

M8253 Series— DC/DC Power Supply

M8253 SERIES
DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- **MINIATURE**
- **HIGH DENSITY**
- **DUAL OUTPUT**
- **DC/DC CONVERTER**
- **UP TO 200W**

M8253 Series— DC/DC Power Supply

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°C to $+85^{\circ}\text{C}$
(baseplate)

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

Reliability

At least 150,000 hours
calculated IAW MIL-HDBK-217F
at $+85^{\circ}\text{C}$ 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°C to $+85^{\circ}\text{C}$)

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

Current limiting:

Continuous protection for unlimited
time

Over voltage protection:

Secondary active protection and passive
transorb on outputs.

Over temperature protection:

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

Isolation:

Output to Case: 100 V_{DC}

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Pin Assignment

Option A:

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.

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Option B:

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
7, 8, 25, 26	VIN (+)
9, 10, 27, 28	VIN RTN (-)
12, 13, 14, 15, 30, 31, 32	OUTPUT 1 (+)
16, 17, 18, 33, 34, 35, 36,	OUTPUT 1 RTN (-)
11	OUTPUT 1 SENSE (+)
29	OUTPUT 1 SENSE RTN (-)
1,2, 19	OUTPUT 2 (+)
3,20,21	OUTPUT 2 RTN (-)
23	OUTPUT 2 (+)
22	OUTPUT 2 RTN (-)
4	SYNC
5	INHIBIT
6	SIGNAL RTN
24	CHASSIS

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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 $250 \text{ kHz} \pm 10 \text{ kHz}$.

When not connected, the power supply will work at internal frequency, close to $250 \text{ kHz} \pm 10 \text{ kHz}$.

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 4%-8% from voltage output.

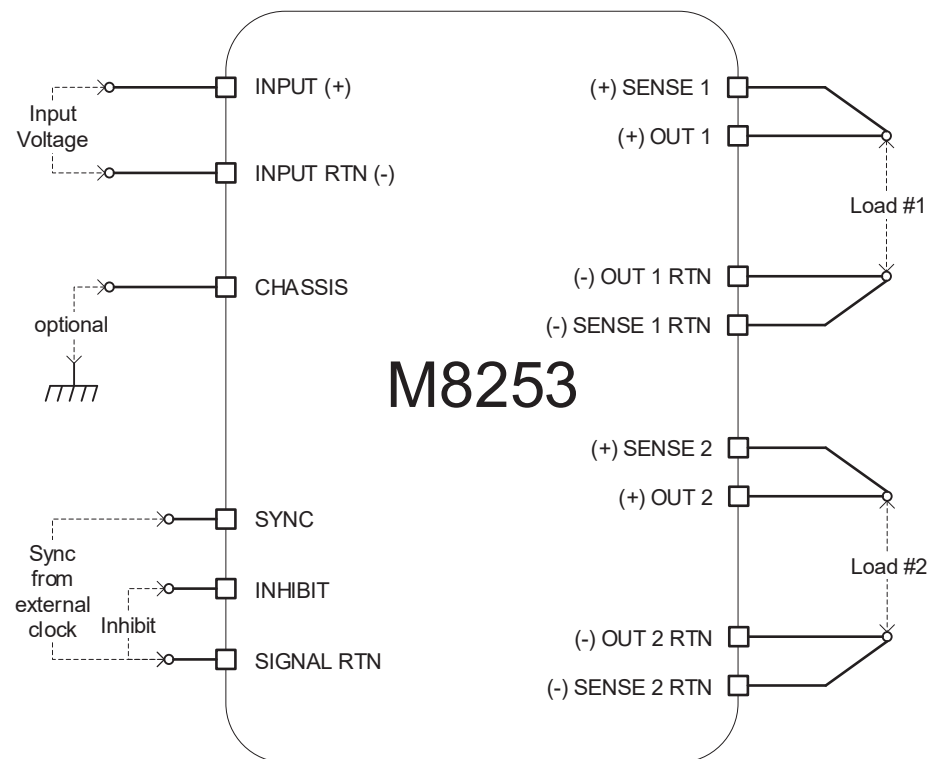
When not used connect **SENSE #** to **OUT #** and **SENSE # RTN** to **OUT # RTN** for each of the outputs.

CHASSIS

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

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Typical Connection Diagram



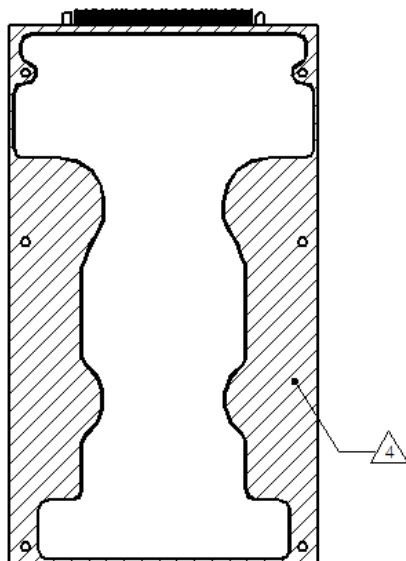
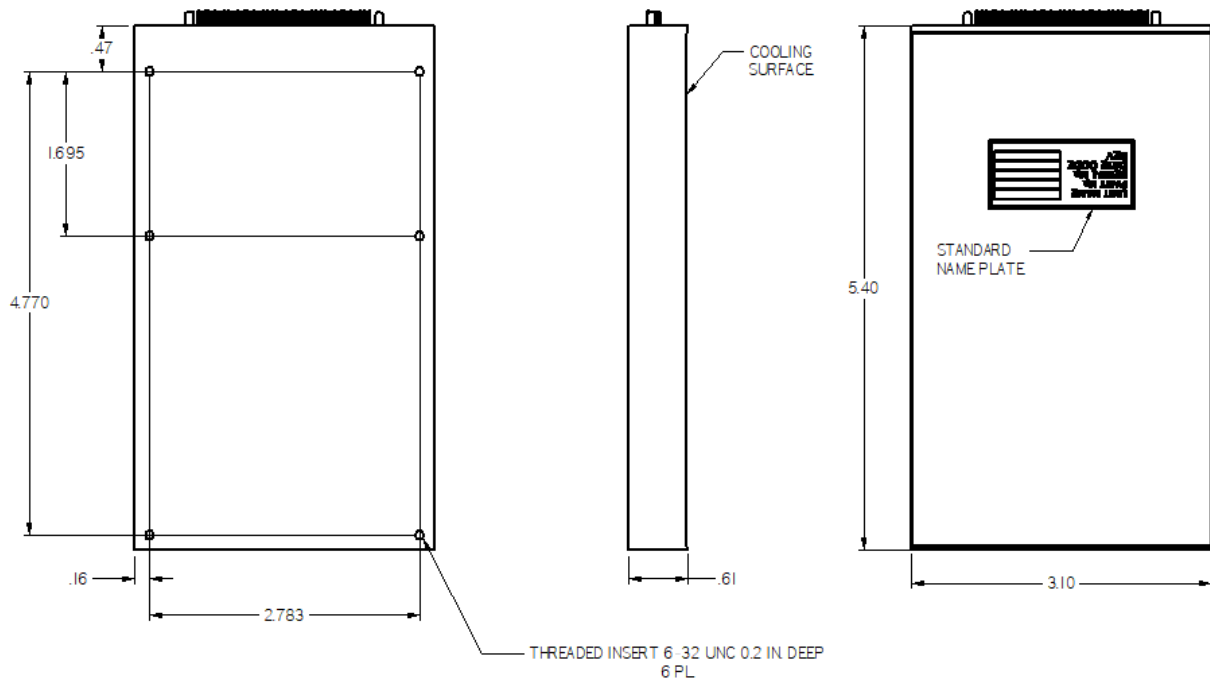
M8253 Series– DC/DC Power Supply**M8253 Standard configuration table:**

Part number	Input	Outputs		Output Power
	Voltage range	Output #1	Output #2	
M8253100	18 to 48 VDC	2.5V/25A	3.3V/10A	95.5W
M8253101	18 to 48 VDC	3.3V/25A	5V/10A	132.5W
M8253102	18 to 48 VDC	5V/10A	12V/12A	194W
M8253103	18 to 48 VDC	28V/5A	5V/12A	200W
M8253104	18 to 48 VDC	28V/5A	12V/5A	200W
M8253105	18 to 48 VDC	48V/3A	5V/10A	194W

Other options available – consult factory

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Outline Drawing



BOTTOM VIEW

Notes

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

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