M6211 SERIES

MINIATURE, HIGH DENSITY, HIGH EFFICIENCY, SINGLE OUTPUT, DC/DC CONVERTERS

(UP TO 200W)

Applications

Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial

Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Remote sense
- External On/Off Inhibit
- Zero Voltage Switching Technology
- Fixed switching frequency (250 KHz)
- External synchronization capability
- EMI/RFI filters included
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

Electrical Specifications

DC Input:
DC Input range: 18 to 48 VDC, per MIL-STD-704E.
No damage for:
MIL-STD-1275A (100V for 50mSec)
MIL-STD-704A (80V for 0.1 Sec)

DC Output:
Output range -1.5V to 28V
Output current – max 40A

Isolation:
200V between Input and Output
200V between Input and Case
100V between Output and Case

Line/Load regulation:
Less than 1% (no load to full load, –55°C to +85°C).

Efficiency :
Typical 90-92% - (full load, room temperature)

EMI/RFI:
Design to meet or exceed MIL-STD-461C CE03, CE07, CS01, CS02, CS06, RE02, RS02, RS03

Ripple and Noise:
Less than 50mVp-p, typical (max. 1%) without external capacitance. When connected to system capacitance ripple drops significantly.

Load Transient Overshoot and undershoot
Output resistance at load change of 50%-100% is 30-200 mΩ (depending on output voltage). Output back to steady stated within 300-500µSec

Turn on Transient
Voltage overshoot at during power on is less than 3% nominal voltage.

Protections *

Input
- **Under voltage protection** – unit protects itself (no damage) below 16.5Vdc.
- **Over voltage protection** – unit protects itself (no damage) above 52Vdc

Output
- **Electronic over voltage protection** – Internal control protects unit (no damage) 10% above nominal voltage.
- **Passive tranzorb on outputs** – 20% above nominal voltage.
- **Current limiting** – Continuous protection (10-30% above maximum current) for unlimited time (Hiccup).

General
- **Over temperature protection:** Shutdown at base plate temperature of +105°C (±5°C) Automatic recovery at base plate temperature lower than +95°C (±5°C)

* Thresholds and protections can be modified / removed – please consult factory.

MILPOWER SOURCE
DIVISION OF QUASAR POWER TECHNOLOGIES INC.
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TEL: (603)267-8865, FAX: (603)267-7258 WEBSITE: www.milpower.com

Environmental

Design to Meet MIL-STD-810F

Temperature:
Operating: –55°C to +85°C (base plate)
Storage: –55°C to +125°C

Humidity:
Method 507.4 - Up to 95%.

Altitude:
Method 500.4, Procedure I & II, 40,000 ft. and 70,000 ft. Operational

Vibration and Shock:
Shock - Saw-tooth, 20g peak, 11mS.
Vibration - Figure 514.5C-17. General minimum integrity exposure. (1 hour per axis.)

Salt Fog:
Method 509-4

Reliability
150,000 hours, calculated per MIL-STD-217F at +85°C base plate, Ground fixed.

* All environmental requirements can be tailored per customer needs – please consult factory.

Environmental Stress Screening (ESS)

Including random vibration and thermal cycles is also available. **Please consult factory for details.**

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Pin Assignment

PIN No.	PIN Function
1	- VOUT
2	- VOUT
3	- VOUT
4	- VOUT
5	+VOUT
6	+VOUT
7	+VOUT
8	+VOUT
9	- SENSE
10	N.C.
11	INHIBIT

PIN No.	PIN Function
12	+VIN
13	+VIN
14	- VIN
15	-VIN
16	- VOUT
17	- VOUT
18	- VOUT
19	- VOUT
20	- VOUT
21	+VOUT
22	+VOUT

PIN No.	PIN Function
23	+VOUT
24	+VOUT
25	+ SENSE
26	SIGNAL RTN
27	SYN IN
28	+VIN
29	- VIN
30	- VIN
31	- VOUT
32	- VOUT
33	- VOUT

PIN No.	PIN Function
34	- VOUT
35	+VOUT
36	+VOUT
37	+VOUT
38	+VOUT
39	+VOUT
40	N.C.
41	+VIN
42	+VIN
43	- VIN
44	CHASSIS

* All output parallel pins should be connected together for best performance.

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.

SYN IN signal

The SYNC IN signal is used to allow the power supply frequency to sync with the system frequency. The system frequency should be 250Khz ±10Khz.
When not connected the power supply will work at 250KHZ.

SIGNAL RTN

The INPUT SIGNAL RTN is referred to the input.
This is used as grounding for SYNC IN and INHIBIT signals.

SENSE

The SENSE is used to achieve accurate load regulations at load terminals (this is done by connecting the pins directly to the load's terminals).
The use of remote sense has a limit of voltage dropout between converter's output and load terminals of 2 - 5% of voltage output.
When not used connect +SENSE to +VOUT and –SENSE to –VOUT

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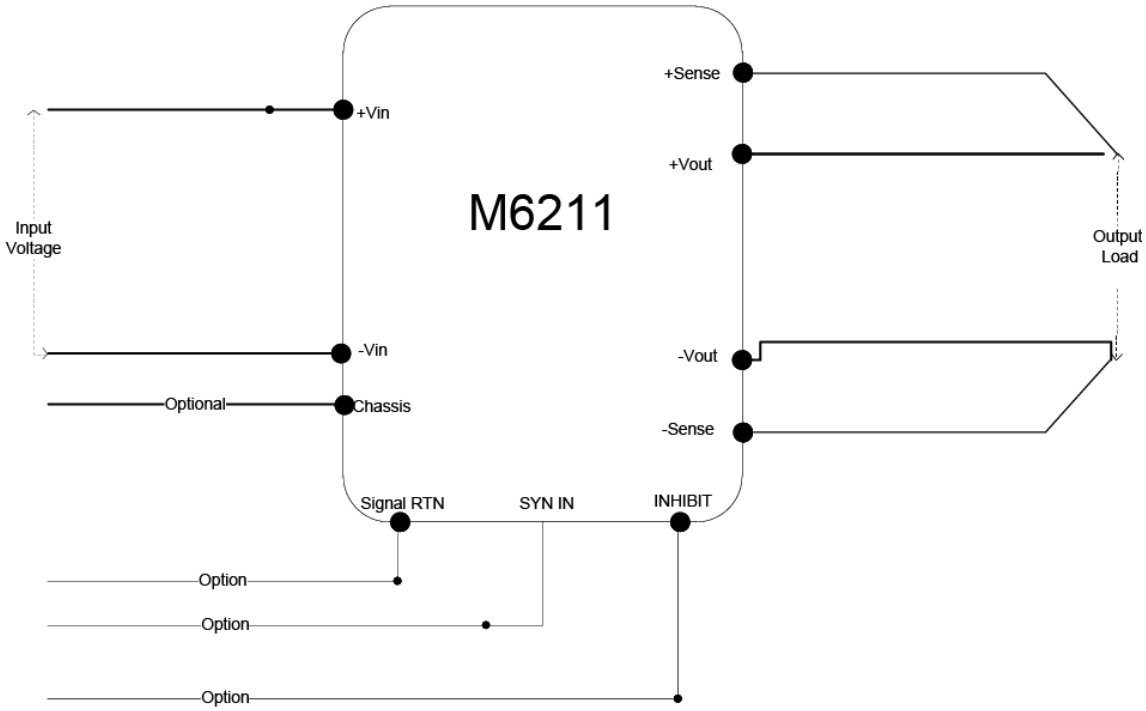
Typical Connection



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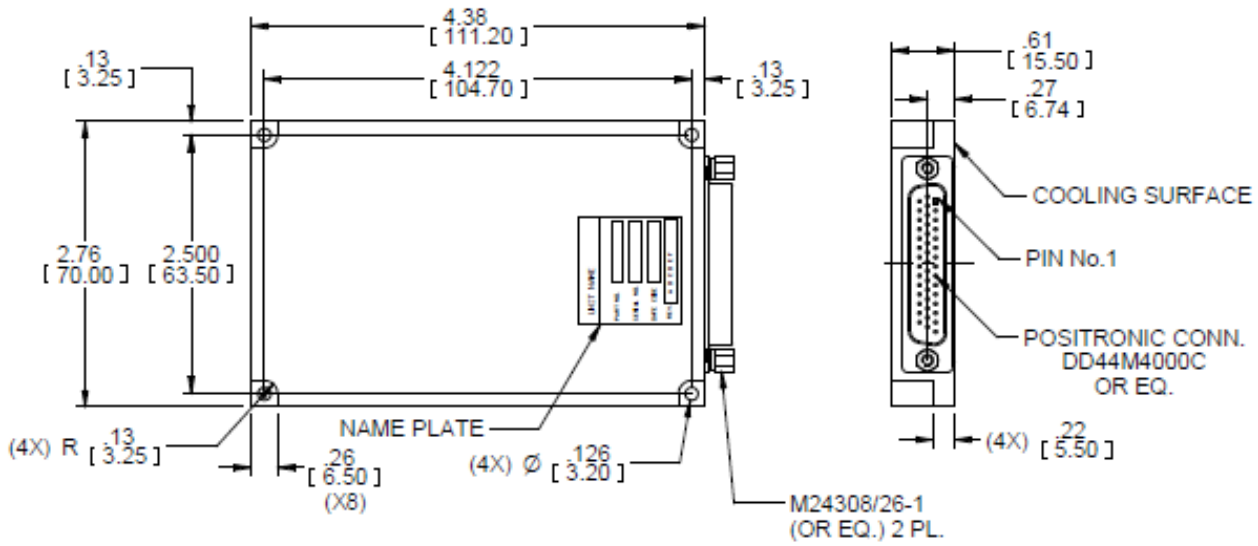
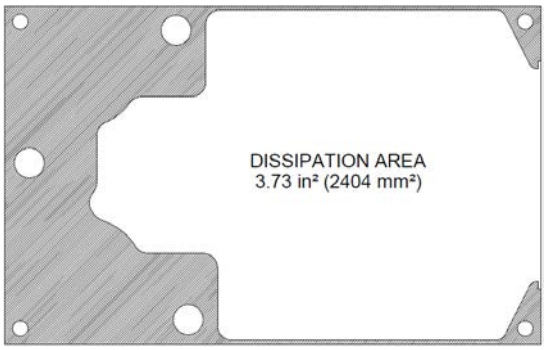
Outline Drawing



Heat Dissipation Surface



Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
   .XX ±.01 IN
   .XXX ±.005 IN
3. Weight: Approx. 200gr (7.05 Oz)
4. Mounting holes can be modified – please consult factory.
5. Parasolide 3D module is available for download on site.

* Specifications are subject to change without prior notice by the manufacturer.

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