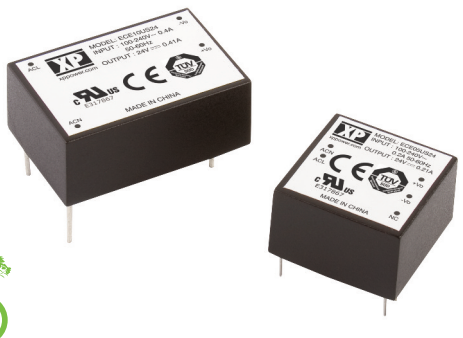
5/10 Watts
ECE Series



GREEN XP POWER

- Ultra Compact Size
- Single Outputs from 3.3 to 48 V
- Encapsulated PCB Mount
- <0.3 W No Load Input Power
- Peak Load Capability
- No External Components Required
- 3 Year Warranty

Specification

Input

Input Voltage	• 85-264 VAC (120-370 VDC) derate load from 100% at 90 VAC to 90% at 85 VAC
Input Frequency	• 47-63 Hz
Input Current	• ECE05: 0.1 A rms at 230 VAC ECE10: 0.2 A rms at 230 VAC
Inrush Current	• ECE05: 5 A at 115 VAC, 10 A at 230 VAC, ECE10: 10 A at 115 VAC, 20 A at 230 VAC cold start at 25 °C
Power Factor	• EN61000-3-2 Class A
Earth Leakage Current	• Class II construction no earth
No Load Input Power	• <0.3 W
Input Protection	• Internal T1 A/250 VAC fuse

Output

Output Voltage	• See tables
Initial Set Accuracy	• ±1%
Minimum Load	• No minimum load required
Start Up Delay	• 2 s max
Start Up Rise Time	• 25 ms max
Hold Up Time	• 8 ms/40 ms typical at full load and 115/230 VAC
Line Regulation	• ±0.5% max
Load Regulation	• ±1% max
Transient Response	• 4% max deviation, recovery to within 1% in 500 µs for a 25% load change
Ripple & Noise	• 3.3-5 V versions: 60 mV pk-pk, all other models 1% pk-pk max 20 MHz bandwidth
Overvoltage Protection	• 125-190%, 195-216% ECE10US03
Overload Protection	• 125-190%
Short Circuit Protection	• Trip and restart (hiccup mode)
Temperature Coefficient	• 0.05%/°C

General

Efficiency	• See tables
Isolation	• 4000 VAC Input to Output
Switching Frequency	• 130 kHz typical
Power Density	• ECE05: 8.3 W/In^3 ECE10: 11.1 W/In^3
MTBF	• >450 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -25 °C to +70 °C, derate linearly from 100% at +50 °C to 50% at +70 °C
Cooling	• Convection-cooled
Operating Humidity	• 95% RH, non-condensing
Storage Temperature	• -40 °C to +85 °C
Operating Altitude	• 3048 m, 10,000 ft
Vibration	• 2 g, 10 Hz to 500 Hz, 10 mins/cycle, 60 mins each of 3 axes.

EMC & Safety

Emissions	• EN55022, level B conducted & radiated*
Harmonic Currents	• EN61000-3-2, EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 10 V/m 80% mod Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, installation Class 3, Perf Criteria A
Conducted Immunity	• EN61000-4-6, 10 Vrms Perf Criteria A
Magnetic Fields	• EN61000-4-8, 10 A/m Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% for 10 ms, 60% for 100 ms, 100% for 5000 ms Perf Criteria A, B, B
Safety Approvals	• EN60950-1, UL60950-1, CSA22.2 No. 234 per cUL

Notes

* If output is connected to GND, please contact applications engineering for further information.

Models and Ratings

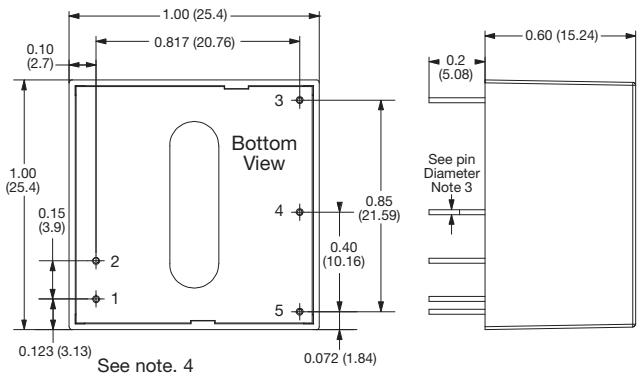
Output Power	Output Voltage	Output Current		Efficiency[3]	Model Number[2]
		Nominal	Peak[1]		
5.0 W	3.3 VDC	1.51 A	1.81 A	74%	ECE05US03
5.0 W	5.0 VDC	1.00 A	1.20 A	80%	ECE05US05
5.0 W	9.0 VDC	0.55 A	0.66 A	82%	ECE05US09
5.0 W	12.0 VDC	0.41 A	0.49 A	82%	ECE05US12
5.0 W	15.0 VDC	0.33 A	0.40 A	84%	ECE05US15
5.0 W	24.0 VDC	0.21 A	0.25 A	83%	ECE05US24
5.0 W	48.0 VDC	0.10 A	0.12 A	85%	ECE05US48
8.6 W	3.3 VDC	2.60 A	3.12 A	77%	ECE10US03
10.0 W	5.0 VDC	2.00 A	2.40 A	80%	ECE10US05
10.0 W	9.0 VDC	1.11 A	1.33 A	82%	ECE10US09
10.0 W	12.0 VDC	0.83 A	1.00 A	83%	ECE10US12
10.0 W	15.0 VDC	0.66 A	0.79 A	82%	ECE10US15
10.0 W	24.0 VDC	0.41 A	0.49 A	83%	ECE10US24
10.0 W	48.0 VDC	0.21 A	0.25 A	83%	ECE10US48

Notes

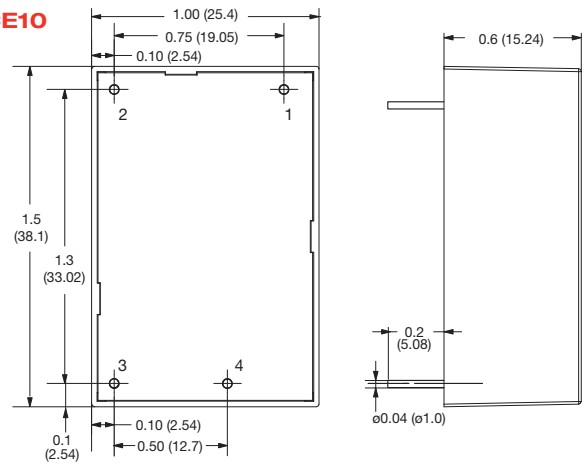
1. *Peak load lasting <30 s with a maximum duty cycle of 10%, average output power not to exceed nominal power.*
2. *Add suffix-P to model number to denote open frame version. Available for OEM quantities.*
3. *Efficiencies measured at 100% load with 115 VAC input.*

Mechanical Details

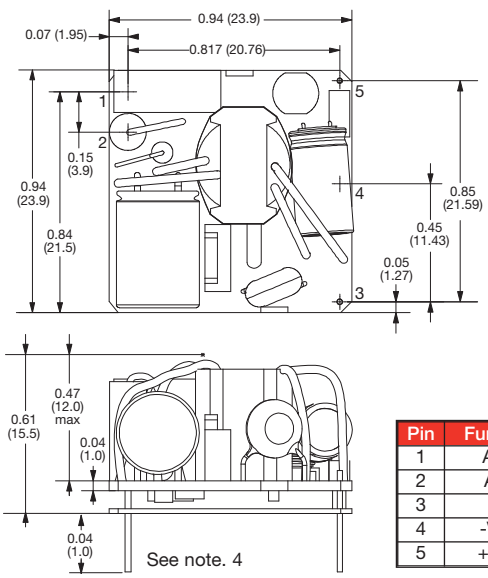
ECE05



ECE10

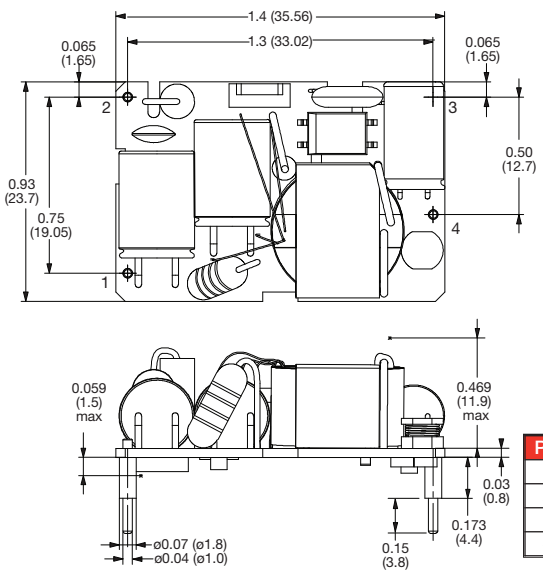


ECE05-P



Pin	Function
1	ACN
2	ACL
3	NC
4	-Vout
5	+Vout

ECE10-P



Pin	Function
1	ACN
2	ACL
3	-Vout
4	+Vout

Notes

1. All dimensions in inches (mm).
2. Weight: ECE05: 0.035 lbs (16 g) ECE10: 0.053 lbs (24 g)
   ECE05-P: 0.022 lbs (10 g) ECE10-P: 0.031 lbs (14 g)
3. Pin 1, 2 Size is 0.024" (0.6mm) DIA 0.002" (0.05mm)
   Pin 3, 4, 5 Size is 0.02" (0.5mm) DIA 0.002" (0.05mm)
   Tolerances: x.xx = ± 0.02 (x.x = ± 0.5), x.xxx = ± 0.01 (x.xx = ± 0.25)
4. ECE05: The solder pads for pins 1 & 2 should have a maximum diameter of 1.3mm to ensure that the creepage requirements of IEC60950 are met.