

## VCP Series



- Low Cost
- Output Voltages from 5 to 24 V
- PCB Mounting
- Open Frame & Encapsulated Versions
- IT & Medical Approvals
- Class II Construction
- No Load Input Power <0.3 W

## Specification

## Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 0.5 A max at 90 VAC
Inrush Current	• 40 A max at 240 VAC, cold start at 25 °C
Power Factor	• EN61000-3-2, class A
No Load Input Power	• <0.3 W
Input Protection	• Internal T2.0A/250 V fuse in line

## Output

Output Voltage	• See table
Initial Set Accuracy	• $\pm 2\%$ at 50% load
Minimum Load	• No minimum load required
Start Up Delay	• 2 s max
Start Up Rise Time	• 100 ms typical
Hold Up Time	• 5 ms typical at full load and 115 VAC
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• 2% max, 0-100% load
Transient Response	• 10% max. deviation, recovery to <1% within 500 $\mu$ s for a 50% step load change at 0.2 A/ $\mu$ s
Ripple & Noise	• See table
Overvoltage Protection	• See table
Overload Protection	• 120-280 %, auto recovery
Short Circuit Protection	• Trip and restart (hiccup mode)
Temperature Coefficient	• 0.2 %/°C

## General

Efficiency	• See table
Isolation	• 4000 VAC Input to Output
Switching Frequency	• 132 kHz typical
MTBF	• 250 kHrs to MIL-HDBK-217F at 25 °C, GB

## Environmental

Operating Temperature	• 0 °C to +70 °C, derate from 100% load at 50 °C to 50% load at 70 °C
Cooling	• Natural convection
Operating Humidity	• 5-90% RH, non-condensing
Storage Temperature	• -20 °C to +80 °C
Vibration	• 10-300 Hz, 2 g 15 mins/sweep. 30 mins for each of 3 axes

## EMC &amp; Safety

Emissions	• EN55032, level B conducted & radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, $\pm 4$ kV indirect contact, $\pm 8$ kV air, Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 2, Perf Criteria A
Surge	• EN61000-4-5 installation class 3, Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V, Perf Criteria A
Magnetic Field	• EN61000-4-8, 1 A/m, Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B
Safety Approvals	• EN60950-1, cUL60950-1, IEC60950-1, EN60601-1, cUL60601-1, IEC60601-1, EN62368-1, IEC62368-1

## Models and Ratings

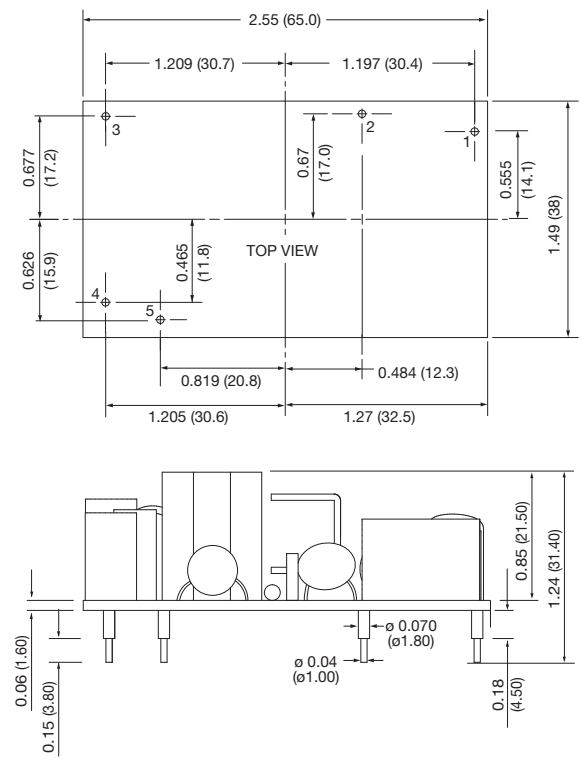
Output Power	Output Voltage <sup>(2)</sup>	Output Current	Ripple & Noise <sup>(1)</sup>	OVP Setting <sup>(3)</sup>	Efficiency <sup>(5)</sup>	Model Number <sup>(4)</sup>
10 W	5.0 V	2.00 A	100 mV	10.0 V	74%	VCP15US05
15 W	12.0 V	1.25 A	100 mV	20.0 V	82%	VCP15US12
15 W	15.0 V	0.90 A	150 mV	25.0 V	83%	VCP15US15
15 W	24.0 V	0.63 A	200 mV	35.0 V	84%	VCP15US24

### Notes

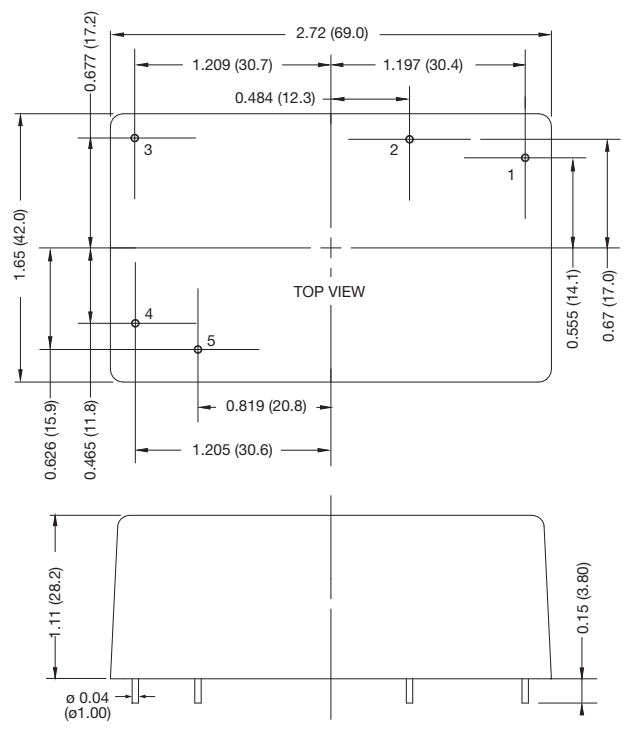
1. Measured at DC output connector using 20 MHz bandwidth and 0.1  $\mu$ F ceramic capacitor in parallel with 10  $\mu$ F electrolytic capacitor placed at connector terminals.
2. Other voltages between 5.0 V and 24 V are available, consult sales for details.
3. Typical trip point.
4. For encapsulated versions, add suffix '-E' to the model number e.g VCP15US24-E.
5. Average of efficiencies measured at 25%, 50%, 75% & 100% load and 230 VAC input.

## Mechanical Details

### Open Frame Version



### Encapsulated Version (-E)



Pin	Designation
1	Live
2	Neutral
3	No connection
4	Output -VE
5	Output +VE

### Notes

1. All dimensions are in inches (mm).
2. Weight: Open frame versions: 0.09 lbs (40 g) approx.  
Encapsulated versions: 0.22 lbs (100 g) approx.
3. Tolerance: x.xx =  $\pm 0.04$  (x.x =  $\pm 0.1$ ); x.xxx =  $\pm 0.2$  (x.xx =  $\pm 0.5$ )

