

50W CONVECTION COOLED



The 50W VEC50 are energy efficiency level VI with 0.15W standby power, these desktop/external AC-DC power supplies are limited power source (LPS) approved and are designed for high volume/low cost applications.

With class I construction the VEC50 are fitted with an IEC320-C14 inlet or optional IEC320-C6 and have a voltage input range of 90 to 264VAC.

The DC lead is fitted with a centre positive 5.5 x 2.5mm barrel jack connector.



#### **Features**

- Regulated single outputs 12V to 24VDC
- ► Energy efficiency level VI
- ► CoC Tier 2
- ▶ Limited power source approved
- <0.15W standby power</p>
- ► Optional inlet connector
- ► China compulsory certficiation (CCC) qualified
- High power density
- Low cost
- ▶ 0°C to +65°C operation
- ▶ 1 year warranty

### **Applications**







Industrial



Instrumentation



Technology

### **Dimensions**

116.3 x 52.4 x 31.3mm (4.58" x 2.06" x 1.23")

#### More resources

Click the link or scan the code





## Models & ratings

Model number	Output voltage	Output current	Total regulation	Efficiency <sup>(1)</sup>	Output power
VEC50US12	12.0VDC	4.16A		85%	50W
VEC50US15	15.0VDC	3.33A	±5%	86%	
VEC50US19	19.0VDC	2.63A	±5%	88%	
VEC50US24	24.0VDC	2.08A		88%	

#### Notes

- 1. Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 230 VAC input.
- 2. For optional IEC320-C6 inlet add suffix -C6 to the part number, e.g. VEC50US24-C6. MOQs apply, contact sales for details.

# **VEC50** series



## Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	90		264	VAC	
Input frequency	47		63	Hz	
Input current		1.0/0.7		Α	Measured at 115/230 VAC
Inrush current			110		230VAC, cold start at +25°C
Power factor	EN61000-3-2 Class A				
Earth leakage current			0.7	mA	264 VAC, 60 Hz
No load input power			0.15	W	
Input protection	T3.15A/250V, fuse fitted in live line				

## Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions	
Output voltage	12		24	VDC	See models & ratings	
Minimum load	No minimum I	oad required				
Start up delay			4	s		
Start up rise time			50	ms		
Hold up time	8			ms	Full load and 115VAC	
Line regulation			±0.5	%		
Total regulation			±5	%	Including initial set accuracy	
Transient response			4	%	Maximum deviation, recovering to less than 1% within 500µs for 25% step load	
Ripple & noise			240	mV pk-pk	Measured with 20MHz Bandwidth and 22μF electrolytic in parallel with 0.1μF ceramic capacitor.	
Temperature coefficient		±0.004		%/°C		
Short circuit protection	Trip and rest	Trip and restart (hiccup), auto resetting				
Overshoot		5		%	At turn on / turn off	
Overload protection	110		170	%		
Overvoltage protection		175			Recycle mains to reset	

## General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		89		%	
		3000		VAC	Input to output
Isolation		1500			Input to ground
	Neg	ative output is c	onnected to gro	ound	Output to ground
Switching frequency		65		kHz	±10kHz
Mean time between failure		>200		khrs	MIL-HDBK-217F, 25°C GB
Weight		245 (0.54)		g (lb)	

## **Environmental**

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	0		+65	°C	Derate from 100% load at +45°C to 50% load at +65°C
Storage temperature	-20		+85	°C	
Cooling	Natural convection				
Operating humidity	5 90 % RH, non-condensing				
Shock	IEC68-2-27, 30g, 11ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 10-500 Hz, 2g 10 mins/sweep, 60 mins for each of 3 axes				



# **VEC50** series



## **EMC: Emissions**

Phenomenon	Standard	Test Level	Notes & conditions
Conducted	EN55032	Level B	
Radiated	EN55032	Level B	
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

## **EMC: Immunity**

Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	±8kV Air, ±4kV contact	А	
Radiated immunity	EN61000-4-3	3V/m	А	
EFT/burst	EN61000-4-4	Level 3	А	
Surge	EN61000-4-5	Inst. Class 3	А	
Conducted	EN61000-4-6	3V	А	
Magnetic fields				
		Dip: 30% 500ms	A/B	High line/low line
Dips and interruptions	EN61000-4-11	Dip: 60% 200ms	A/B	High line/low line
		Int:100% 5000ms	В	

## Safety approvals

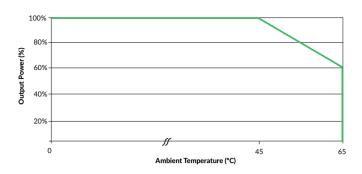
Certification	Standard	Notes & conditions
UL	UL60950-1, UL62368-1	
EN	EN60950-1, EN62368-1	
СВ	IEC60950-1, IEC62368-1	Approved at Limited Power Source (LPS)
AU/NZ	AU/NZ 60950.1	
CCC	China Compulsory Certification, GB4943	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	



## **VEC50** series



### **Derating curve**

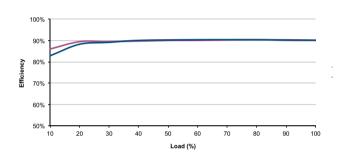


## **Efficiency curve**

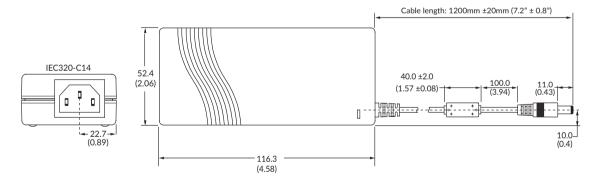
#### **VEC50US12**

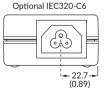
## 100% 90% 80% 60% 10 20 30 40 50 60 70 80 90 100 Load (%)

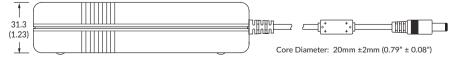
### VEC50US24



#### Mechanical details







Power Cord for C14 inlet, Order Part:

115Vac input

230Vac input

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 mm (inches), Tolerance is  $\pm 1.0$  (0.04") max except output lead.
- 2. Weight: 245g (0.54lbs) approx.

3. Output connector is barrel type with 11mm length, 5.5mm dia. outer, 2.5mm dia. inner with center + and outer shell - polarity.