Temperature:

Operating -55°C to +85°C (baseplate)

Storage -55°C to +125°C

Reliability

150,000 hours, calculated per MIL-STD-217F at +85°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 50mSec) and

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

Efficiency: up to 80%

EMI/RFI: Designed to meet MIL-STD-461F*

CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103

Isolation:

200V between Input and Output 200V between Input and Case

DC OUTPUT (floating)

Line/load regulation:

Less than 1% (no load to full load, -

55°C to +85°C) Ripple and Noise:

50mVp-p, typical (max. 1%)

Current limiting (Hiccup):

Continuous protection for unlimited time.

Over voltage protection:

Passive transorb on outputs.

Over temperature protection:

Shutdown at baseplate temperature of +105°C (±5°C) Automatic recovery at baseplate temperature lower than +95°C (±5°C).

Isolation:

200V between Output and Input

100V between Output and case

* Compliance achieved with 5μH LISN, shielded harness and static resistive load.

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PIN ASSIGNMENT

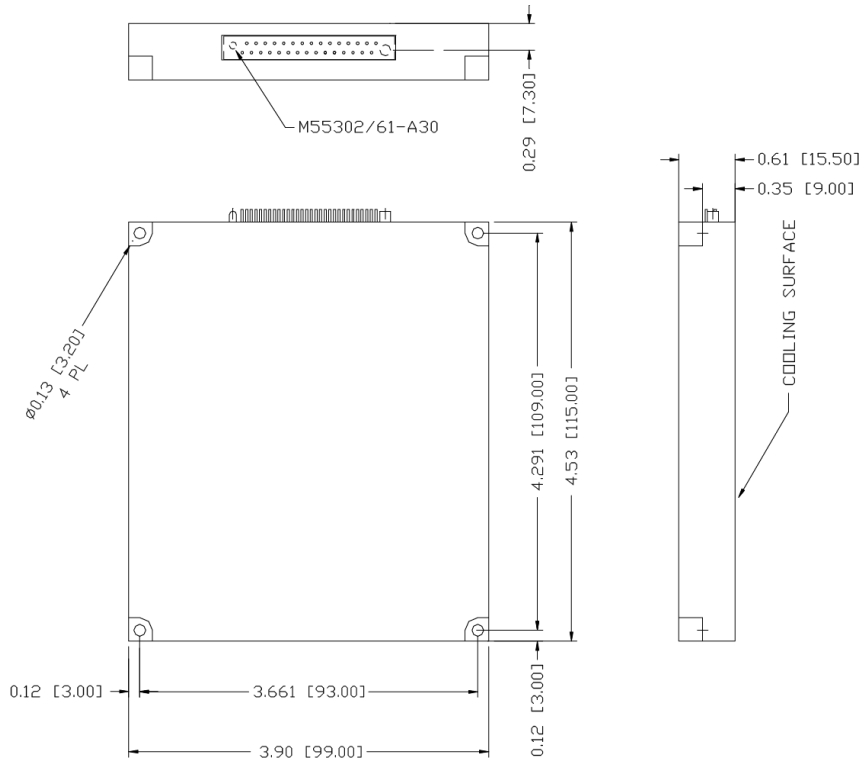
Pin No.	Pin Function
1	+ OUT 1
2	+ OUT 1
3	- OUT 1
4	- OUT 1
5	- OUT 4
6	+ OUT 2
7	- OUT 2
8	+ OUT 3
9	- OUT 3
10	N.C.

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

Optional Variant Model

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.

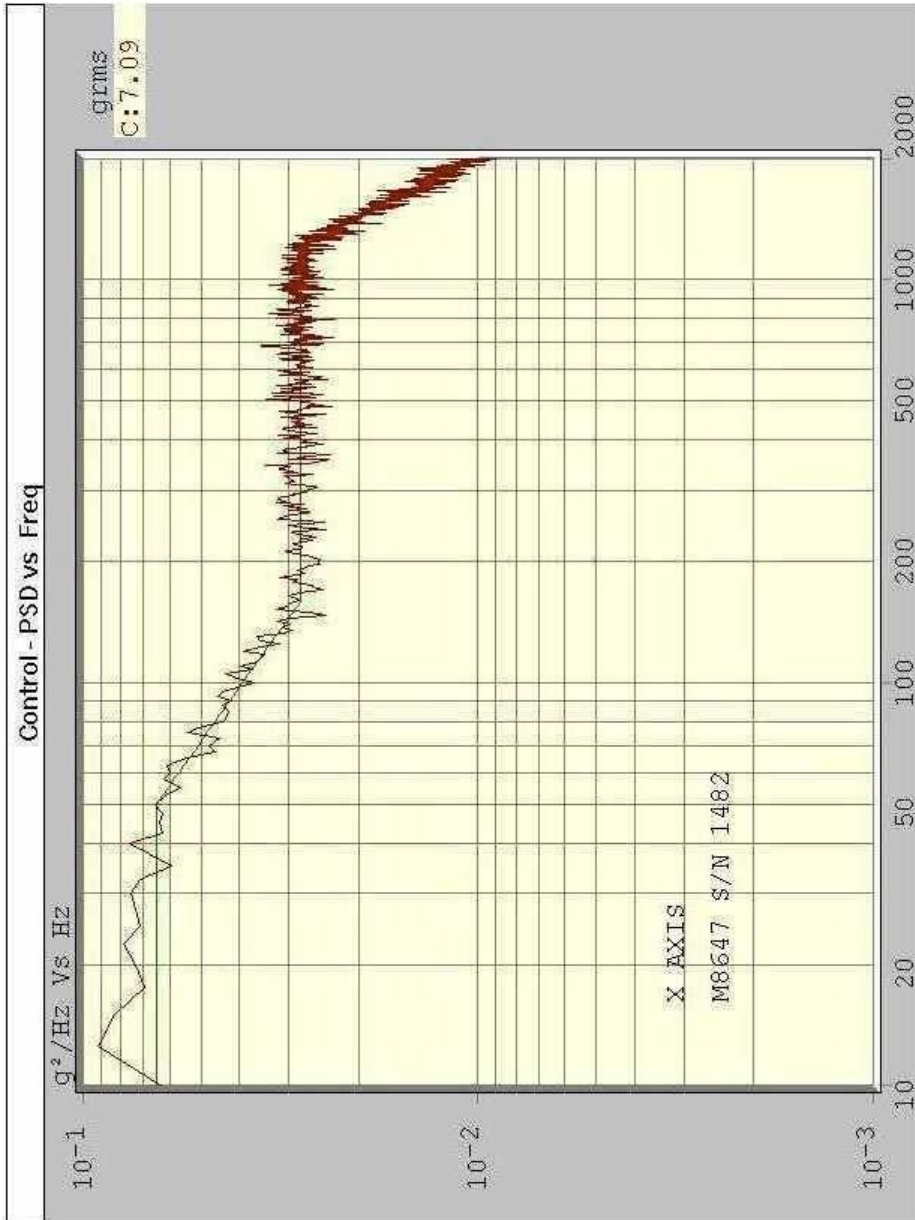
Verification has been performed by a comprehensive vibration test. During the test the UUT output voltages were continuously monitored. The UUT was continuously ON while exposed to endurance levels for a 2 (two) hour period per each axis.

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

Following are the vibration output curves for a test of the M8647-38 variant model.

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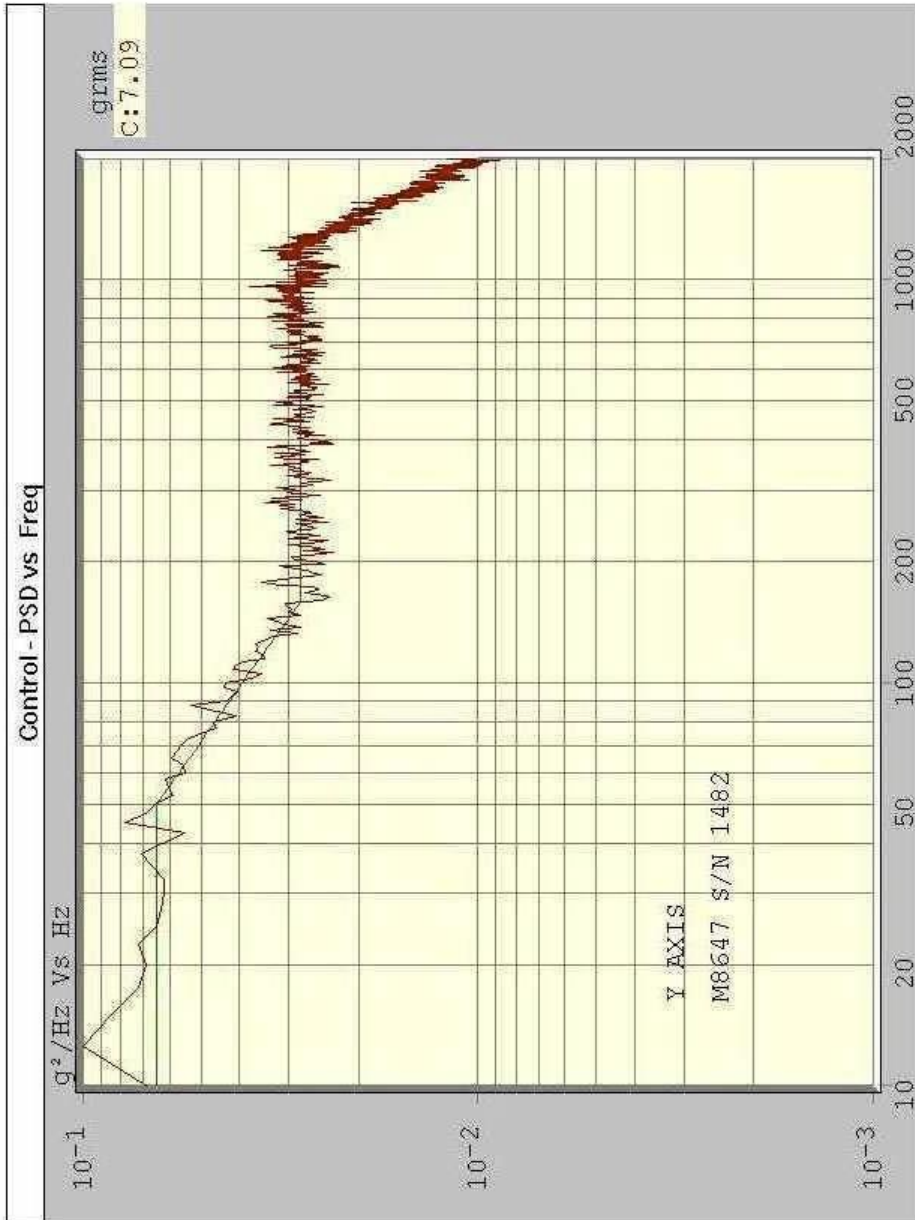
Save 1 of 1
17-12-02
15:53:44
Total: 02:01:24
Auto: 02:00:00
of 02:00:00
Status: Auto
FINISHED
Level 0.0 dB
Ref GRMS 7.04
Con GRMS 7.09
Dry Lim: 3.00 σ
DOF: 154
Lines: 1000
Res: 2.50 Hz
Control: Single
C:1
AutoSave
S:1



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

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Save 1 of 1
17-12-02
18:17:26
Total: 02:01:33
Auto: 02:00:00
of 02:00:00
Status: Auto
FINISHED
Level 0.0 dB
Ref GRMS 7.04
Con GRMS 7.09
Dry 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: 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:

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Save 1 of 1
18-12-02
08:42:02

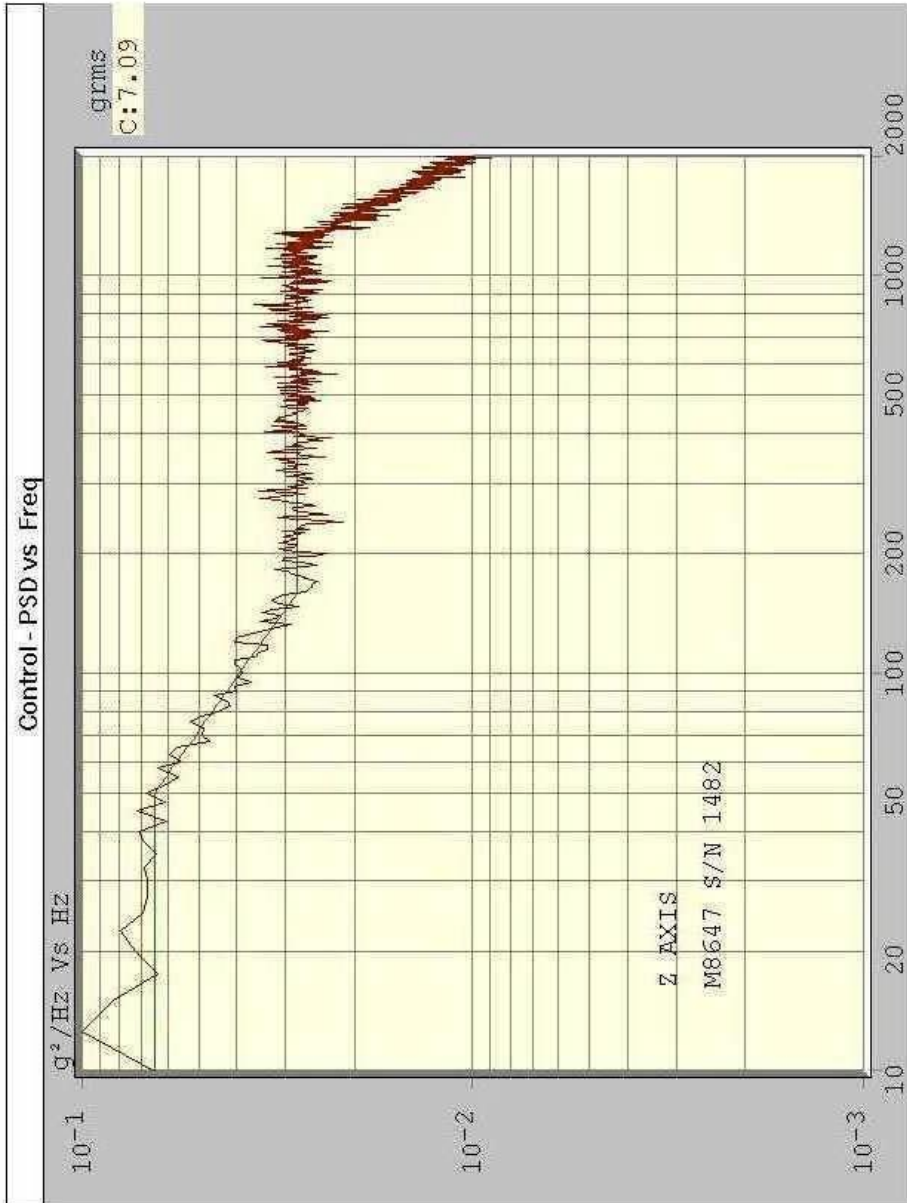
Total: 02:01:25
Auto: 02:00:00
of 02:00:00

Status: Auto
FINISHED

Level 0.0 dB

Ref GRMS: 7.04
Con GRMS: 7.09

Dry 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