



# THE DATASHEET OF GSM15-12G



### GLOBAL PERFORMANCE SWITCHERS

#### FEATURES:

- Industry's smallest 15 W medically approved switcher
- Compact size (3.00" x 2.10" x 0.92")
- Wide-range ac input: 90-264 Vac
- Less than 75  $\mu$ A leakage current @ 120 Vac
- Approved to UL2601-1, EN60601-1
- EMI to FCC, CISPR 11 Class B
- Overvoltage protection standard
- RoHS compliant models available (G suffix)
- $\text{\textcircled{C}}$  marked to LVD



#### SPECIFICATIONS

<b>Ac Input</b> 90-264 Vac, 47-63 Hz single phase. Class I or class II grounding.	<b>Temperature Coefficient</b> 0.03% / °C typical.																								
<b>Input Current</b> Maximum input current at 90 Vac, 60 Hz with full rated output load not to exceed 0.6 A.	<b>EMI/EM Compliance</b> All models include built-in EMI filtering to meet the following EMC requirements of IEC601-1-2.																								
<b>Input Protection</b> Internal ac fuse provided on all units. Designed to blow only if a catastrophic failure occurs in the unit -- Fuse does not blow on unsustained overload or short circuit.	<table border="1"> <thead> <tr> <th>Performance Requirement</th> <th>EMC Standard</th> <th>Typical Margin</th> </tr> </thead> <tbody> <tr> <td>Conducted Emissions</td> <td>EN55011, Class B; FCC Class B</td> <td>2 dB Class II Gnd 6 dB Class I Gnd</td> </tr> <tr> <td>Surge Discharge</td> <td>EN61000-4-2, Level 3</td> <td>2 kV</td> </tr> <tr> <td>RF Field Susceptibility</td> <td>EN61000-4-3, Level 3</td> <td>2 V</td> </tr> <tr> <td>Fast Transients/Bursts</td> <td>EN61000-4-4, Level 3</td> <td>500 V</td> </tr> <tr> <td>Surge Susceptibility</td> <td>EN61000-4-5, Level 3</td> <td>500 V</td> </tr> <tr> <td>Conducted RF Susceptibility</td> <td>EN61000-4-6</td> <td>25%</td> </tr> <tr> <td>Voltage Sags &amp; Surges</td> <td>EN61000-4-11</td> <td>5%</td> </tr> </tbody> </table>	Performance Requirement	EMC Standard	Typical Margin	Conducted Emissions	EN55011, Class B; FCC Class B	2 dB Class II Gnd 6 dB Class I Gnd	Surge Discharge	EN61000-4-2, Level 3	2 kV	RF Field Susceptibility	EN61000-4-3, Level 3	2 V	Fast Transients/Bursts	EN61000-4-4, Level 3	500 V	Surge Susceptibility	EN61000-4-5, Level 3	500 V	Conducted RF Susceptibility	EN61000-4-6	25%	Voltage Sags & Surges	EN61000-4-11	5%
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<b>Inrush Current</b> Inrush is limited by internal thermistors. The inrush at 240 Vac, averaged over the first ac half-cycle under cold start conditions will not exceed 37 A.	<b>Medical Safety Approvals</b> All models are Certified to be in compliance with the applicable requirements of UL2601-1, IEC60601-1, CSA-C22.2 No. 601-1, EN60601-1.																								
<b>Efficiency</b> 69-85% depending on model.	<b>Leakage Current</b> The maximum leakage current for GSM15 series will be as follows;																								
<b>Overload Protection</b> Fully protected against short circuit and output overload. Short circuit protection is cycling type power limit. Factory set to begin power limiting at 23 W.	132Vac/60Hz UL2601-1 test method																								
<b>Overvoltage Protection</b> Built in OVP on all models. Approximately 120-140% of output voltage.	<table border="1"> <thead> <tr> <th></th> <th>GND</th> <th>Connection Normal</th> <th>Single Fault</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Class I</td> <td>75 <math>\mu</math>A</td> <td>105 <math>\mu</math>A</td> </tr> <tr> <td></td> <td>Class II</td> <td>39 <math>\mu</math>A</td> <td>54 <math>\mu</math>A</td> </tr> </tbody> </table>		GND	Connection Normal	Single Fault						Class I	75 $\mu$ A	105 $\mu$ A		Class II	39 $\mu$ A	54 $\mu$ A								
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<b>Output Noise</b> 0.5% rms, 1% Pk-Pk, 20 MHz Bandwidth, differential mode. Measured with noise probe directly across output terminals of the power supply.	264Vac/50Hz IEC60601-1 test method																								
<b>Transient Response</b> Main Output - 500 $\mu$ s max. response time for return to within 0.5% of final value for a 50% load step change, $\Delta i / \Delta t < 0.2$ A/ $\mu$ s. Maximum voltage deviation is 3.5%.	<table border="1"> <thead> <tr> <th></th> <th>GND</th> <th>Connection Normal</th> <th>Single Fault</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Class I</td> <td>128 <math>\mu</math>A</td> <td>180 <math>\mu</math>A</td> </tr> <tr> <td></td> <td>Class II</td> <td>66 <math>\mu</math>A</td> <td>94 <math>\mu</math>A</td> </tr> </tbody> </table>		GND	Connection Normal	Single Fault						Class I	128 $\mu$ A	180 $\mu$ A		Class II	66 $\mu$ A	94 $\mu$ A								
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<b>Hold-up Time</b> 10 ms minimum from loss of ac input voltage at full load, nominal line (120 Vac).																									

Medical Model	Voltage Output	Min.	Normal (A)	Peak (B)	Initial Set Point	OVP Setpoint	Total Regulation	Ripple and Noise
GSM15-5	5.1 V	0 A	2.35 A	3 A	2.5%	7.2 V	2%	1%
GSM15-12	12 V	0 A	1.25 A	1.5 A	2.5%	16 V	2%	1%
GSM15-15	15 V	0 A	1.0 A	1.2 A	2.5%	21 V	2%	1%
GSM15-24	24 V	0 A	0.625 A	0.75 A	2.5%	32 V	2%	1%
GSM15-28	28 V	0 A	0.54 A	0.64 A	2.5%	280 V	2%	1%

Notes:

- A. Rating with unrestricted convection cooling.
- B. Peak Power for 60 sec. 10% duty cycle or continuous rating with 150 LFM of airflow.
- C. Output voltages preset at factory, not user adjustable.
- D. Add "G" suffix to model number for RoHS compliant model.

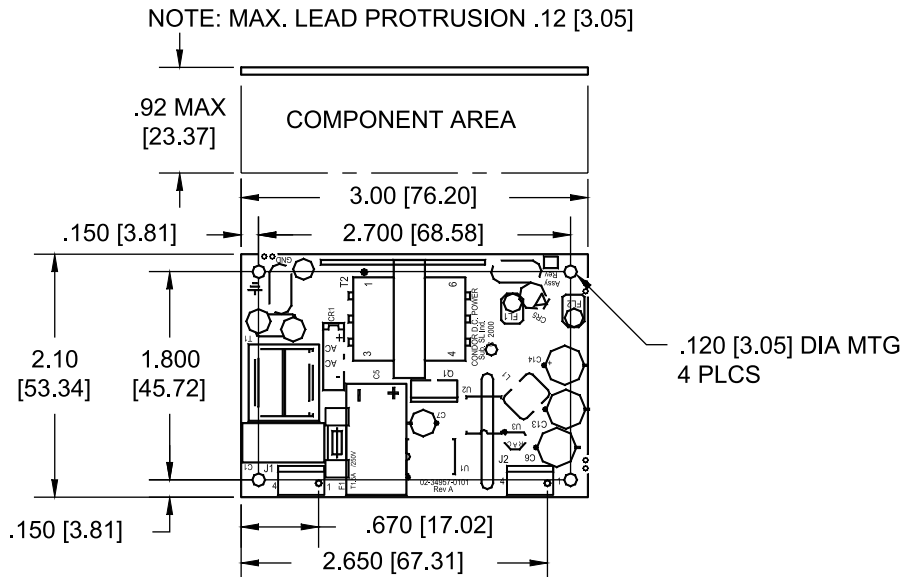
## GSM15 MECHANICAL SPECIFICATIONS

INPUT: J1 AMP P/N 640456-4  
 PIN 1) AC LINE  
 PIN 2) N/C  
 PIN 3) N/C  
 PIN 4) AC NEUTRAL  
 GND: 0.098 DIA. THRU HOLE

OUTPUT: J2 AMP P/N 640456-4  
 PIN 1) COMMON Return  
 PIN 2) COMMON Return  
 PIN 3) OUTPUT #1 + Vout  
 PIN 4) OUTPUT#1 +Vout

MATING CONNECTOR AMP P/N  
 MTA – 100 Receptacle

NOTE: 3A MAXIMUM RECOMMENDED  
 CURRENT PER CONNECTOR PIN



Overall Dimensions:  
 3.00 x 2.10 x .92 inches  
 76.20mm x 53.34mm x 23.37mm  
 Weight: 0.25 LBS. [.113 kg]  
 MAX.

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

A. Units should be allowed to warm up/operate under non-condensing conditions before application of power.

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.

## Looking for pricing, stock, or lifecycle information?

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