

M8253 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- MINIATURE
- HIGH DENSITY
- DUAL OUTPUT
- DC/DC CONVERTER
- UP TO 150W



Applications

Military, Ruggedized, Telecom, Industrial Power Supply

Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- External synchronization capability
- TTL logic enable
- EMI filters included
- Non-latching protections:
 - Overload/short-circuit
 - Input under/over lockout
 - Over temperature

Environmental Conditions

Meets or exceeds MIL-STD-810D

Temperature:

Operating: $-55\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ (baseplate)

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

Reliability

At least 150,000 hours
calculated IAW MIL-HDBK-217F
at $+85\text{ }^{\circ}\text{C}$ baseplate, ground fix conditions.

Electrical Specifications

DC INPUT

Normal voltage range: 18 to 48 V_{DC}

Abnormal transient protection:

No damage (may shut down and restart)
IAW MIL-STD-1275A (100 V / 50 ms) and
MIL-STD-704A (80 V for 0.1 s)

Efficiency: up to 87%

EMC: Designed to meet* MIL-STD-461F
CE101, CE102, CS101, CS114, CS115,
CS116, RE101, RE102, RS101, RS103

Isolation:

Input to Output: 200 V_{DC}

Input to Case: 200 V_{DC}

DC OUTPUT (floating)

Voltage regulation: Up to $\pm 1\%$ (no load to full
load, $-55\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$)

Ripple and Noise: 50 mV_{p-p}, typical (max. 1%)

Current limiting (Hiccup):

Continuous protection for unlimited time

Over voltage protection:

Secondary active protection and passive
transorb on outputs.

Over temperature protection:

Shutdown if baseplate temperature exceeds
 $+105\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$. Automatic recovery upon
cooldown to below $+95\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$

Isolation:

Output to Case: 100 V_{DC}

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

Pin Assignment**Connector type:** M55302/61-A36 or eq.**Mating connector type:**

- M55302/65-36S (removable crimp pins, turning jackset)
 - M55302/65-36H (removable crimp pins, hex turning jackset)
- (other possibilities exist)

Pin No.	Function
9, 10, 27, 28	INPUT
11, 12, 29, 30	INPUT RTN
8	SIGNAL RTN *
6	SYNC
7	INHIBIT
13, 14, 15, 16, 33	OUT1
17, 18, 34, 35, 36	OUT 1 RTN
32	OUT 1 SENSE
31	OUT 1 SENSE RTN
1, 2, 19, 20, 21	OUT 2
3, 4, 5, 22, 23	OUT 2 RTN
25	OUT 2 SENSE
24	OUT 2 SENSE RTN
26	CHASSIS

* INHIBIT and the SYNC signals are referenced to SIGNAL RTN.

Functions and Signals

INHIBIT signal

The **INHIBIT** signal is used to turn the power supply ON and OFF.

TTL “1” or OPEN – will turn on the power supply (For normal operation leave the signal not connected).

TTL “0” – will turn off the power supply.

SYNC signal

The SYNC signal is used to allow the power supply frequency to sync with the system frequency.

The system frequency can be 250 kHz ± 10 kHz.

When not connected, the power supply will work at internal frequency, close to 250 kHz ± 10 kHz.

SIGNAL RTN

The **SIGNAL RTN** is used as grounding for **SYNC** and **INHIBIT** signals.

This is referenced to the **INPUT RTN** pin.

SENSE #

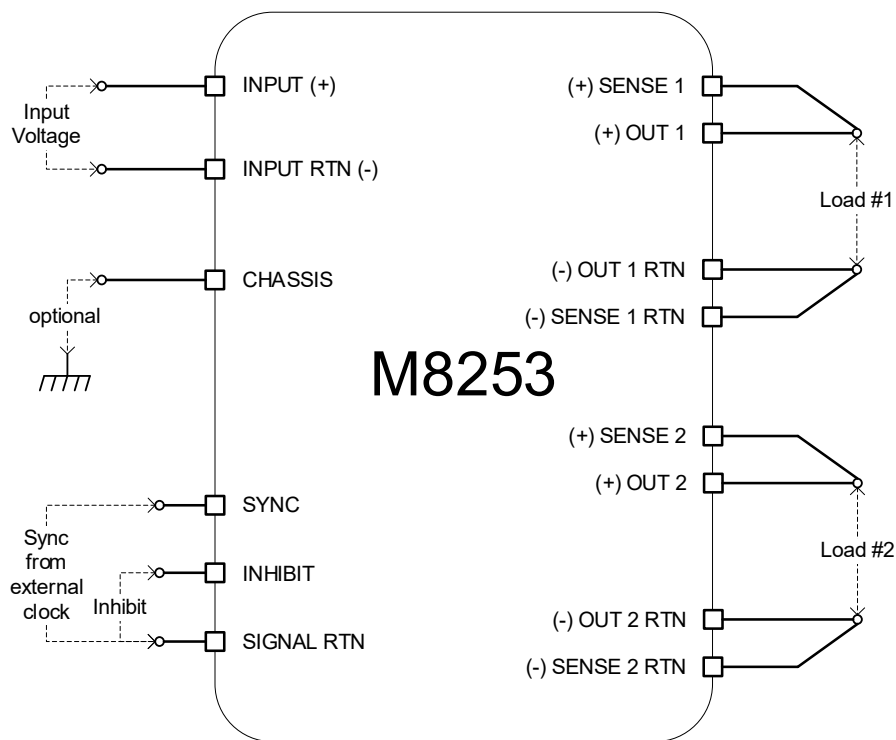
The **SENSE #** is used to achieve accurate load regulation at the load terminals. This is done by connecting these pins directly to their respective load terminals. The use of remote sense has a limit of voltage dropout between converter’s output and load terminals of 2-10% of voltage output.

When not used connect **SENSE #** to **OUT #** and **SENSE # RTN** to **OUT # RTN** for each of the outputs.

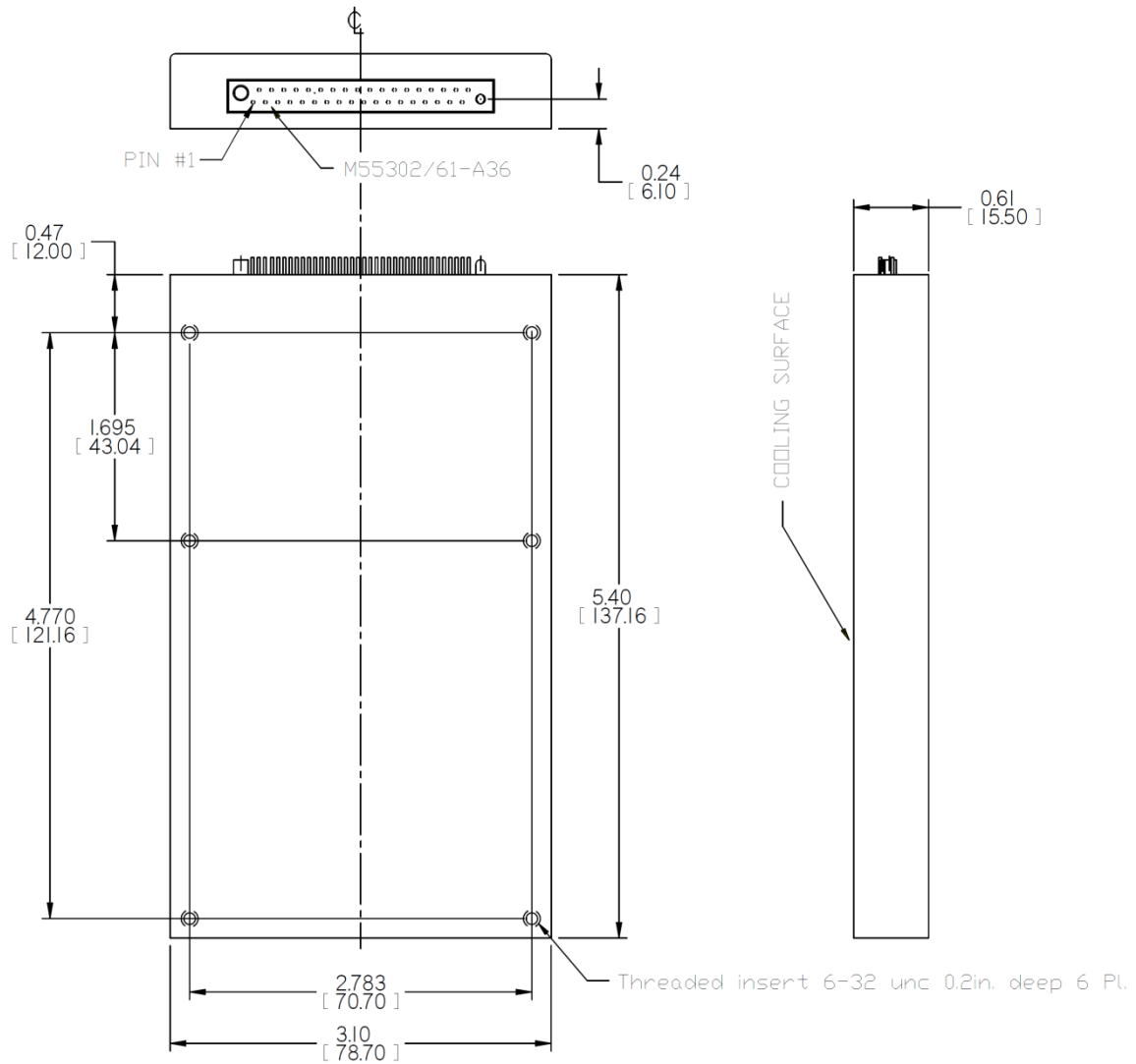
CHASSIS

This chassis pin allows connection of the unit chassis to system chassis.

Typical Connection Diagram



Outline Drawing



Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
 .XX ± .02 in
 .XXX ± .01 in
3. Weight: Approx. 10.23 ± 0.35 oz (290 ± 10 g)

Note: Specifications are subject to change without prior notice by the manufacturer