50 Watts
VEF Series



- Energy Efficiency Level V
- CEC 2008 / EISA 2007 / ErP Compliant
- China Compulsory Certfication (CCC) Qualified
- Single Outputs from 12 V to 24 V
- Optional Inlet Connectors
- No Load Input Power <0.3 W
- High Power Density

Specification

Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 1.7 A max
Inrush Current	• 70 A max at 230 VAC, cold start at 25 °C
Earth Leakage Current	• <0.7 mA at 240 VAC/50 Hz
Power Factor	• EN61000-3-2, class A
No Load Input Power	• <0.3 W
Input Protection	• Internal T4.0A/250 V fuse in line

Output

Output Voltage	• See table
Initial Set Accuracy	• ±5% at 50% load
Minimum Load	• No minimum load required
Hold Up Time	• 8 ms min at 115 VAC, full load
Start Up Delay	• 3 s max
Start Up Rise Time	• 8 ms typical
Transient Response	• 4% maxiumum deviation, recovering to less than 1% within 500 µs for a 50% step load change
Line Regulation	• ±0.5% max
Load Regulation	• ±5% max
Ripple & Noise	• 240 mv pk-pk max, 20 MHz bandwidth (see note 1)
Overvoltage Protection	• See table
Overload Protection	• 115-220%
Short Circuit Protection	• Continuous (hiccup/trip & restart mode with auto recovery)
Temperature Coefficient	• ±0.04%/°C

General

Efficiency	• See table
Energy Efficiency	• Level V
Isolation	• 3000 VAC Input to Output, 1500 VAC Input to Ground. Negative Output is connected to Ground.
Switching Frequency	• 65 kHz ±10 kHz
MTBF	• >700 kHrs to Bell Core iss. 6

Environmental

Operating Temperature	• -10 °C to +60 °C derate linearly from 100% load at +40 °C to 50% load at +60 °C
Storage Temperature	• -20 °C to +85 °C
Operating Humidity	• 5% to 90% RH non-condensing
Storage Humidity	• 5% to 95% RH non-condensing
Shock	• 6 random drops from 0.7 m with no damage, 50 g for 20 ms in each of 3 axes
Vibration	• 2 g variable frequency from 20 Hz to 30 Hz

EMC & Safety

Emissions	• EN55022, level B conducted & radiated
Harmonic Currents	• EN61000-3-2 class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, installation class 3, Perf Criteria B
Conducted Immunity	• EN61000-4-6, level 2 Perf Criteria A
Magnetic Field	• EN61000-4-8, 3 A/m Perf Criteria A
Dips & Interruptions	• EN55022, 100% 10 ms, 30% 500 ms, 100% 5000 ms Perf Criteria A, B, B
Safety Approvals	• IEC60950-1, EN60950-1, UL/cUL60950-1, China Compulsory Certification (CCC) qualified, Approved as Limited Power Source

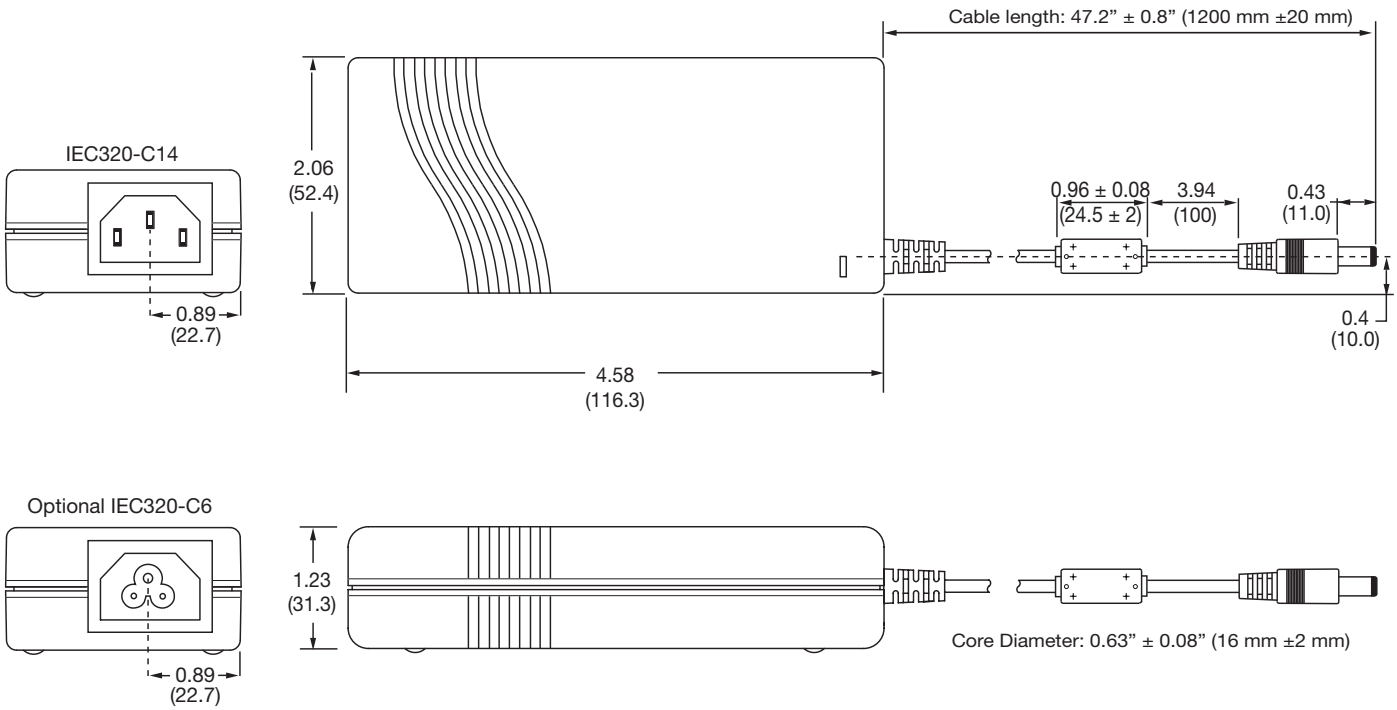
Models and Ratings

Output Power	Output Voltage[5]	Output Current	OVP Setting[2]	Efficiency[3]	Model Number[4]
50 W	12.0 V	4.17 A	18.5 V	88%	VEF50US12
50 W	15.0 V	3.33 A	18.0 V	88%	VEF50US15
50 W	19.0 V	2.63 A	28.5 V	88%	VEF50US19
50 W	24.0 V	2.08 A	36.0 V	88%	VEF50US24

Notes

1. Measured at the output connector with a 0.1 µF ceramic capacitor and a 22 µF electrolytic capacitor.
2. Typical values.
3. Average of efficiencies measured at 25%, 50%, 75% and 100% load and 230 VAC input.
4. For optional IEC320-C6 input connector, add suffix 'C6' to end of the part number, e.g. VEF50US24C6. Contact sales for details.
5. Other voltages between 12 V and 30 V available on request, contact sales for details.

Mechanical Details



Power Cord for C14 inlet, Order Part:
UK - UK-MAINS-IEC
European - EU-MAINS-IEC
US - US-MAINS-IEC

Power Cord for C6 inlet, Order Part:
UK - UK-MAINS-5
European - EU-MAINS-5
US - US-MAINS-5

Notes

1. All dimensions are shown in inches (mm), Tolerance is 0.04" (±1.0) max except output lead.
2. Weight: 0.76 lbs (345 g) approx.
3. Output connector is barrel type with 11 mm length, 5.5 mm dia. outer, 2.5 mm dia. inner with center + and outer shell - polarity.
4. Optional output connectors available.