



Medical



Industrial

### FEATURES AND BENEFITS

Compact Size: 6.5" x 2.8" x 1.5"	Approved to EN/IEC/UL62368-1
Approved to EN/IEC/UL60601-1, 3rd Edition	Meets UL/EN/IEC60601-1-2, 4th Edition for EMC
No Load Input Power	Meets DoE Efficiency Level VI
Up to 150W of AC-DC Power	Universal Input 85-264Vac Input Range
Meets EN55011/CISPR11, FCC Part 15.109	E-Cap Life of >5 years
3 Year Warranty	IP22 Rated Enclosure



### MODEL SELECTION

Model Number	Volts	Output Current	Output Power	Ripple & Noise	Line Regulation	Load Regulation	Output Cable/ Connector	Input Configuration
GE150A1251F01	12.0V	12.1A	145W	120mV pk-pk	±1%	±5%	#16AWG, 1165mm, 4 cond., 6 pin Molex Mini-fit	Class I Desktop, IEC60320 C14 Receptacle
GE150A1551F01	15.0V	9.67A	145W	150mV pk-pk	±1%	±5%		
GE150A1851F01	18.0V	8.33A	145W	180mV pk-pk	±1%	±5%		
GE150A2451F01	24.0V	6.25A	150W	240mV pk-pk	±1%	±5%	#18AWG, 1165mm, 4 cond., 6 pin Molex Mini-fit	
GE150A4851F01	48.0V	3.13A	150W	480mV pk-pk	±1%	±5%		
GE150A1251N01	12.0V	12.5A	145W	120mV pk-pk	±1%	±5%	#16AWG, 1165mm, 4 cond., 6 pin Molex Mini-fit	Class II Desktop, IEC60320 C8 Receptacle
GE150A1551N01	15.0V	10.0A	145W	150mV pk-pk	±1%	±5%		
GE150A1851N01	18.0V	8.33A	145W	180mV pk-pk	±1%	±5%		
GE150A2451N01	24.0V	6.25A	150W	240mV pk-pk	±1%	±5%		
GE150A4851N01	48.0V	3.20A	150W	480mV pk-pk	±1%	±5%		

#### Notes:

1. Measured at the output connector, with noise probe directly across output and load terminated with 0.1μF ceramic and 10μF low ESR capacitors.
2. Molex p/n 39-01-2060 or equivalent. See outline drawing for pinout information.
3. For Input Class I models: For AC GND connected to output return (-), insert a "B" in the part number where the "A" is located (ME150B1251F01).
4. All specifications are typical at nominal input, full load, at 25°C ambient unless noted.



### INPUT

AC Input	100-240Vac, $\pm 10\%$ , 47-63Hz, $\emptyset$
Input Current	115Vac: 2.2A, 230Vac: 1.1A
Inrush Current	264Vac, cold start: will not exceed 60A
Input Fuses	F1, F2: 3.15A, 250Vac fuses (line & neutral lines) provided on all models
Earth Leakage Current	Input-GND: $< 500\mu\text{A}$ @ 264Vac, 60Hz, NC Output- GND: Output-GND: $< 50\mu\text{A}$ @ 264Vac, 60Hz, NC
Efficiency	$> 88\%$ , typical
No Load Input Power	$< 0.150\text{W}$ (meets DoE Efficiency Level VI and CoC Tier 2 Requirements)

### OUTPUT

Output Voltage	See models chart on pg 1.
Output Power	Up to 150 Watts lower voltage -> lower power
Turn On Time	Less than 1 sec @115Vac, full load
Hold-up Time	20mS min., at full Load, 100Vac input
Ripple and Noise	See models chart on pg 1
Total Regulation	See models chart on pg 1
Transient Response	500 $\mu\text{s}$ response time for return to within 0.5% of final value for any 50% load step over the range of 5% to 100% of rated load, $\Delta i/\Delta t < 0.2\text{A}/\mu\text{s}$ . Max. voltage deviation is $\pm 3.5\%$ .

### PROTECTION

Overtemperature Protection	Will shut down upon an overtemperature condition, auto-recovery
Overload Protection	125 to 180% of rating, Hiccup Mode
Short Circuit Protection	Hiccup Mode, auto recovery
Overvoltage Protection	130 to 150% of output voltage, Hiccup mode

### EMI/EMC COMPLIANCE

Conducted Emissions	EN55011/CISPR11 Class B, FCC Part 15.107, Class B: 6db margin typ, at 115 and 230Vac
Radiated Emissions	EN55011/CISPR11 Class B, FCC Part 15.109, Class B: 3db margin typ, at 115 and 230Vac
Common Mode Noise	High Frequency (100kHz-20MHz): $< 40\text{mA}$ pk-pk
Electro-Static Discharge (ESD) Immunity on Power Ports	EN55024/IEC61000-4-2, Level 4: $\pm 8\text{kV}$ contact, $\pm 15\text{kV}$ 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, $\pm 4\text{kV}$ , 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, $\pm 2\text{kV}$ DM, $\pm 4\text{kV}$ CM, Criteria A Surpasses IEC60601-1-2, 4th Edition requirements
Conducted Disturbances induced by RF Fields	EN55022/IEC61000-4-6, 3V/m – Level 4, 0.15 to 80Mhz; and 12V/m) in ISM and radio bands between 0.15Mhz and 80Mhz, 80% AM at 1KHz IEC60601-1-2, 4th Edition, Table 5
Rated Power Frequency Magnetic Field	EN55024/IEC1000-4-8, Level 4: 30A/m, 50/60 Hz IEC60601-1-2, 4th Edition, Table 4
Harmonic Current Emissions	EN55011/EN61000-3-2, Class A
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, Criteria A; 100% dip for 20mS, 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



### RELIABILITY

MTBF	>250,000 hours, full load, 110 & 220Vac input, 25°C amb., per Telcordia 332 Issue 6
E-Cap Life	>5-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. (80% load on 5V, 12V model)

Note:  
All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

### ISOLATION

Isolation	Input-Output: 2 MOPP Input-Ground: 1 MOPP Output-Ground: 1 MOPP
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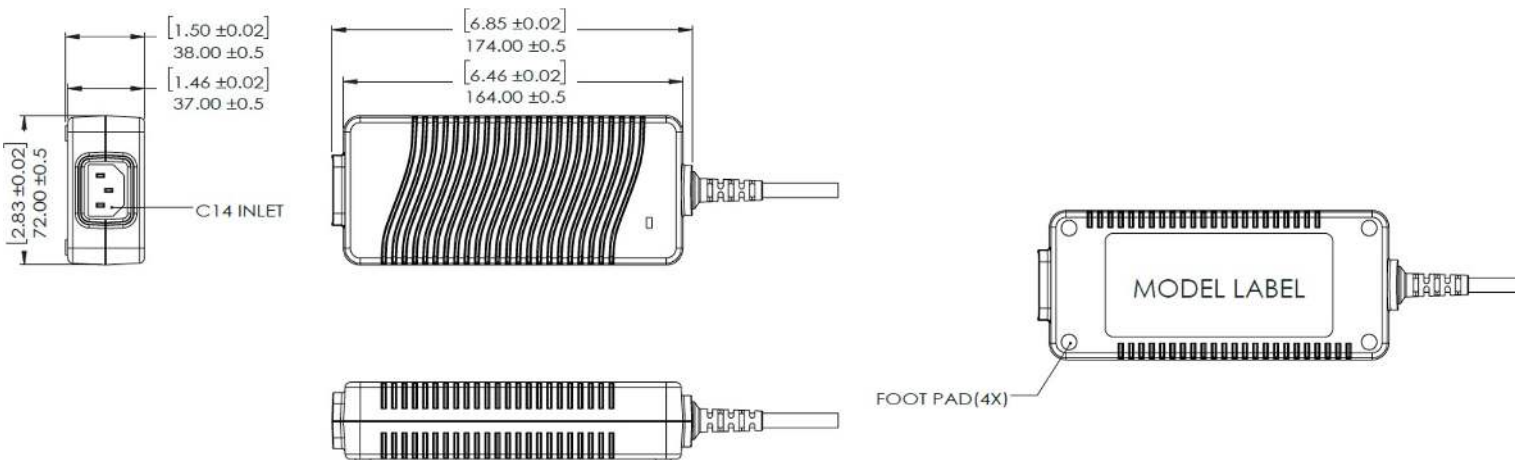
### SAFETY

Standards	EN/IEC/UL60601-1, 3rd edition, EN/IEC/UL62368-1
Drop Test	1.4m from tabletop to wooden platform, 4 faces

### ENVIRONMENT

Operating Temperature	-20°C to +50°C. Derate above 40°C. Start Up at -40°C, full load, (warmup period before all parameters are within specifications)
Relative Humidity	5% to 95%, non-condensing
Weight	700 grams
Dimensions	W: 2.83" x L: 6.5" x H: 1.46" W: 72mm x L: 165mm x H: 37mm
Temperature Derating	Derate output power above 40°C to 50% of rated output power at 70°C
Altitude	Operating: to 5000m • Non: -500 to 40,000 ft.
Storage Temperature	-40°C to +85°C
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 / mins, Vibration time of 10 sweeps / axes, 3 axes
Shock	Operating: Half-sine, 20gpk, 10mS, 3 axes, 6 shocks total • Non-Oper: Half-sine waveform, impact acceleration of 50G, Pulse duration of 6 mS, Number of shocks: 3 for each of the 3 axis

### MECHANICAL DRAWING



- Notes:
1. All dimensions in mm.
  2. The unit should not be covered or enclosed to protect against excessive case temperature rise.



### CONNECTOR INFORMATION

**Notes:** Standard models include a Molex Minifit 39-01-2060 connector. Other standard options are listed below. The "51" in the standard model number is replaced by the applicable digits below. Consult factory for availability.

Connector No.	Description	Connector No.	Description
02	2.1 x 5.5 x 9.5 mm straight barrel plug - Center positive	44	2.1 x 5.5 x 9.5 mm straight barrel plug, locking - Center positive
03	2.5 x 5.5 x 9.5 mm straight barrel plug - Center positive (Standard models)	45	2.5 x 5.5 x 9.5 mm straight barrel plug, locking - Center positive
12	5 pin DIN - 180 male connector (Pins 3, 5 = (+); pins 1, 2, 4 = (-))	48	3 pin Snap n Lock, Kycon Kpp - 3P or equivalent (Pin 1 = (+); pin 2 = (-))
22	6 pin DIN male connector (Pins 1, 2 = (+); pins 4, 5 = (-))	49	4 pin Snap n Lock, Kycon Kpp - 4P or equivalent (Pins 1, 3 = (+); pins 2, 4 = (-); pins 5, 6 = NC)
23	8 pin DIN male connector (Pins 3, 7 = (+); pins 1, 4, 6, 8 = (-); shell = FG)	51	6 pin Minifit - Molex 39-01-2060 or equivalent (Pins 1, 4 = (+); pins 3, 6 = (-))
32	9 pin "D" type female (Pins 8 = (+); pins 5=(-); all others = NC)	65	Stripped and Tinned Leads
33	2.5 x 5.5 x 12.5 mm straight barrel plug - Center positive	70	2.1 x 5.5 x 11mm right angle barrel plug (high retention) - Center positive
40	2.1 x 5.5 x 9.5 mm right angle barrel plug (High retention) - Center positive	71	2.5 x 5.5 x 11 mm right angle barrel plug (high retention) - Center positive
41	2.5 x 5.5 x 9.5 mm right angle barrel plug (High retention) - Center positive	72	2.1 x 5.5 x 9.5 mm straight barrel plug (High retention, no spark ) - Center positive
42	2.1 x 5.5 x 11 mm straight barrel plug (High retention) - Center positive	73	2.5 x 5.5 x 9.5 mm straight barrel plug (High retention, no spark ) - Center positive
43	2.5 x 5.5 x 11 mm straight barrel plug (High retention) - Center positive	74	EIAJ#5 style connector - Central positive