GPFC250 Commercial/GPFM250 Medical

250 Watt Global Performance Switchers

GLOBAL PERFORMANCE SWITCHERS

FEATURES:

- **3.6 watts/cu.in. power density**
- **Compact size (5.0" x 8.0" x 1.75")**
- **Power factor corrected to IEC 1000-3-2, Class A**
- **Less than 300 µA leakage**
- **Conducted EMI exceeds FCC Class B and CISPR 22 Class B (Commercial models) and CISPR 11 Class B (Medical models)**
- **Commercial Approved to UL1950, IEC950, EN60950 and CSA 22.2 No. 950**
- **Medical Approved to UL2601-1, IEC601-1/60601-1 and CSA-C22.2 No. 601.1**
- **2-year warranty**
- **RoHS Compliant Model Available (G suffix)**



SPECIFICATIONS

Ac Input
85-264 Vac, 47-63 Hz single phase.

Input Current
Maximum input current 3.7 A at 90 Vac, 60 Hz with full rated load. Input current harmonic content meets the requirements of IEC1000-3-2 Class A for all load conditions.

Hold-upTime
25 ms minimum from loss of ac input at full load, nominal line (115 Vac).
Minimum Load: No minimum load required

Output Power
250 W fan cooled, 180 W convection. See chart for models under 12 V.

Overload Protection
Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit or foldback type depending on model and output. Recovery after fault is automatic. Individual output current limits are a function of load distribution and degree of overload.

Output Noise
0.5% rms, 1% pk-pk, 20 MHz Bandwidth, differential mode. Measured with noise probe directly across output terminals of the power supply.

Transient Response
Main Output–500 µs typical response time for return to within 0.5% of final value for a 50% load step change, Di/Dt< 0.2 A/µs. Maximum voltage deviation is 3.5%.

Remote Sense
Provided as a standard feature. Capable of compensating for 0.25 V total of cabling losses in voltage.

Overvoltage Protection
Built in on all models. Output voltage decay is dependent upon loading.

Voltage Adjustment
Main output ±5%.

Efficency
Minimum 80% on 12-48 V units, 75% on 5 & 3.3 V units at full rated load.

Input Protection
Internal ac fuses provided on all models. Fuses do not blow on overload or short circuit—fuses blow only if catastrophic failure occurs in the unit.

EMI/EMC Compliance
All models include built-in EMI filtering to meet emissions requirements:

EMI SPECIFICATIONS	COMPLIANCE LEVEL
Conducted Emissions GPFC250	EN55022 Class B; FCC Class B
Conducted Emissions GPFM250	EN55011 Class B: FCC Class B
Static Discharge	EN61000-4-2, 6 kV contact, 8 kV air
RF Field Susceptibility	EN61000-4-3, 3 V/meter
Fast Transients/Bursts	EN61000-4-4, 2 kV, 5 kHz
Surge Susceptibility	EN61000-4-5, 1 kV diff., 2 kV com.

Inrush Current
Inrush 240 Vac is less than 37 A, averaged over the first ac half-cycle under cold start conditions. Limiting provided by internal thermistors.

Fan Output
An additional 12 Vdc, 250 mA output suitable for powering a dc fan is included in all models.

Thermal Shutdown
Provided as a standard feature. Designed to protect unit from prolonged over temperature.

Power Fail
TTL or CMOS compatible output goes low (<0.5 V) 8 ms before output voltage drops more than 4% below nominal voltage upon loss of ac power. The signal is factory set to trip when input power can no longer sustain the output.

Temperature Coefficient
0.03% / °C typical on all outputs.

Leakage Current
70µA under normal conditions (132 Vac @ 60 Hz).
Maximum under single fault conditions (264 Vac @ 60Hz), 250 µA.

Power Good
TTL/CMOS compatible output goes high more than 100 ms after V1 reaches the under voltage threshold and should assure that sufficient energy is stored in the input
section to provide normal power fail/shutdown. The signal will fall to a low state (<0.5 V) when V1 goes below 95% of the rated voltage.

External Off
TTL/CMOS compatible input shuts down power converter. A logic high (>2.7 V with 400 uA source) shuts down the power converter. A logic low (<0.5 V) or an open circuit allows the supply to run. 3.3 V & 5 V models require 25 mA source.

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

Commercial Model	Medical Model	RoHS Suffix*	Output No.	Output	Voltage Adjustment	Output Maximum (A)	Output Maximum (B)	OVP Setpoint	Total Regulation	Notes
GPFC250-3.3	GPFM250-3.3	G	1	3.3 V	±5%	36 A	50 A	6.2 ± 0.6 V	2%	C
GPFC250-5	GPFM250-5	G	1	5.1 V	±5%	36 A	50 A	6.2 ± 0.6 V	2%	C
GPFC250-12	GPFM250-12	G	1	12 V	±5%	15 A	21 A	14 ± 1.1 V	2%	C
GPFC250-15	GPFM250-15	G	1	15 V	±5%	12 A	16.7 A	18.5 ± 1.5 V	2%	C
GPFC250-24	GPFM250-24	G	1	24 V	±5%	7.5 A	10.5 A	28 ± 2.5 V	2%	C
GPFC250-28	GPFM250-28	G	1	28 V	±5%	6.5 A	9 A	34 ± 2.8 V	2%	C
GPFC250-48	GPFM250-48	G	1	48 V	±5%	3.8 A	5.3 A	55 ± 4.0 V	2%	C

* Add "G" suffix to part number for RoHS compliant model.
A. Continuous output rating with unrestricted convection cooling.
B. Continuous output rating with 26cfm airflow or "-C" option. Also one minute peak rating for convection cooled.
C. Add "-C" suffix for factory installed cover with fan option.

GPFC250/GPFM250 MECHANICAL SPECIFICATIONS

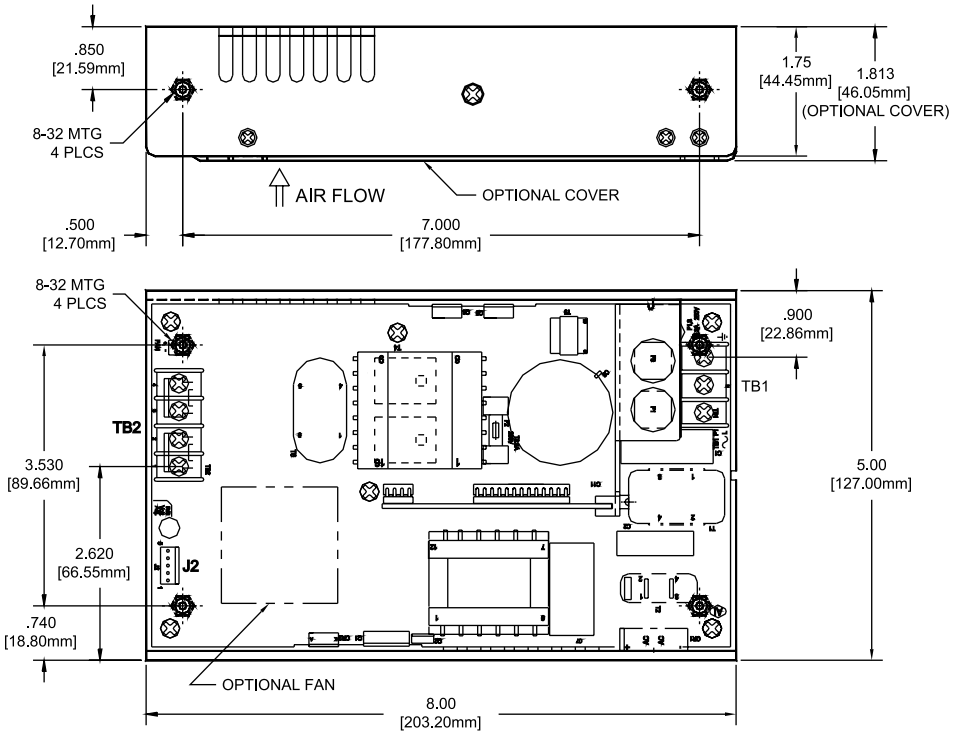
INPUT:
TB1
6-32, 3 PIN TERMINAL BLOCK 0.375"
PIN 1) AC LINE
PIN 2) AC NEUTRAL
PIN 3) AC GROUND

SIGNALS: J2
AMP P.C.B. HEADER P/N 640456-5
MATING CONNECTOR P/N640440-5
PIN 1) DC GOOD
PIN 2) POWER FAIL
PIN 3) EXT OFF
PIN 4) +SENSE
PIN 5) -SENSE

FAN
AMP P.C.B. HEADER P/N 640456-2
MATING CONNECTOR P/N 640440-2
PIN 1) -
PIN 2) +

OUTPUT:
TB2
6-32, 4 PIN TERMINAL BLOCK 0.375
[9.53mm]CTR
AN OPTIONAL BUS BAR WITH 10-32
SCREWS ON HIGH-CURRENT MODELS
IS AVAILABLE BY ADDING -B TO
MODEL NUMBER
PINS 1-2) +Vout
PINS 3-4) RETURN
16A MAXIMUM RECOMMENDED

CURRENT PER CONNECTOR PIN.
MAX. SCREW PROTRUSION ABOVE
CHASSIS =0.120" [3.05MM].
OPTIONAL: COVER/FAN ASSEMBLY #09-250CF
CAN BE INCLUDED BY ADDING -C TO
MODEL NUMBER
WEIGHT: 2.9 LBS. [1.32 kg] MAX.
TOLERANCES: X.XX=0.030 [0.76mm]
X.XXX+0.010 [0.25 mm]



ENVIRONMENTAL SPECIFICATIONS	OPERATING	NON-OPERATING
Temperature (A)	0 to 50°	-40 to +85°C
Humidity (A)	0 to 95% RH	0 to 95% RH
Shock (B)	20 g_{pk}	40 g_{pk}
Altitude	-500 to 10,000 ft	-500 to 40,000 ft
Vibration (C)	1.5 g_{rms} 0.003 g^2/Hz	5 g_{rms} 0.026 g^2/Hz

A. Units should be allowed to warm up/operate under non-condensing conditions before application of power. Derate output current and total output power by 2.5% per °C above 50°C.

B. Shock testing—half-sinusoidal, 10 ± 3 ms duration, ± direction, 3 orthogonal axes, total 6 shocks.

C. Random vibration—10 to 2000Hz, 6dB/octave roll-off from 350 to 2000Hz, 3 orthogonal axes. Tested for 10 min./axis operating and 1 hr./axis non-operating.

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