

## M811 SERIES

*DC/DC POWER SUPPLY*



### PRODUCT HIGHLIGHTS

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



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## Applications

Military (airborne, mobile, shipboard), Ruggedized, Telecom, Industrial Power Supply

## Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Outputs groups isolation
- Fixed switching frequency (~250 kHz)
- External synchronization capability
- Remote inhibit
- EMI filters included
- Non-latching protections:
  - Overload / short-circuit protection
  - Input under/over-voltage lockout
  - Over temperature shutdown

## Environmental Conditions

Meets or exceeds MIL-STD-810G

### 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 Fixed conditions.

## Electrical Specifications

### DC INPUT

Voltage range: 18 to 70 V<sub>DC</sub>

Transient protection: protected against abnormal surge IAW MIL-STD-1275A (100 V / 50 ms) and MIL-STD-704A (80 V / 0.1 s)

Efficiency: Up to 80%

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

### Isolation:

Input to Output: 200 V<sub>DC</sub>

Input to Case: 200 V<sub>DC</sub>

### DC OUTPUTS

#### Voltage regulation:

≤ ±1% (low to high line voltage, no load to full load, -55 °C to +85 °C)

Ripple and Noise: 50 mV<sub>p-p</sub>, typ. (max. 1%)

#### Overcurrent protection:

current limit (CC) beyond threshold.

Over voltage protection: Passive protection.

#### Over temperature protection:

Shutdown if baseplate temperature exceeds +105 °C ± 5 °C; Automatic recovery upon baseplate cooldown to below +95 °C ± 5 °C.

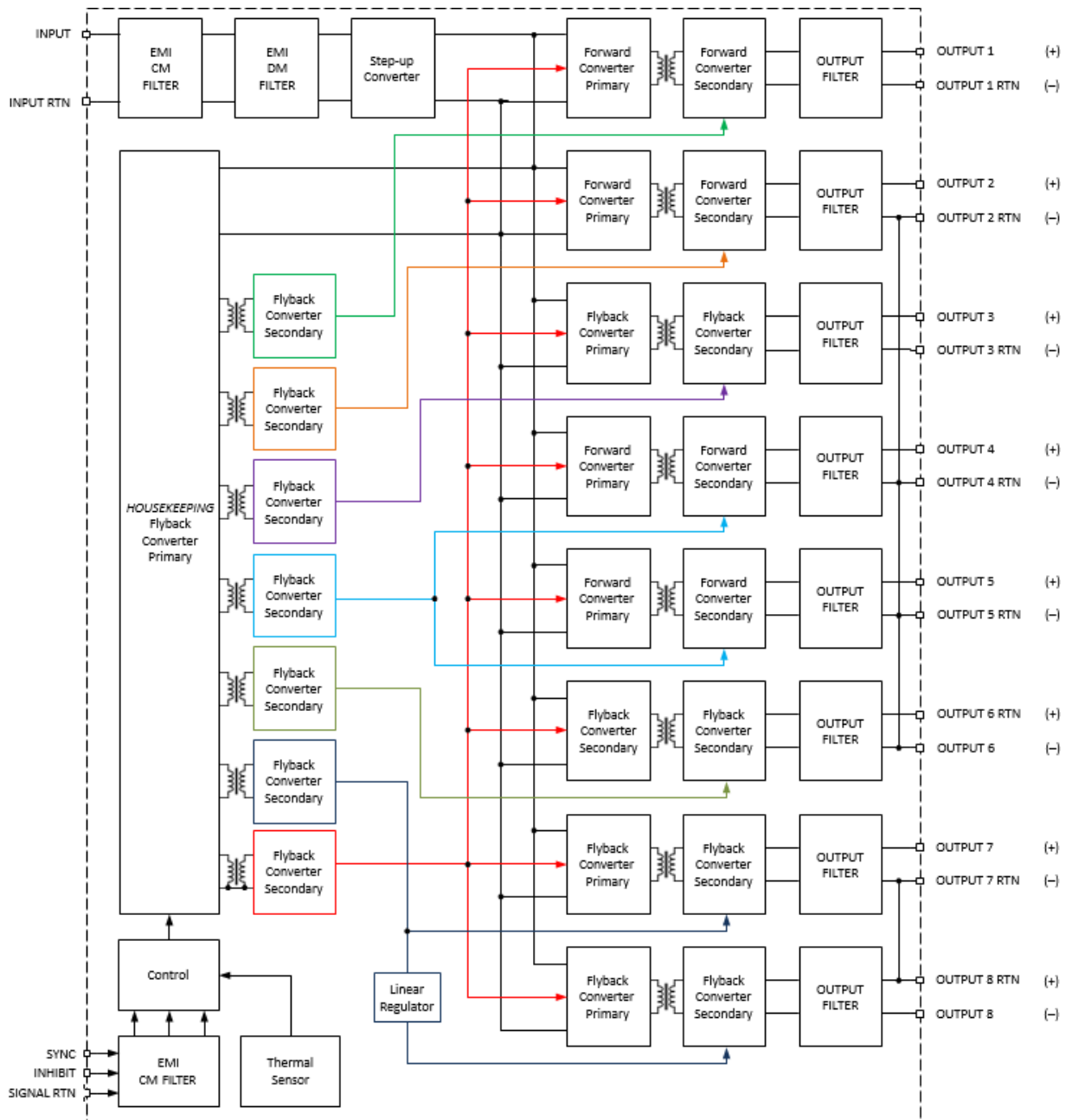
### Isolation:

Output and Case: 100 V<sub>DC</sub>

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\*EMC compliance achieved when tested with 5 µH 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 <sub>DC</sub>	0 to 3 A	0 to 40 W
2	1.5 to 28 V <sub>DC</sub>	0 to 4 A	0 to 40 W
3	2.5 to 28 V <sub>DC</sub>	0 to 3 A	0 to 20 W
4	2.5 to 28 V <sub>DC</sub>	0 to 5 A	0 to 30 W
5	2.5 to 28 V <sub>DC</sub>	0 to 8 A	0 to 30 W
6	1.25 to 28 V <sub>DC</sub>	0 to 5 A	0 to 15 W
7	2.5 to 28 V <sub>DC</sub>	0 to 2.5 A	0 to 15 W
8	-2.5 to -28 V <sub>DC</sub>	0 to 2.5 A	0 to 15 W
<b>Total</b>			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**

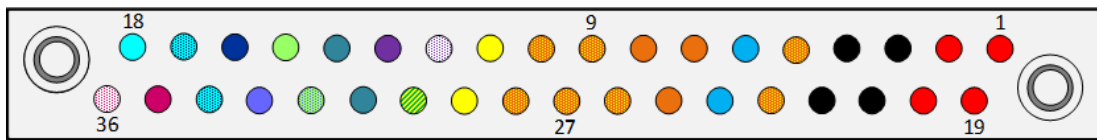
**Connector type:** M55302/61-A36 or eq.

**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.

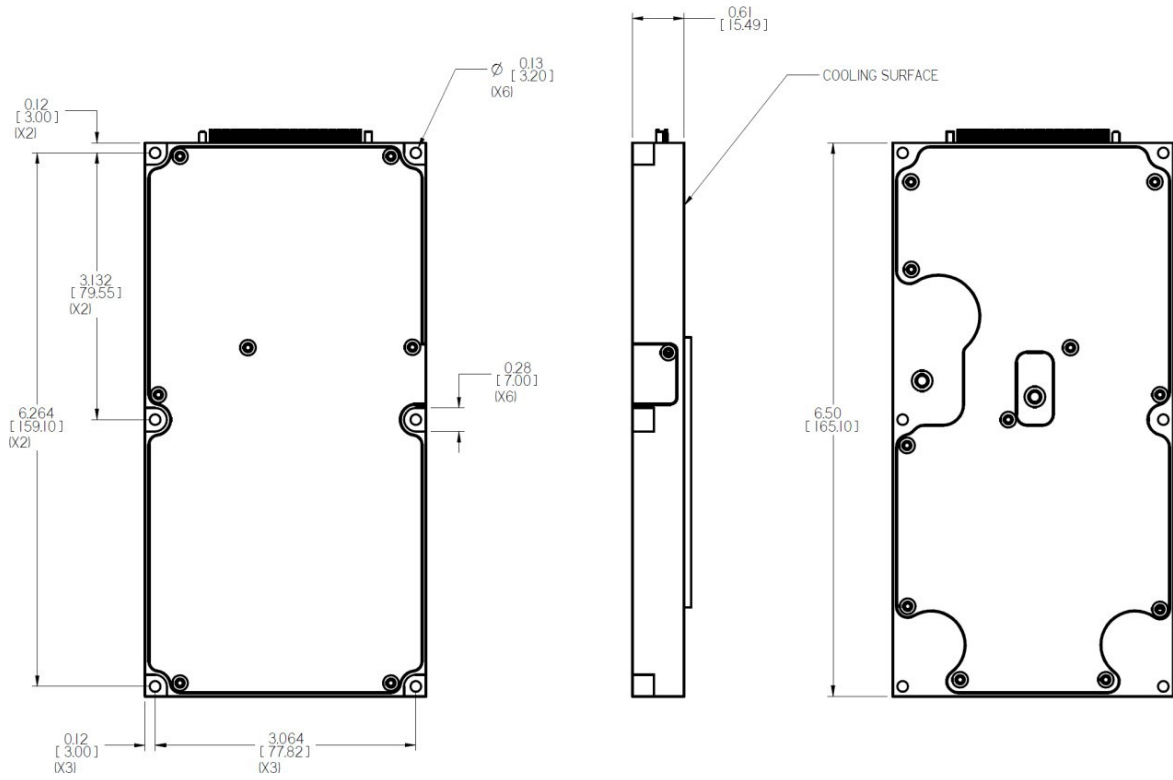
External clock frequency can be between 240 kHz to 260 kHz, with duty cycle of 40% to 60%. Valid clock voltage level is between 5 to 12 V.

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).

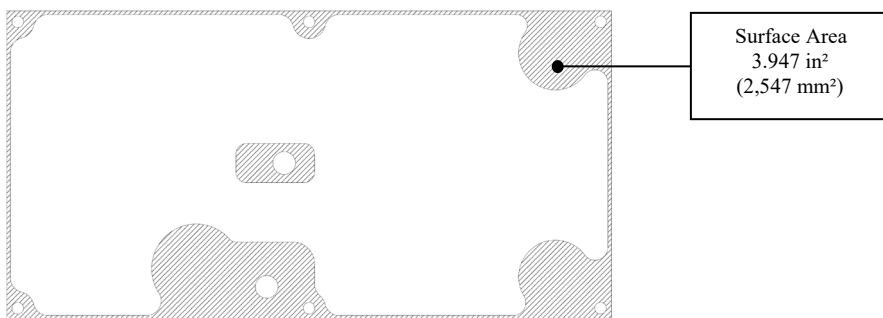
**Outline Drawing**



**Notes**

1. Dimensions are in inches [mm]
2. Tolerance is:  
 .XX  $\pm$ .02 in  
 .XXX  $\pm$ .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**