

Medical



Industrial

### FEATURES AND BENEFITS

10W PCB-Mount Power Supply	E-cap Life of >8 Years
1.02" x 2.05" x 0.98" (27mm x 52mm x 25mm)	>800,000 Hours MTBF
Universal Input 90VAC–264VAC*	3 Year Warranty
<0.1W No Load Input Power	Approved to CSA/EN/IEC/UL60601-1 3 <sup>rd</sup> Edition
Approved to CSA/EN/IEC/UL62368-1	Meets Heavy Industrial and IEC60601-1-2 4 <sup>th</sup> Edition Levels of EMC
Meets Class B Radiated & Conducted EMI, with Margin	



Notes:

- \*90VAC–277VAC input option available, consult factory for more information.

### MODEL SELECTION

Model Number	Volts	Output Current	Output Power	Ripple & Noise <sup>1</sup>	Line Regulation	Load Regulation	Input Class/Termination	Output Terminations
GB10S05P01	5.0V	1.8A	9W	75mV pk-pk	±1%	±5%	PCB mount pins, Class II input	PCB mount pins
GB10S07P01	7.5V	1.5A	9W	75mV pk-pk	±1%	±5%		
GB10S09P01	9.0V	1.0A	9W	90mV pk-pk	±1%	±5%		
GB10S12P01	12.0V	0.83A	10W	120mV pk-pk	±1%	±5%		
GB10S15P01	15.0V	0.67A	10W	150mV pk-pk	±1%	±5%		
GB10S24P01	24.0V	0.4A	10W	240mV pk-pk	±1%	±5%		

Notes:

- Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
- Other output voltages available, consult factory.
- All specifications are typical at 230VAC, full load, at 25°C ambient unless noted.



### INPUT

Input Voltage and Frequency	100VAC–240VAC, ±10%, 47Hz–63Hz, 1Ø
Input Current	115VAC: 0.45A, 230VAC: 0.22A
Inrush Current	264VAC, cold start: will not exceed 40A peak
Input Fuses	2.0A, 250VAC fuse in both line and neutral
Earth Leakage Current (Input to Earth)	<250µA@264VAC, 60Hz, NZ
Patient Leakage Current (Output to Earth)	<100µA@264VAC, 60Hz, NC <500µA@264VAC, 60Hz, SFC
Efficiency	>88%, typical
Power Factor	0.9 min., 230VAC, 80%–100% load vector, 25°C ambient

Notes:

- All specifications are typical at 230VAC input, full load, at 25°C ambient unless noted.

### SAFETY

ITE/Industrial Safety	EN/IEC/UL62368-1
Medical Safety	EN/IEC/UL60601-1 3 <sup>rd</sup> Edition

### ISOLATION

Isolation	Input-Output: 4000VAC (2 x MOPP)
Electric Strength and Test Voltage (Hipot)	4000VAC

### RELIABILITY

MTBF	>800,000 hours, full load, 110VAC & 220VAC input, 25°C amb., per telcordia 332 issue 6, stress method
E-cap Life	>8 year life based on calculations at 115VAC/60Hz & 230VAC/50Hz, ambient 25°C at 24 hours/day, 365 days/year, 6 power up cycles/day

### OUTPUT

Output Voltage	See models chart
Turn On Time	<800mS
Hold-up Time	20mS/100VAC at full load, "K" and "C" input options 10mS/100VAC at full load, "P" input options
Output Power	10W continuous - See models chart for specific voltage model ratings
Transient Response	500µS resp.time for return to w/in 0.5% of final value for any 50% load step from 5% to 100% of rated load, $\Delta i/\Delta t < 0.2A/\mu S$ . Max voltage deviation is +/-3.5%.
Total Regulation	See models chart

Notes:

- All specifications are typical at 230VAC input, full load, at 25°C ambient unless noted.

### ENVIRONMENT

Operating Temperature	-25°C ~ +70°C, see derating curve for operation above 50°C
Relative Humidity	5% to 90%, non-condensing
Weight	100 grams
Dimensions	27mm x 52mm x 24 mm 1.07 inch x 2.05 inch x 0.98 inch
Storage Temperature	-40°C ~ +85°C
Vibration	Operating: 0.003g/Hz, 1.5 grams overall, 3 axes, 10 min/axis, 1Hz–500Hz Non-Oper.: random waveform, 3 min/axis, 3 axes and sine waveform, Vib. frequency/acceleration:10Hz–500Hz/1g, sweep rate of 1 octave/min, vibration time of 10 sweeps/axes, 3 axes
Shock	Operating: Half-sine, 20gpk, 10mS, 3 axes, 6 shocks total Non-Operating: Half-sine waveform, impact acceleration of 50G, pulse duration of 6mS, Number of shocks: 3 for each of the 3 axis
Cooling	Convection



### PROTECTION

Overtemperature Protection	Will shutdown upon an overtemperature condition, Auto-recovery
Overload Protection	130%–160% of rated output current value, Hiccup mode
Overvoltage Protection	120%–150% of nominal output voltage, Hiccup mode
Short circuit Protection	Hiccup mode

### EMI/EMC COMPLIANCE

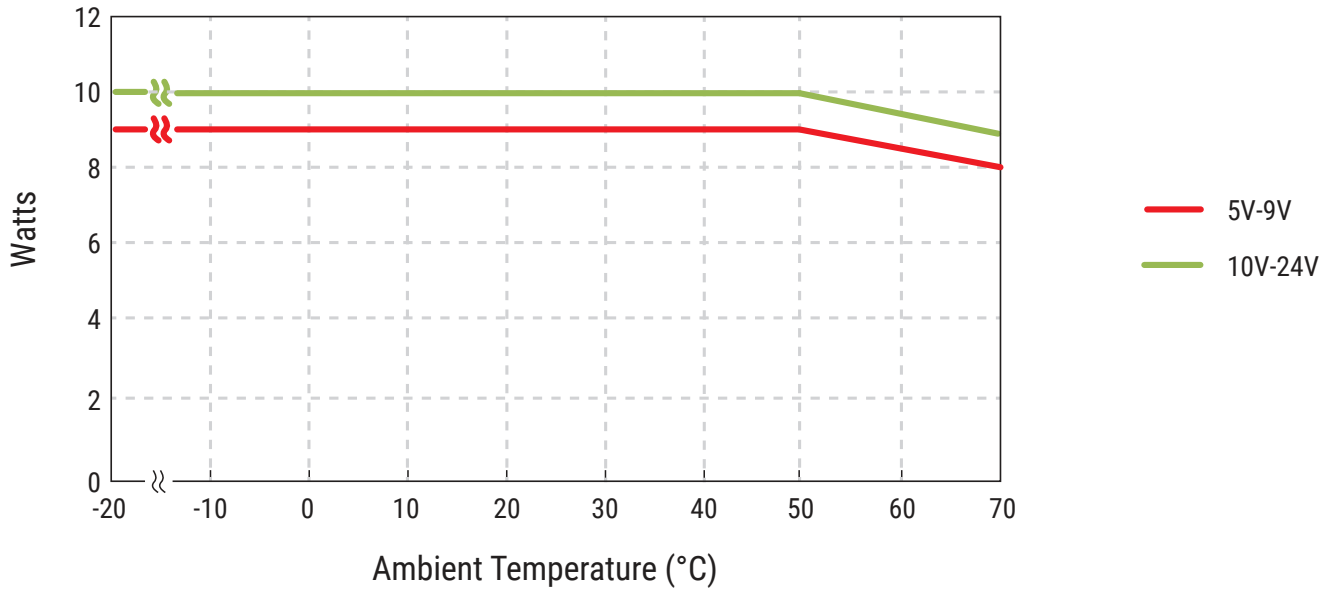
Conducted Emissions	EN55032, EN55011/CISPR11 Class B, FCC Part 15.107, Class B: 6db margin type, at 115VAC and 230VAC
Radiated Emissions	EN55032, EN55011/CISPR11 Class B, FCC Part 15.109, Class B: 3db margin type, at 115VAC and 230VAC
Electro-Static Discharge (ESD) Immunity on Power Ports	EN55024/IEC61000-4-2, Level 4: +/- 8kV contact, +/- 15kV air, Criteria A IEC60601-1-2 4 <sup>th</sup> Edition, Table 4
Radiated RF EM Fields Susceptibility	EN55022/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz IEC60601-1-2 4 <sup>th</sup> Edition, Table 4
Electrical Fast Transients (EFT)/Burst Immunity	EN55024/IEC61000-4-4, Level 4, +/- 4.4kV, 100kHz rep rate, 40A, Criteria A IEC60601-1-2 4 <sup>th</sup> Edition, Table 5
Surges, Line to Line (DM) and Line to Ground (CM)	EN55024/IEC61000-4-5, Level 4, +/-2kV DM, +/-4kV CM, Criteria A Surpasses IEC60601-1-2 4 <sup>th</sup> Edition requirements
Conducted RF Immunity	EN55022/IEC61000-4-6, 3.6V/m - Level 4, (0.15MHz to 80MHz; and 12V/m) in ISM and amateur radio bands between 0.15MHz and 80MHz, 80% AM at 1kHz IEC60601-1-2 4 <sup>th</sup> Edition, Table 5
Power Frequency Magnetic Field Immunity	EN55024/IEC1000-4-8, Level 4: 30 A/m, 50Hz/60Hz
Voltage Dip Immunity	EN55024/IECEN61000-4-11: –100% dip for 10 mS at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°, 100% dip for 20mS, 0°, Criteria A(Criteria B for "P" option) –100% dip for 5000mS (250/300 cycles), Criteria B –60% dip for 100mS, Criteria B –30% dip for 500mS, Criteria A IEC60601-1-2 4 <sup>th</sup> Edition, Table 5
Harmonic Current Emissions	EN55011/EN61000-3-2, Class A
Flicker Test	EN61000-3-3

Notes:

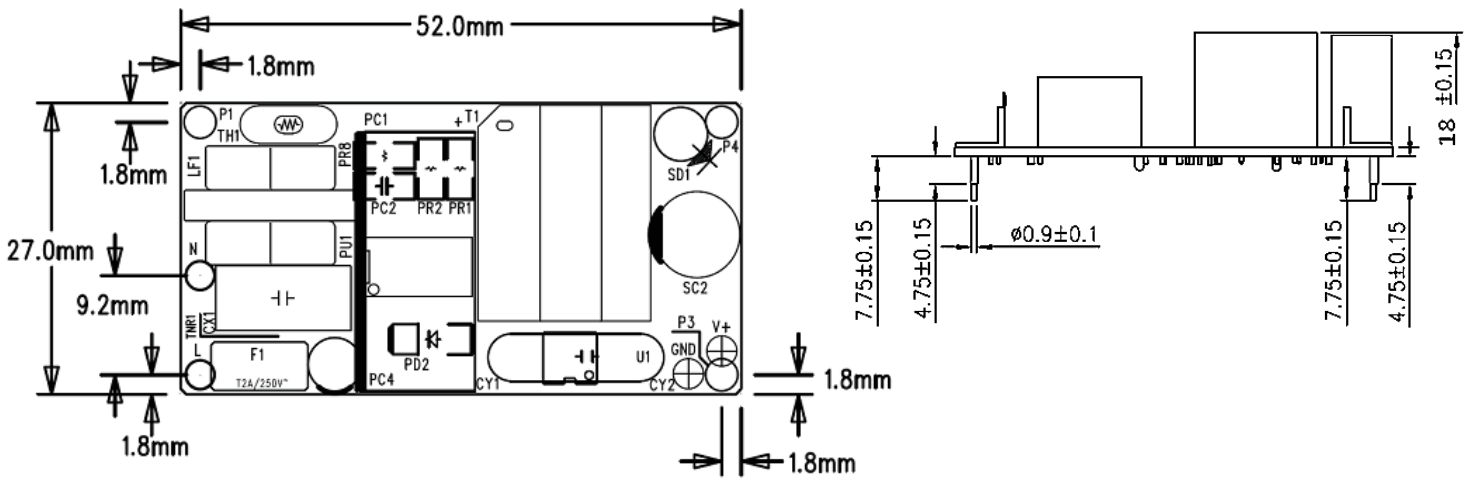
1. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
2. All specifications are typical at nominal input, full load, at 25°C ambient unless noted. Consult factory for information regarding testing for or usage under special environments.



**DERATING CURVE**



**MECHANICAL DRAWING**





## CONNECTOR AND TERMINATION INFORMATION

Input Connections			Output Connections	
Version	Connector Pinout	Connector Type/Part No.	Connector Pinout	Connector Type/Part No.
PCB Mount	Pin 1: AC Line Pin 2: AC Neutral	Pencom PI3207 or equivalent	Pin 4: +Vout Pin 5: +Vout Pin 6: -Vout Pin 7: -Vout	Pencom PI3207 or equivalent