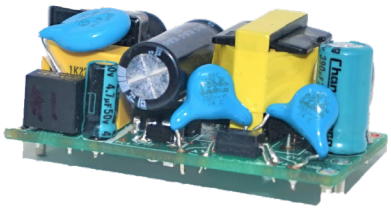
GB10 Family

PCB Mount

10W Single Output
Medical/Industrial Grade



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 3rd Edition
Approved to CSA/EN/IEC/UL62368-1	Meets Heavy Industrial and IEC60601-1-2 4th Edition Levels of EMC
Meets Class B Radiated & Conducted EMI, with Margin	

Notes:
1. *90VAC–277VAC input option available, consult factory for more information.

MODEL SELECTION

Model Number	Volts	Output Current	Output Power	Ripple & Noise[1]	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:
1. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
2. Other output voltages available, consult factory.
3. 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:

1. 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 3rd 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, Δi/Δt<0.2A/µS. Max voltage deviation is +/-3.5%.
Total Regulation	See models chart

Notes:

1. 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

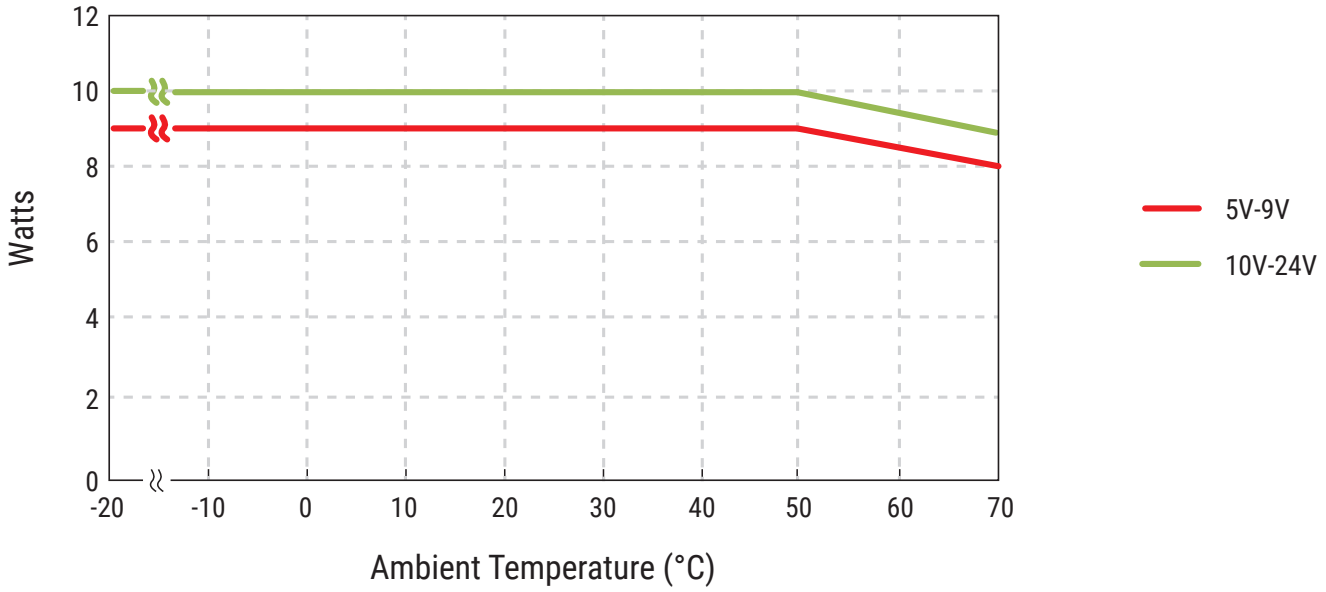
EMI/EMC COMPLIANCE

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 4th Edition, Table 4
Radiated RF EM Fields Susceptibility	EN55022/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz IEC60601-1-2 4th 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 4th 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 4th 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 4th 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 4th Edition, Table 5
Harmonic Current Emissions	EN55011/EN61000-3-2, Class A
Flicker Test	EN61000-3-3

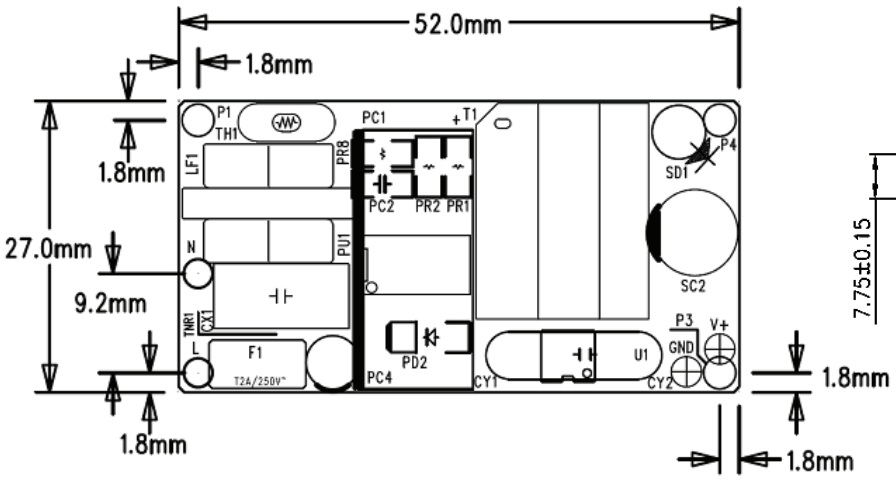
Notes:

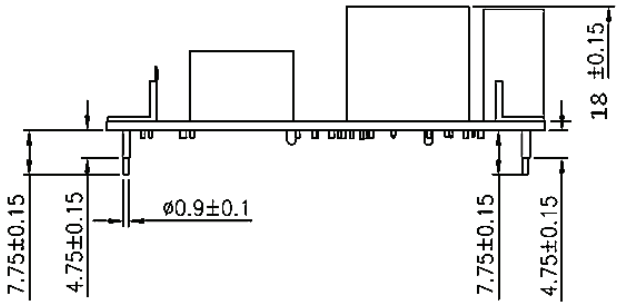
1. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
2. All specifications are typical at nominal input, full load, at 25°C ambient unless noted. Consult factory for information regarding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