

M811 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- MINIATURE, HIGH DENSITY
- EIGHT OUTPUTS
- UP TO 145 W
- DC/DC POWER SUPPLY



Applications

Military, Ruggedized, Telecom, Industrial Power Supply

Special Features

- Miniature size
- High efficiency
- Wide input range
- Up to 9.9 W/in³
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- TTL logic enable
- EMI filters included
- Indefinite short-circuit protection with auto-recovery
- Input over-voltage shutdown with auto-recovery
- Over-temperature shutdown with auto-recovery

Environmental Conditions

Designed to meet MIL-STD-810D

Temperature:

Operating: -55 °C to +85 °C (at baseplate)

Storage: -55 °C to +125 °C

Reliability

150,000 hours, calculated IAW MIL-HDBK-217F

Notice 2 at +85 °C baseplate, Ground Fix conditions.

Electrical Specifications

DC INPUT

DC Input range: 18 to 48 V_{DC} Input

transient protection:

All models meet or exceed (no damage) MIL-STD-1275A (100 V for 50 ms) and MIL-STD-704A, MIL-STD-704D (80 V for 0.1 s)

Over-voltage shutdown with auto-recovery

Efficiency: Up to 82%

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)

Line/Load regulation:

Less than 2% (no load to full load, -55 °C to +85 °C)

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

Current limiting (Hiccup):

Continuous protection for unlimited time

Over-voltage protection:

Passive transistor on output.

Over-temperature protection:

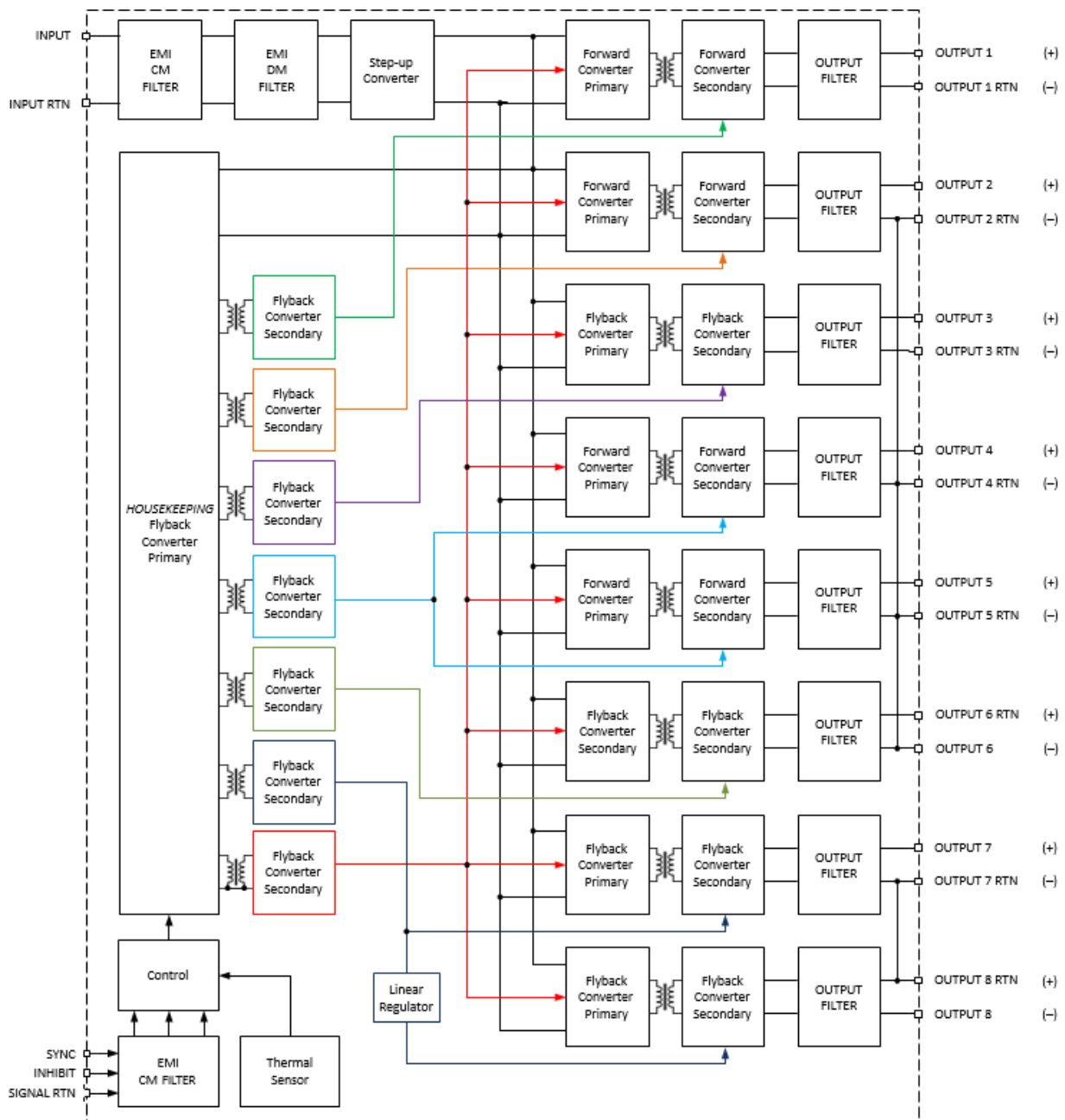
Shutdown if baseplate temperature rises above +100 °C ± 5 °C. Automatic recovery when baseplate cools down to below +90 °C ± 5 °C.

Isolation:

Output to Case: 100 V_{DC}

*EMC compliance when tested with 5 H LISNs, shielded harness and static resistive load.

Operational Block Diagram



Outputs Configuration Range

Output #	Voltage Range	Current Range	Power Range
1	2.5 to 28 V _{DC}	0 to 3 A	0 to 40 W
2	1.5 to 28 V _{DC}	0 to 4 A	0 to 40 W
3	2.5 to 28 V _{DC}	0 to 3 A	0 to 20 W
4	2.5 to 28 V _{DC}	0 to 5 A	0 to 30 W
5	2.5 to 28 V _{DC}	0 to 8 A	0 to 30 W
6	1.25 to 28 V _{DC}	0 to 5 A	0 to 15 W
7	2.5 to 28 V _{DC}	0 to 2.5 A	0 to 15 W
8	-2.5 to -28 V _{DC}	0 to 2.5 A	0 to 15 W
Total			0 to 145 W

Outputs Isolation (Ground RTN groups)

- All outputs are isolated from the input.
- Outputs are separated into the following four galvanically isolated groups:
 - Group A: Output #1
 - Group B: Output #2, #4, #5 and #6
 - Group C: Output #3
 - Group D: Outputs #7 and #8

Pin Assignment

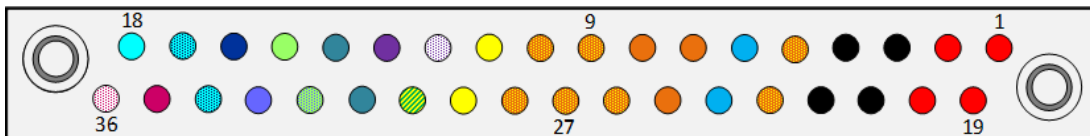
Connector type: M55302/61-A36 or eq.

Mating connector type: M55302/62-A36M (solder cup termination) or M55302/66-32M (#22 AWG crimp termination) or eq.

Pin #	Function	P	
1	INPUT	+	●
2	INPUT	+	●
3	INPUT RTN	-	●
4	INPUT RTN	-	●
5	OUT 2,4,5,6 RTN	-	●
6	OUT 6	+	●
7	OUT 5	+	●
8	OUT 5	+	●
9	OUT 2,4,5,6 RTN	-	●
10	OUT 2,4,5,6 RTN	-	●
11	OUT 4	+	●
12	OUT 1 RTN	-	○

Pin #	Function	P	
13	OUT 1	+	●
14	OUT 2	+	●
15	INHIBIT	+	●
16	OUT 8	-	●
17	OUT 7,8 RTN		●
18	OUT 7	+	●
19	INPUT	+	●
20	INPUT	+	●
21	INPUT RTN	-	●
22	INPUT RTN	-	●
23	OUT 2,4,5,6 RTN	-	●
24	OUT 6	+	●

Pin #	Function	P	
25	OUT 5	+	●
26	OUT 2,4,5,6 RTN	-	●
27	OUT 2,4,5,6 RTN	-	●
28	OUT 2,4,5,6 RTN	-	●
29	OUT 4	+	●
30	CHASSIS		●
31	OUT 2	+	●
32	SIGNAL RTN	-	●
33	SYNC	+	●
34	OUT 7,8 RTN		●
35	OUT 3	+	●
36	OUT 3 RTN	-	○



Signals Description

INHIBIT (pin 31)

The ***INHIBIT*** signal is used to turn the power supply ON and OFF. TTL “1” or OPEN – Power supply active (output turned on).

TTL “0” or SHORT to ***SIGNAL RTN*** – Power supply inhibited (output turned off). If this function is not required, leave this pin unconnected.

This signal is referenced to ***SIGNAL RTN*** (pin 32)

SYNC (pin 33)

The ***SYNC*** signal is used to synchronize the power supply's switching frequency to system's clock. If this function is not required, leave this pin unconnected - the power supply will use its internal clock.

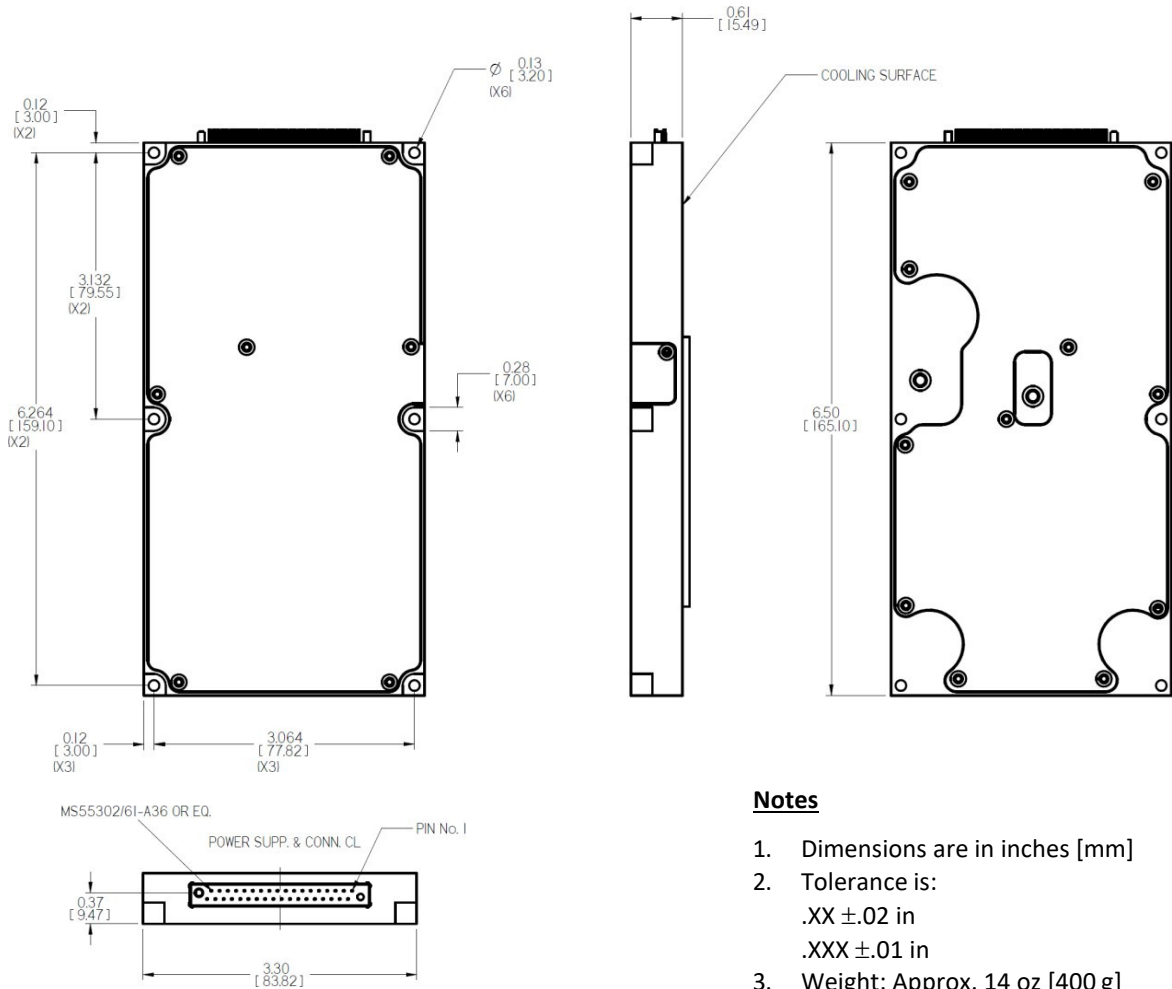
External clock frequency can be between 240 kHz to 260 kHz, with duty cycle of 40% to 60%. Valid clock voltage level is between 5 to 12 V.

This signal is referenced to ***SIGNAL RTN*** (pin 32)

SIGNAL RTN (pin 32)

Both ***INHIBIT*** and ***SYNC*** signals are referenced to this pin. This pin is referenced to ***INPUT TN*** (pins 3, 4, 21 and 22).

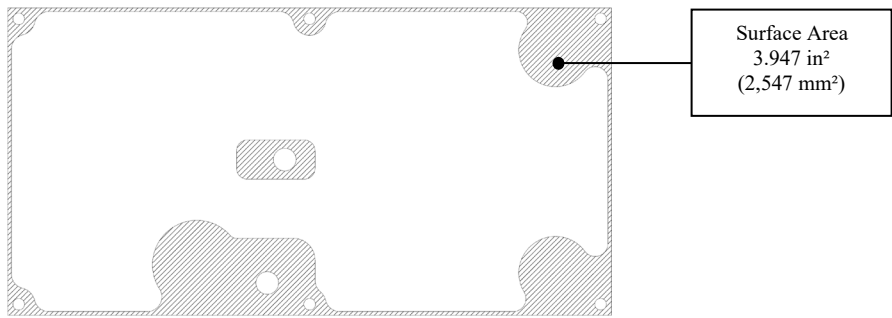
Outline Drawing



Notes

1. Dimensions are in inches [mm]
2. Tolerance is:
 .XX ±.02 in
 .XXX ±.01 in
3. Weight: Approx. 14 oz [400 g]

Heat Dissipation Surface Area



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