



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



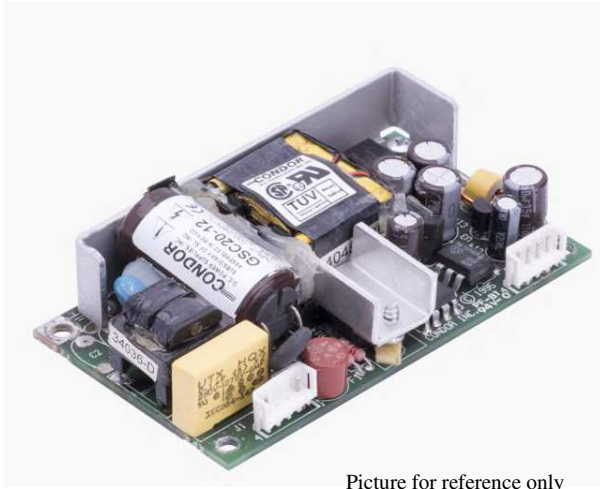
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Picture for reference only

Features and Benefits

- 40W Open Frame and PCB-mount Power Supply
- 1.9" x 4.0" x 1.0" Package
- Universal Input 90-264Vac
- <0.1W no load input power
- Approved to CSA/EN/IEC/UL66368-1
- Approved to CSA/EN/IEC/UL60601-1, 3rd Edition
- Meets Class B Radiated & Conducted EMI with margin
- Meets Heavy Industrial and IEC60601-1-2 4th Edition Levels of EMC
- E-Cap life of >8 years
- >1,000,000 hours MTBF
- 3 year warranty



Description

The GB40 Series are designed for superior performance to minimize the effort required to integrate the power supplies into medical, industrial, and test & measurement applications. The GB40 Series AC-DC power supplies are approved to medical and industrial safety standards: EN/IEC/UL60601-1, 3rd edition (with 2 MOPP isolation), and EN/IEC/UL62368-1. The GB40 Series models are designed to meet the EMC requirements per UL/EN/IEC60601-1-2, 4th edition (Heavy Industrial levels of EN61000-4-x standards)*. The GB40 Series models will operate at universal input range of 90 to 264Vac over the wide temperature range of -20°C to +70°C, delivering full rated output power up to +40°C and applicable output power derating up to 70°C. These models are available in open frame and PCB mount versions for flexibility.

*Consult Factory for Table 9 compliance information.

Model Selection

Model Number ²	Output Volts	Rated Current	Output Power	Ripple & Noise ¹	Line Regulation	Load Regulation	Input Class/Termination	Output Termination
GB40S05K01	5.0V	5.0A	25W	75mV pk-pk	±1%	±5%	Class I (Grounded) input, 3-pin AMP/Molex type connector.	4-pin AMP/Molex type connector for "K" and "C" versions.
GB40S09K01	9.0V	4.0A	36W	90mV pk-pk				
GB40S12K01	12.0V	3.4A	40W	120mV pk-pk				
GB40S18K01	18.0V	2.22A	40W	120mV pk-pk			Change "K" to "P" for PCB mount pins, class I input	PCB mount pins for "P" and "V" versions
GB40S24K01	24.0V	1.7A	40W	240mV pk-pk				
GB40S48K01	48.0V	0.83A	40W	480mV pk-pk				

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 Specifications

Input Voltage and Frequency	100-240Vac, ±10%, 47-63Hz, 1Ø	Efficiency	>88%, typical.
Input Current	115Vac: 1.2A, 230Vac: 0.6A	Power Factor	0.9, min., 230Vac, 80-100% load vector, 25°C ambient
Input Fuses	3.15A, 250Vac fuse in both line and neutral	Leakage Current (Input-Earth)	<500µA@264Vac, 60Hz, NC <1mA@264Vac, 60Hz, SFC
Inrush Current	264Vac, cold start: will not exceed 40A peak	Leakage Current (Output-Earth)	<100µA@264Vac, 60Hz, NC <500µA@264Vac, 60Hz, SFC

Notes: 1. All specifications are typical at 230Vac input, full load, at 25°C ambient unless noted.

Output Specifications

Output Voltage	See Model Selection Table on pg 1.	Hold-up Time	20ms / 100VAC at full load
Output Power	25W-40W continuous – See model selection table for specific voltage model ratings.	Turn On Time	<700ms
Transient response	500 μ s 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: +/-3.5%.	Line/Load Regulation	See Model Selection Table on pg 1.

Notes: 1. All specifications are typical at 230Vac input, full load, at 25°C ambient unless noted.

Environmental Specifications

Operating Temperature	-25 ~ +70°C, see derating curve for operation above 40°C	Cooling	Convection
Storage Temperature	-40 ~ +85°C	Relative Humidity	5% to 90%, non-condensing
Vibration	Operating: 0.003g/Hz, 1.5grms overall, 3 axes, 10 min/axis, 1-500Hz. Non-Oper.: random waveform, 3 minutes per axis, 3 axes and Sine waveform, Vib. frequency/acceleration: 10-500Hz/1g, sweep rate of 1 octave / minutes, 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 6 mS, Number of shocks: 3 for each of the three axis
Dimensions	48.3 x 101.6 x 25mm 1.9 x 4.0 x 1.0 inch	Weight	220g

Protection

Overvoltage Protection	120% to 150% of nominal output voltage. Hiccup Mode	Overtemperature Protection	Will shut down upon an overtemperature condition, auto recovery.
Short Circuit Protection	Hiccup Mode	Overload Protection	130% - 160% or rated output current value, hiccup mode

Isolation Specifications

Isolation	Input-Output: 4000Vac (2 MOPP) Input-Ground: 1500Vac (1 MOPP) Output-Ground: 1500Vac (1 MOPP)	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: TBD
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Safety & Reliability

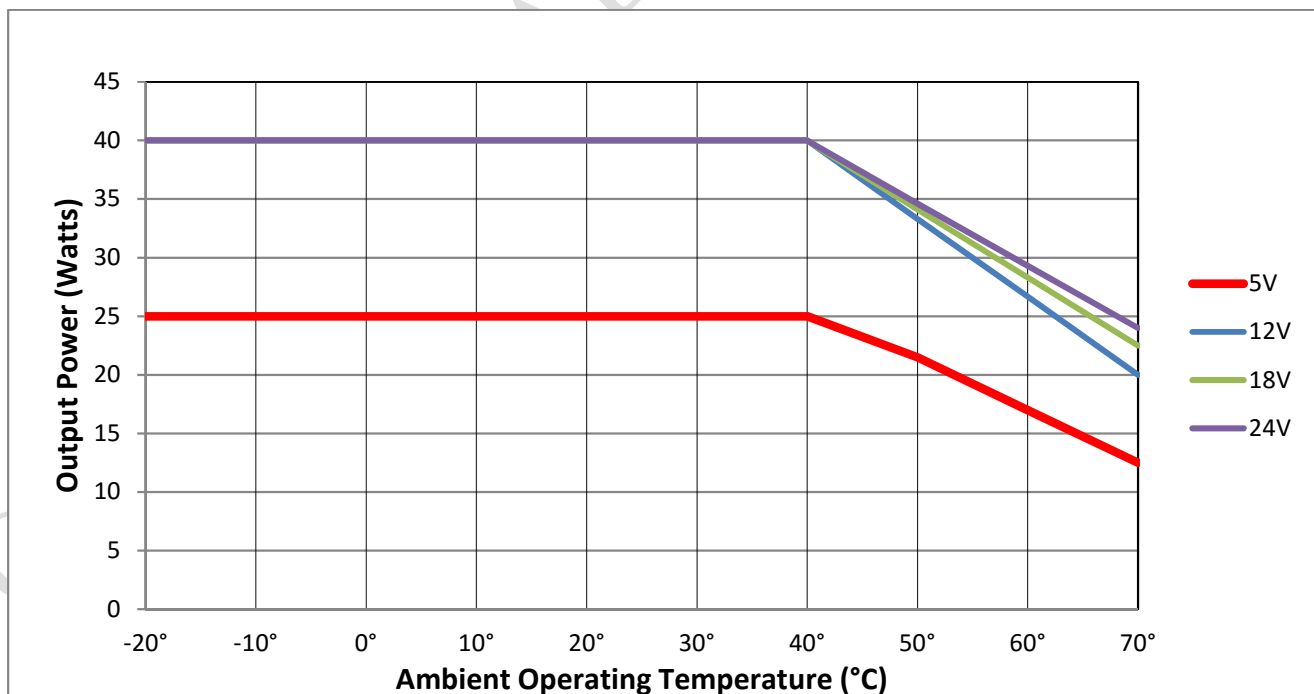
ITE/Industrial Safety	EN/IEC/UL62368-1	MTBF	>1,000,000 hours, full load, 110 & 220Vac input, 25°C amb., per Telcordia 332 Issue 6, Stress Method.
Medical Safety	EN/IEC/UL60601-1, 3rd Edition	E-Cap Life	>8 year life based on calculations at 115Vac/60Hz & 230Vac/50Hz, ambient 25°C at 24 hrs per day, 365 days/year, 6 power up cycles per day.

EMI/EMC Compliance

Conducted Emissions:	EN55032, EN55011/CISPR11 Class B, FCC Part 15.107, Class B: 6db margin typ, at 115 and 230Vac
Radiated Emissions:	EN55032, EN55011/CISPR11 Class B, FCC Part 15.109, Class B: 3db margin typ, at 115 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) /Bursts:	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 (Diff Mode) and Line to GND (CMN Mode)	EN55024/IEC61000-4-5, Level 4, +/-2kV DM, +/-4kV CM, Criteria A Surpasses IEC60601-1-2, 4th Edition requirements.
Conducted Disturbances induced by RF Fields	EN55022/IEC61000-4-6, 3.6V/m – Level 4, 0.15 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
Rated Power frequency magnetic fields	EN55024/IEC1000-4-8, Level 4: 30 A/m, 50/60 Hz IEC60601-1-2, 4th Edition, Table 4
Voltage Interruptions, Dips, Sags & Surges	EN55024/IECEN61000-4-11: --100% dip for 10 mS, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees, 100% dip for 20mS, 0 deg., Criteria A --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:

Outline Drawing coming soon!

Connector and Termination Information

Input Connections				Output Connections	
Version	Connector Pinout	Ground	Connector Type/Part No.	Connector Pinout	Connector Type/Part Number
Open Frame: "K", "C"	Pin 1: AC LINE Pin 2: EMPTY Pin 3: AC NEUTRAL	0.125: ground tab (N/A on "C" versions)	Connector: TE/AMP P/N 640445-3 Mating Connector: TE/AMP P/N 640250-3, Pins= 770476-1	Pin 1: +Vout Pin 2: +Vout Pin 3: -Vout Pin 4: -Vout	Connector: TE/AMP P/N 640445-4 Mating Connector: TE/AMP P/N 640250-4, Pins= 770476-1
PCB Mount: "P", "V"	P1: AC Line P2: AC Neutral	PG: AC Ground (N/A on "V" version)	Pencom PI3207 or equivalent	P4: +Vout P5: +Vout P6: -Vout P7: -Vout	Pencom PI3207 or equivalent