

VEH Series



- Energy Star Level V, ≥ 15 V
- CEC 2008 & EISA 2007 Compliant
- China Compulsory Certification (CCC) Qualified
- Single Outputs from 12 V to 30 V
- Universal Input
- No Load Input Power <0.5 W
- High Power Density



Specification

Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 1.7 A max
Inrush Current	• 50 A max at 230 VAC
Earth Leakage Current	• <1 mA
Power Factor	• Meets EN61000-3-2, class A
No Load Input Power	• <0.5 W

Output

Output Voltage	• See tables
Initial Set Accuracy	• $\pm 5\%$ at 50% load
Minimum Load	• No minimum load requirement
Hold Up Time	• 8 ms min at 115 VAC, full load
Start Up Delay	• 3s max
Start Up Rise Time	• 8ms typical
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• $\pm 5\%$ max
Ripple & Noise	• 200mv pk-pk max, 20 MHz BW (see note 1)
Overvoltage Protection	• See tables
Overload Protection	• 110 -180%
Short Circuit Protection	• Continuous (hiccup/trip & restart mode with auto recovery)
Transient Response	• 4% maximum deviation, recovering to less than 1% within 500 μ s for a 50% step load change
Temperature Coefficient	• $\pm 0.04\%/^{\circ}\text{C}$

General

Efficiency	• See tables
Isolation	• 3000 VAC Input to Output, 1500 VAC Input to Ground.
Switching Frequency	• 60 kHz ± 10 kHz
MTBF	• >250 kHrs to Bell Core iss. 6

Environmental

Operating Temperature	• 0 $^{\circ}\text{C}$ to +60 $^{\circ}\text{C}$ derate linearly from 100% load at +40 $^{\circ}\text{C}$ to 50% load at +60 $^{\circ}\text{C}$,
Storage Temperature	• -10 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$
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	• EN61000-4-11, 70% U_T for 10 ms, 40% U_T for 100 ms, $<5\%$ U_T for 5000 ms Perf Criteria A, B, B
Safety Approvals	• EN60950-1:2001, UL/cUL60950-1, China Compulsory Certification (CCC) qualified, CE Mark.

Models and Ratings

Output Power	Voltage	Current	OVP Setting ⁽²⁾	Effeciency ⁽³⁾	Model Number ⁽⁴⁾
60 W	12.0 V	5.0 A	16 V	85 %	VEH60US12
60 W	15.0 V	4.0 A	18 V	87 %	VEH60US15
60 W	16.0 V	3.75 A	19 V	87 %	VEH60US16
60 W	18.0 V	3.33 A	24 V	87 %	VEH60US18
60 W	19.0 V	3.16 A	25 V	87 %	VEH60US19
60 W	20.0 V	3.0 A	26 V	87 %	VEH60US20
60 W	24.0 V	2.5 A	30 V	87 %	VEH60US24
60 W	30.0 V	2.0 A	36 V	87 %	VEH60US30

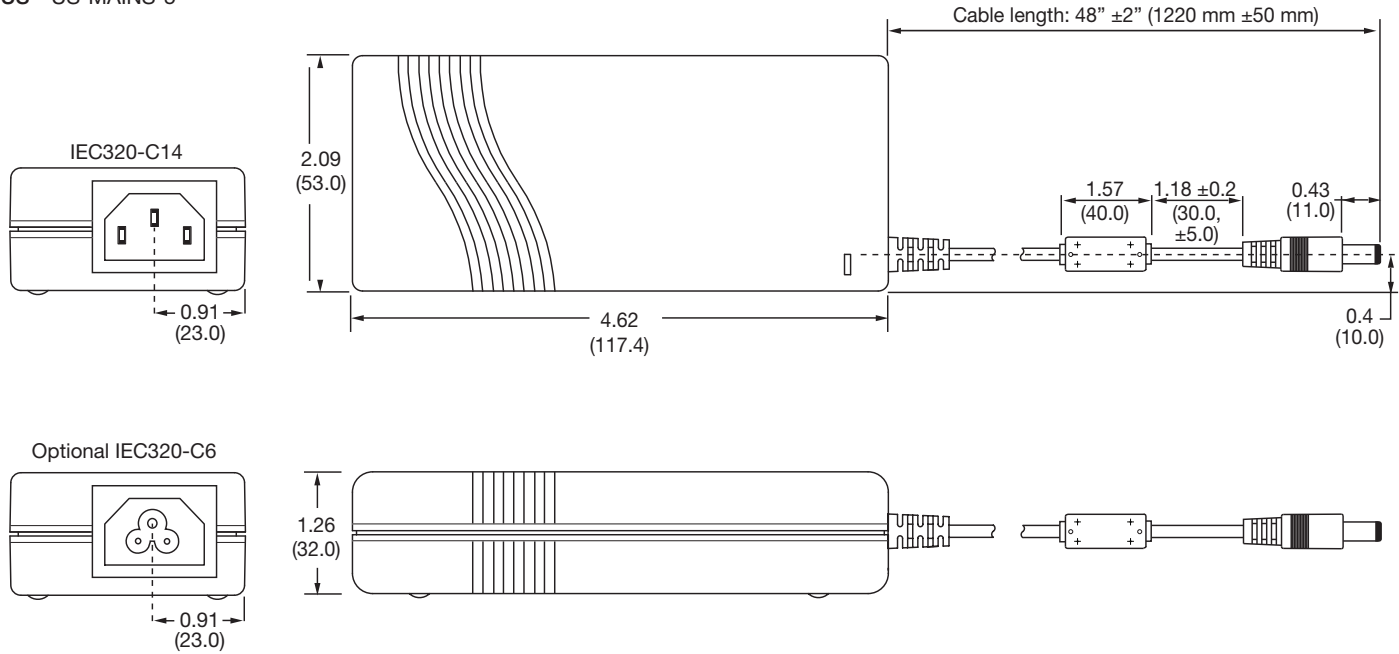
Notes

1. Measured at the output connector with a 0.1 μF ceramic capacitor and a 10 μF electrolytic capacitor.
2. Typical values.
3. Efficiency given is the average of efficiencies measured with output loads of 25%, 50%, 75% and 100%
4. For optional IEC320-C6 input connector, add suffix 'C6' to end of the part number, e.g. VEH60US24C6.

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

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