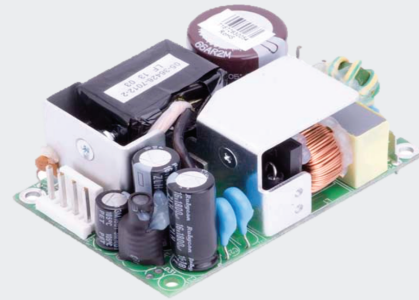


SL POWER GB60 SERIES

60 Watts Single Output
Industrial Grade



Industrial



LED/AV

Advanced Energy's SL Power GB60 series AC-DC power supplies are available with a nominal main output of 12 V, 15 V, 24 V, 48 V. GB60 power supplies provide up to 60 Watts of output power with convection cooling. All models have output overvoltage, short circuit and overload protection and a 2 x 3 x 1.063 inch form factor.

AT A GLANCE

Total Power

60 Watts

Input Voltage

90 to 264 VAC

of Outputs

Single



SPECIAL FEATURES

- Up to 60 Watts Convection Cooled
- 2" W x 3" L x 1.063" H Size
- Universal Input 90 to 264 VAC
- For 1U Applications
- Optional Power on LED
- Level V Efficiency Compliant Models
- <0.5 W No-load Power Consumption
- RoHS Compliant
- 3 Years Warranty

SAFETY

- CSA/EN/IEC/UL62368-1

ELECTRICAL SPECIFICATIONS

Input	
Input Range	100 to 240 VAC, 47 to 63 Hz, 1 \emptyset rated 80 to 270 VAC, 47 to 440 Hz, operational
Input Current	1.4 A max at 120 VAC, 0.75 A max at 240 VAC
Inrush Current	40 A max., cold start @ 240 VAC input
Input Fuse	4 A, 250 VAC fuse provided on all models
Earth Leakage Current	<1 mA @ 240 VAC, NC
Efficiency	88% typical (83% for 12V & 85% for 15V)
Isolation Voltage	Input to Ground: 1800 VAC Input to Output: 4000 VAC Output to Ground: 500 VAC
Output	
Output Voltage	See "Ordering information" section
Output Power	60 W continuous (55 W for 12 V models)
Turn on Time	<2 sec. @ 115 VAC (inversely proportional to input voltage and thermistor temperature)
Hold up Time	16 mS min. @ 60 W load, 120 VAC input
Ripple and Noise	1% of Vout on all models
Total Regulation	\pm 2%
Minimum Load	Not required
Switching Frequency	65 kHz, typical
Power Factor	Not applicable
Reliability	
MTBF	>300K hrs per Telcordia
Warranty	3 years
Protection	
Overvoltage Protection	Self-recovering
Overload Protection	Hiccup mode, 120% to 180%, typical
Short Circuit Protection	Hiccup mode.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-10°C to +70°C, -40°C start up
Storage Temperature	-40°C to +85°C
Relative Humidity	5% to 95%, non-condensing
Altitude	Operating: 3000 meters; Non-operating: 40,000 ft
Vibration	Random vibration per MIL-STD-810E, Method 514.4, Cat.1, Figure 514.4.1, 1 hour in each of 3 axes
Shock	Half-sine, 40 gpk, 10 mS duration, \pm in each of 3 axes, 6 shocks total

ENVIRONMENTAL SPECIFICATIONS

EMI/EMC COMPLIANCE

Conducted Emissions	EN55011/22 Class B, FCC Part 15 Class B
Radiated Emissions	EN55011/22 Class A, FCC Part 15 Class A with 6 dB margin
Electro-Static Discharge (ESD) Immunity on Power Ports	EN61000-4-2, 6 kV contact discharge, 8 kV air discharge
Radiated RF EM Fields Susceptibility	EN61000-4-3, 3 V/m
Electrical Fast Transients (EFT)/Bursts	EN61000-4-4, 2 kV / 5 kHz
Surges, Line to Line (DM) and Line to Ground (CM)	EN61000-4-5, 1 kV differential, 2 kV common-mode
Conducted RF Immunity	EN61000-4-6, 3 Vrms
Power Frequency Magnetic Field Immunity	EN61000-4-8, 3 A/m
Voltage Dip Immunity	EN61000-4-11 100 VAC, 95% dip/0.5 cycle (Criteria A), 60%/5cycles (Criteria B), 30%/25 cycles (Criteria A)
Harmonic Current Emissions	EN61000-3-2 Class A
Flicker Test	EN61000-3-3, Complies (dmax<6%)

SAFETY

Safety Standards	EN/CSA/IEC/UL62368-1
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ORDERING INFORMATION

Model Number ¹	Output Voltage	Output Current (convection)	Output Power (convection)	Ripple & Noise ²	Total Regulation	Total Threshold
GB60S12K	12.0 V	4.58 A	55.0 W	120 mV pk-pk	± 2%	14.4 to 18.0 VDC
GB60S15K	15.0 V	4.00 A	60.0 W	150 mV pk-pk	± 2%	18.0 to 22.5 VDC
GB60S24K	24.0 V	2.50 A	60.0 W	240 mV pk-pk	± 2%	28.8 to 36.0 VDC
GB60S48K	48.0 V	1.25 A	60.0 W	480 mV pk-pk	± 2%	57.6 to 72.0 VDC
GB60S12C	12.0 V	4.58 A	55.0 W	120 mV pk-pk	± 2%	14.4 to 18.0 VDC
GB60S15C	15.0 V	4.00 A	60.0 W	150 mV pk-pk	± 2%	18.0 to 22.5 VDC
GB60S24C	24.0 V	2.50 A	60.0 W	240 mV pk-pk	± 2%	28.8 to 36.0 VDC
GB60S48C	48.0 V	1.25 A	60.0 W	480 mV pk-pk	± 2%	57.6 to 72.0 VDC

Notes:

- Models with 24V or higher output voltage meet efficiency requirements of Level V.
- Measured with noise probe directly across output terminals, and load terminated with 0.1 μ F ceramic and 10 μ F low ESR capacitors.

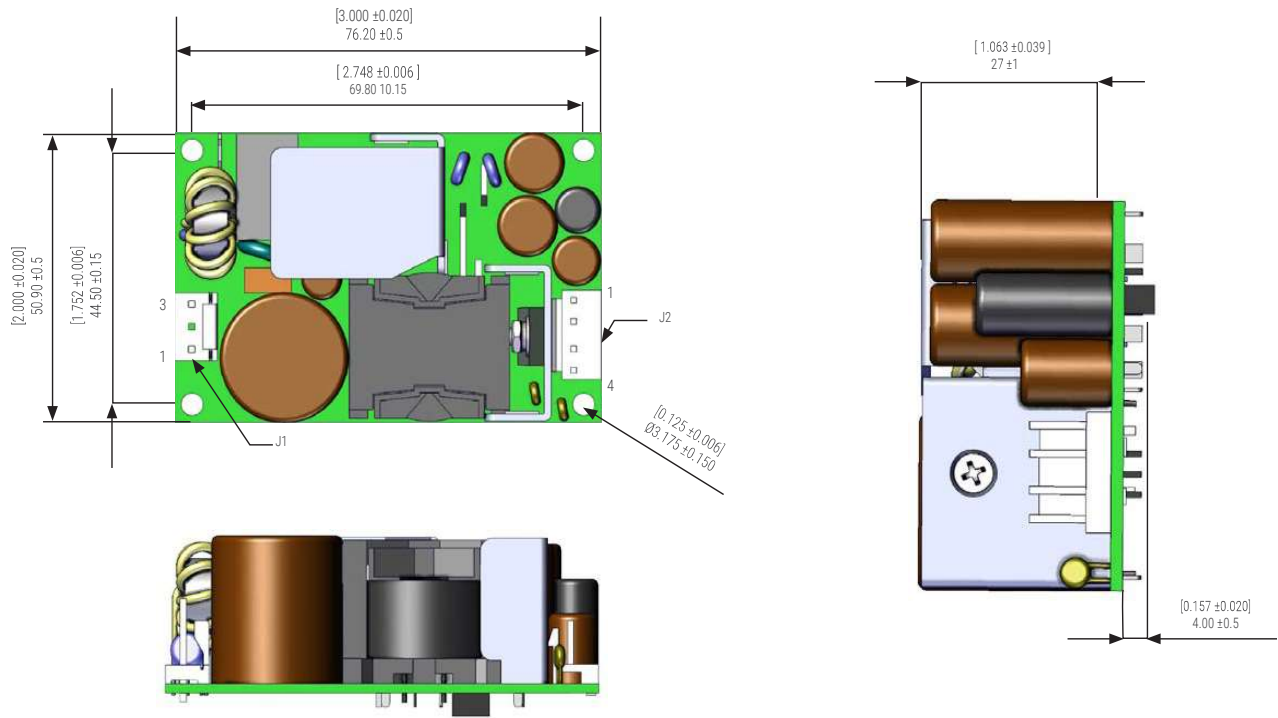
PIN ASSIGNMENTS

Connector	GB60	
Input Connector J100	PIN 1	AC Line
	PIN 2	Empty
	PIN 3	AC Neutral
DC Output Connector J2	PIN 1	+Vout
	PIN 2	+Vout
	PIN 3	-Vout
	PIN 4	-Vout

CONNECTORS

Connector	Mating Connector	
Input Connector	J100	Tyco/AMP 640250-3. Terminals: 1770461-1
DC Output Connector	J2	AMP 640250-4. Terminals: 1770461-1
Ground	19-30258-0187 (Keystone 1285) (Zierick 895) (.187*0.020)	Molex 01-90020005

MECHANICAL DRAWING

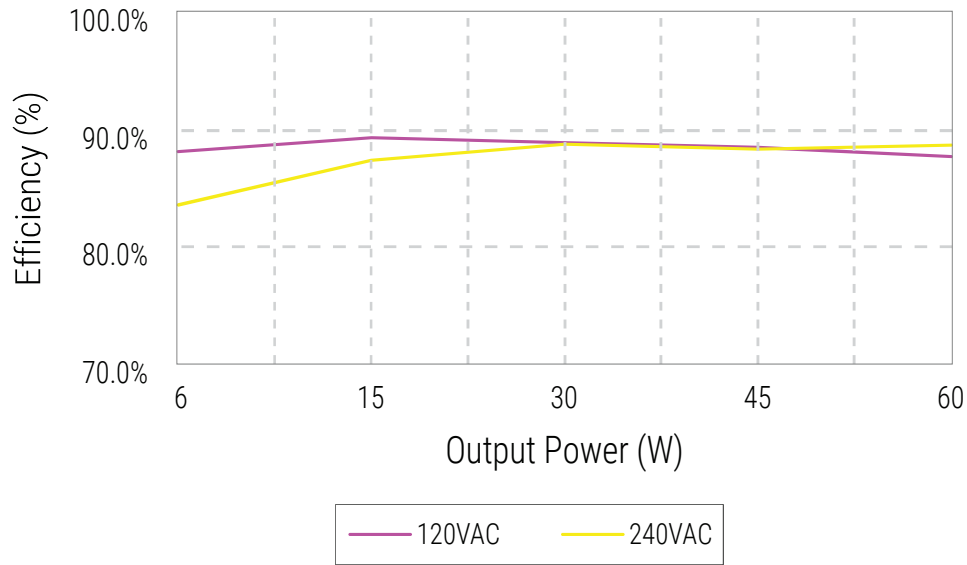


Notes:

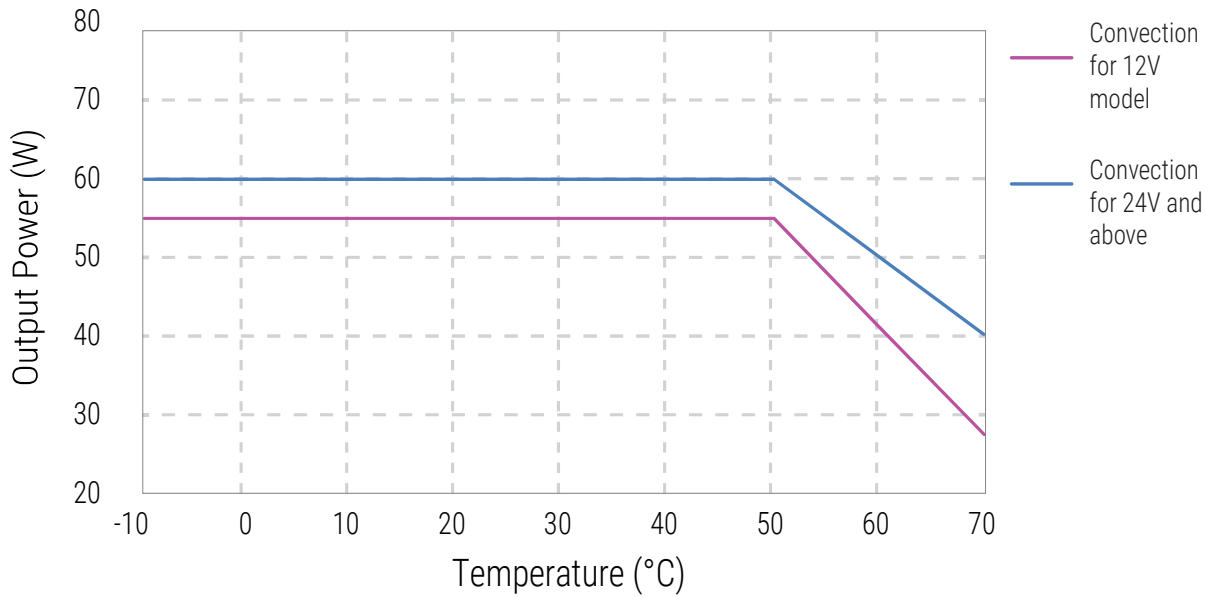
1. All dimensions in inches (mm), tolerance is ±.02".
2. 2.0" x 3.0" x 1.063" (50.8 mm x 76.2 mm x 27 mm)
3. Weight: 126 g

CHARACTERISTIC CURVE

Efficiency vs. Output Power



Output Power vs. Temperature



Notes:

55W convection cooled, derating output power to 50% at 70°C for 12V.

60W convection cooled, derating output power: 50% at 60°C and 40% at 70°C for Output Voltages 24V.



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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE | TRUST

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