

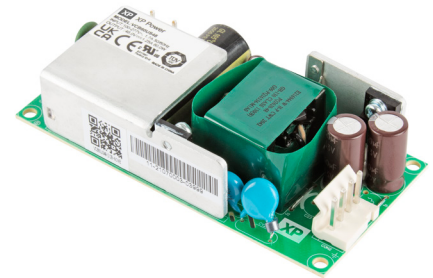
60W Convection cooled

AC-DC power supplies 

The VCB60 is a series of open frame AC-DC single output power supplies designed for low cost ITE, industrial and domestic applications.

With approvals to world-wide safety standards including ITE and Household, compliance with class B for conducted and radiated emissions, this series benefit system designers with easy integration into a wide range of applications.

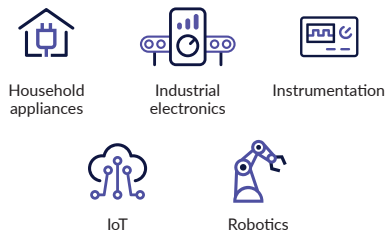
A wide input range of 90-305VAC and approval to overvoltage category III (OVC III) eases installation in building wiring systems.



Features

- ▶ 60W convection cooled
- ▶ 101.6 x 50.8mm (4" x 2") footprint, 25.6mm profile
- ▶ Regulated single outputs 5V to 54VDC
- ▶ Wide input range of 90 to 305VAC
- ▶ Up to 277VAC nominal input voltage
- ▶ Overvoltage category III
- ▶ ITE & household appliance approvals
- ▶ Class B conducted and radiated emissions
- ▶ Immunity to the latest EN55035 standard
- ▶ Low no-load power consumption <0.3W
- ▶ Typically 90% efficiency
- ▶ -10°C to +60°C operating ambient
- ▶ 1 year warranty

Applications



Dimensions

101.6 x 50.8 x 25.6 mm (4.00" x 2.00" x 1.01")

Documentation

For further information click the link or scan the code

→ xppower.com



Models & ratings

Model number	Output power	Output voltage	Output current
VCB60US05	40W	5.0VDC	8.00A
VCB60US12	60W	12.0VDC	5.00A
VCB60US15	60W	15.0VDC	4.00A
VCB60US19	60W	19.0VDC	3.16A
VCB60US24	60W	24.0VDC	2.50A
VCB60US30	60W	30.0VDC	2.00A
VCB60US48	60W	48.0VDC	1.25A
VCB60US54	60W	54.0VDC	1.11A

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	90		305	VAC	
Input frequency	47		63	Hz	
Input current - full load		1.7/0.85		A rms	115/230VAC full load
No load input power			0.3	W	
Inrush current			70	A	At 230VAC, cold start +25°C
Earth leakage current			200	µA	
Input protection	Internal T3.15A/300VAC fuse fitted in line				

Output

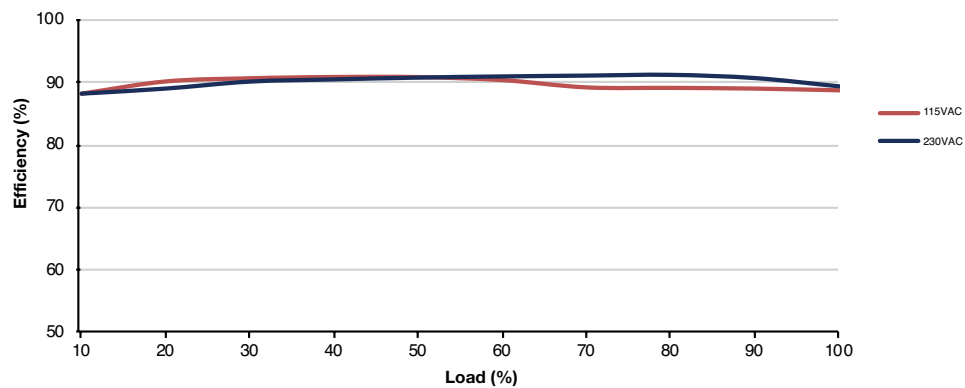
Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	5		54	VDC	
Initial set accuracy			1.0	%	
Minimum load	No minimum load required				
Line regulation			1	%	
Load regulation			2	%	
Start up delay			2.5	s	
Start up rise time			35	ms	
Hold up time	8	14		ms	At full load and 115 VAC
Transient response			4	%	Deviation, recovery within 1% in less than 500µs for a 25% load change
Ripple & noise			1	%	Measured with 20MHz bandwidth and 10µF electrolytic in parallel with 0.1µF ceramic
Overvoltage protection	115		160	% Vnom	
Overload protection	110		190	%	
Short circuit protection	Trip & restart (hiccup mode)				
Temperature coefficient			0.05	%/°C	

General

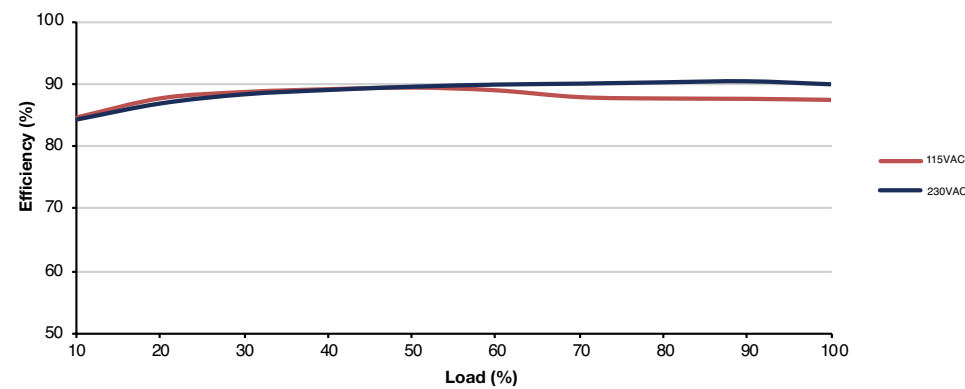
Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		85		%	Model dependant
Isolation: input to output input to ground output to ground	3000			VAC	
	1500			VAC	
	500			VDC	
Switching frequency	5		75	kHz	Varied with load
Power density			0.451 (7.4)	W/cm³ (W/in³)	
Mean time between failure	550	600		khls	MIL-HDBK-217F, +25°C GB.
Weight		130 (0.29)		g (lb)	

Efficiency graphs

VCB60US12



VCB60US24



Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-10		+70	°C	Derate linearly from 100% load at +50°C to 50% load at +70°C.
Storage temperature	-40		+85	°C	
Cooling	Convection cooled				
Humidity			95	%RH	Non-condensing
Operating altitude			5000	m	
Shock	IEC68-2-27, 30g, 11ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 2g, 10Hz to 500kHz, 10 mins/cycle, 60 mins each cycle				

EMC: emissions

Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032, EN55014-1	Class B	
Radiated	EN55032, EN55014-1	Class B	
Harmonic currents	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

EMC: immunity

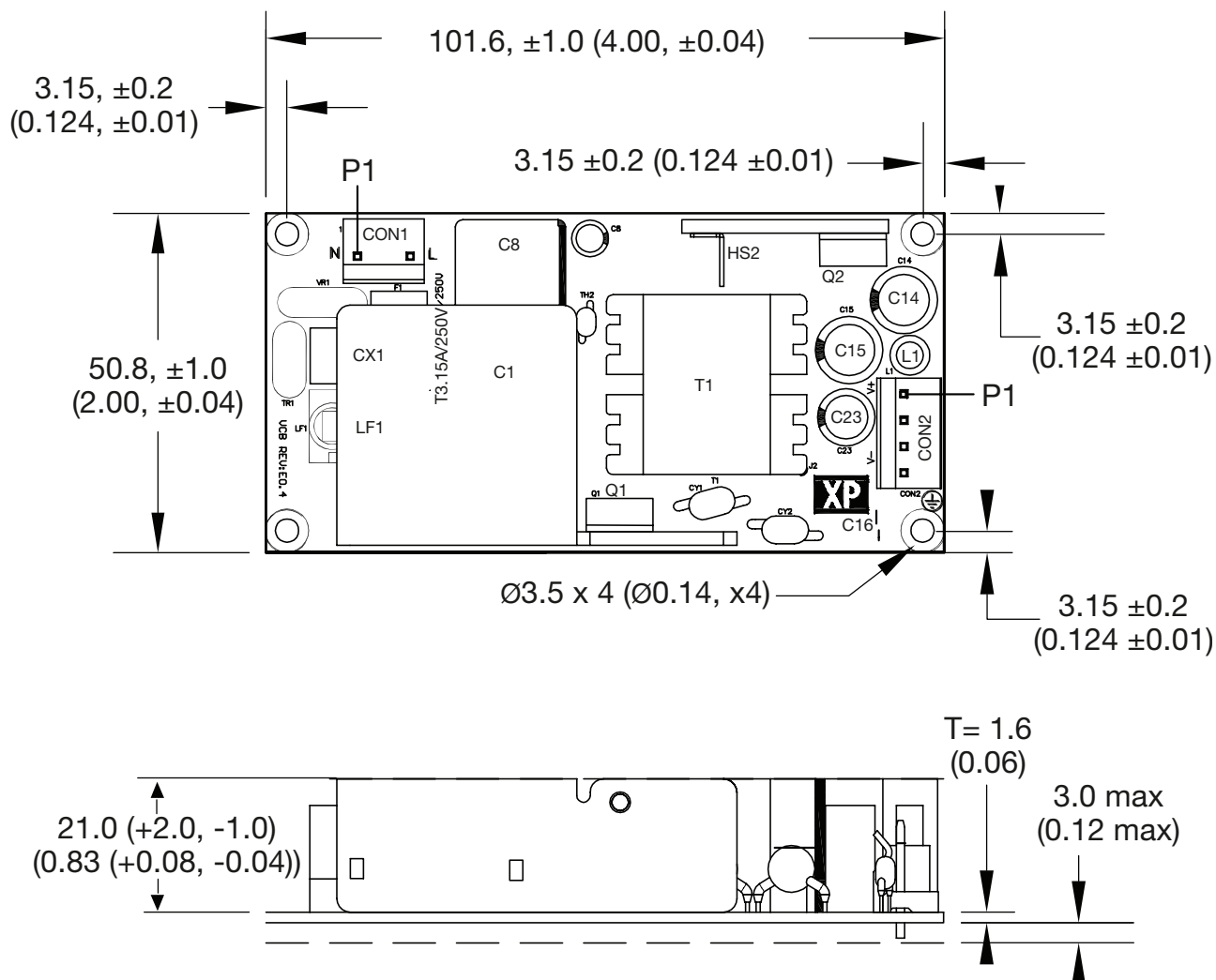
Phenomenon	Standard	Test level	Criteria	Notes & conditions
ITE	EN55024 EN55035 EN55014-2	as below	as below	
ESD immunity	EN61000-4-2	2/3	A	±6kV contact / ±8kV air discharge
Radiated immunity	EN61000-4-3	10V/m	A	
EFT	EN61000-4-4	3	A	
Surge	EN61000-4-5	2	A	Line to line
Conducted	EN61000-4-6	10Vrms	A	
Magnetic field	EN61000-4-8	30A/m	A	
Dips and interruptions	EN61000-4-11 (115 VAC)	70% U ^T (80.5 VAC) for 100ms	A	
		40% U ^T (46 VAC) for 200ms	B	
		<5% U ^T (0 VAC) for 10ms	A	
		<5% U ^T (0 VAC) for 5000ms	B	
	EN61000-4-11 (230 VAC)	70% U ^T (161 VAC) for 100ms	A	
		40% U ^T (92 VAC) for 200ms	A	
		<5% U ^T (0 VAC) for 10ms	A	
		<5% U ^T (0 VAC) for 5000ms	B	

Safety approvals

Certification	Standard	Notes & conditions
CB report	IEC60950-1, IEC62368-1	Information and communication technology equipment
	IEC60335-1	Household and similar appliances
UL	UL62368-1	Information and communication technology equipment
EN	EN62368-1	Information and communication technology equipment
	EN61558-1 & -2-16	General safety for power supplies
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	



Mechanical details



Mounting hole marked with must be connected to safety earth.

Pin connections CN1	
Pin	Function
1	N
2	
3	L

Mates with MOLEX housing 09-50-3031 and MOLEX series 2878 crimp terminals

Pin connections CN2	
Pin	Function
1	+Vout
2	+Vout
3	-Vout
4	-Vout

Mates with MOLEX housing 09-50-3041 and MOLEX series 2878 crimp terminals

Notes:

- Dimensions in mm (inches).
- Weight: 130g (0.29lbs)

- Tolerances: x.x = ± 1.0 (x.xx = ± 0.04) x.xx = ± 0.25 (x.xxx = ± 0.01)