

The ECE10 series as standard is supplied as an encapsulated PCB mount device, for OEM quantities it is also available as an open frame PCB mount (suffix -P).

With approvals to world-wide safety standards, compliance with class B for conducted & radiated emissions and a 20%, 30s peak load capability.

Not requiring any external components, these class II isolation parts benefit system designers with easy integration into a wide range of applications.



Features

- ▶ Regulated single outputs 3.3 to 48VDC
- ▶ Input range 85 to 264VAC
- ▶ Encapsulated or open frame PCB mount package
- ▶ Peak load capability
- ▶ 4.0kVAC input to output isolation
- ▶ No external components required
- ▶ -25°C to +70°C operating temperature
- ▶ Full load to +50°C
- ▶ 3 year warranty

Applications

Instrumentation

IoT

Security

Technology

Dimensions

ECE10:
38.1 x 25.4 x 15.24mm (1.50" x 1.00" x 0.60")

ECE10-P:
35.56 x 23.7 x 16.3mm (1.40" x 0.93" x 0.64")

Documentation

For further information click the link or scan the code

→ xppower.com

Model Number ⁽²⁾	Output Voltage	Output Current		Efficiency ⁽³⁾	Output Power
		Nominal	Peak ⁽¹⁾		
ECE10US03	3.3VDC	2.60A	3.12A	77%	10W
ECE10US05	5.0VDC	2.00A	2.40A	80%	10W
ECE10US09	9.0VDC	1.11A	1.33A	82%	10W
ECE10US12	12.0VDC	0.83A	1.00A	83%	10W
ECE10US15	15.0VDC	0.66A	0.79A	82%	10W
ECE10US24	24.0VDC	0.41A	0.49A	83%	10W
ECE10US48	48.0VDC	0.21A	0.25A	83%	10W

Notes:

1. Peak load lasting <30s 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 115VAC input.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	85		264	VAC	Derate load from 100% at 90VAC to 90% at 85VAC
	120		370	VDC	
Input frequency	47		63	Hz	
Input current			0.2	A rms	At 230VAC
No load input power			0.3	W	
Inrush current			10/20	A	10A at 115VAC, 20A at 230VAC cold start at +25°C
Earth leakage current					Class II construction no earth
Input protection	Internal T1 A/250VAC fuse				
Power factor	EN61000-3-2 Class A				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	3.3		48	VDC	
Initial set accuracy			±1	%	
Minimum load	0			A	No minimum load required
Line regulation			±0.5	%	
Load regulation			±1		
Start up delay			2	s	
Start up rise time			25	ms	
Hold up time		8		ms	At full load and 115VAC
		40			At full load and 230VAC
Transient response			4	%	Deviation, recovery within 1% in less than 500µs for a 25% load change
Ripple & noise			60	mV pk-pk	3.3 & 5V models, 20MHz bandwidth
			1	% pk-pk	All other models, 20MHz bandwidth
Overvoltage protection	125		190	%	
	195		216		ECE10US03
Overload protection	125		190	%	
Short circuit protection					Trip & restart (hiccup mode)
Temperature coefficient			0.05	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		83		%	
Isolation: input to output	4000			VAC	
Switching frequency		130		kHz	
Power density			28.194 (11.1)	W/cm³ (W/in³)	
Mean time between failure	450			khrs	MIL-HDBK-217F, +25°C GB
Weight		24 (0.053)		g (lbs)	ECE10
		14 (0.031)			ECE10-P

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating Temperature	-25		+70	°C	Derate linearly from 100% at +50°C to 50% at +70°C
Storage Temperature	-40		+85	°C	
Cooling	Convection-cooled				
Humidity			95	%RH	Non-condensing
Operating Altitude			3048 (10 000)	m (ft)	
Vibration	2g, 10Hz to 500Hz, 10 mins/cycle, 60 mins each of 3 axes.				

Safety approvals

Certification	Standard	Notes & conditions
CB	IEC60950-1	ITE
	IEC62368-1	
UL	UL62368-1	ITE
TUV	EN62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

EMC: emissions

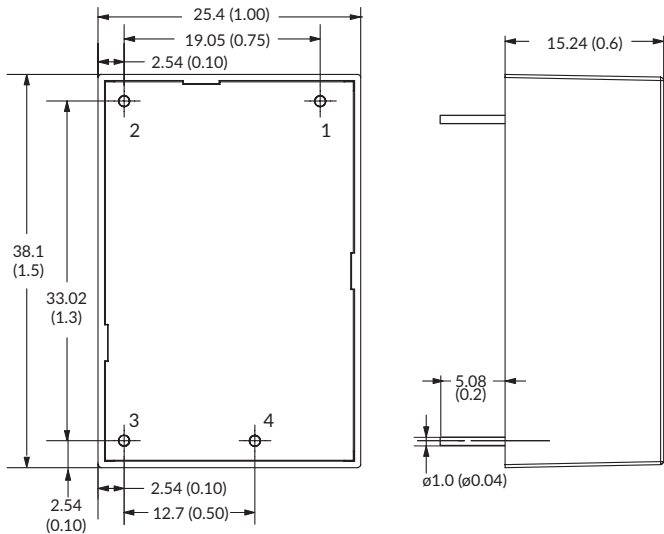
Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Class B	If output is connected to ground, please contact applications engineering for further information
Radiated	EN55032	Class B	
Harmonic current	EN61000-3-2, EN61000-3-3	Class A	

EMC: immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD immunity	EN61000-4-2	3	A	
Radiated immunity	EN61000-4-3	10 V/m, 80%	A	
EFT/Burst	EN61000-4-4	3	A	
Surge	EN61000-4-5	3	A	Line to line
Conducted	EN61000-4-6	10Vrms	A	
Magnetic fields	EN61000-4-8	10A/m	A	
Dips and interruptions	EN61000-4-11	30% for 10ms	A	
		60% for 100ms	B	
		100% for 5000ms	B	

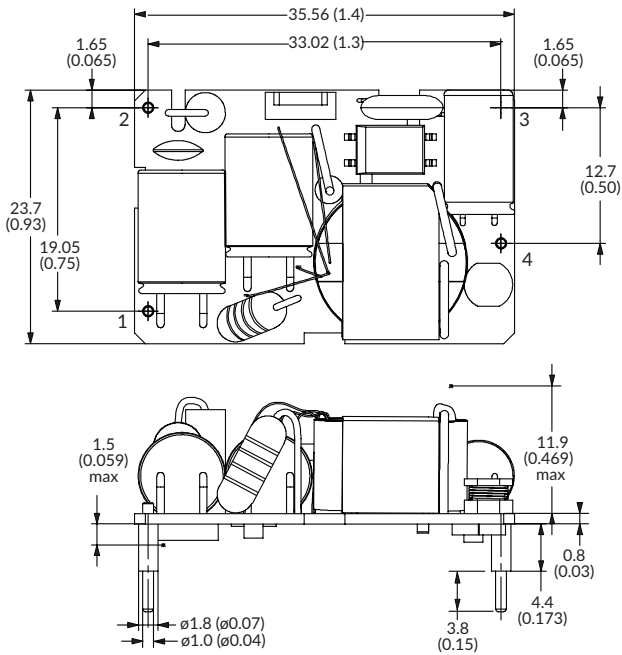
Mechanical details

ECE10



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

ECE10-P



Notes:

- 1. All dimensions in mm (inches).
- 2. Weight: ECE10: 24g (0.053lbs), ECE10-P: 14g (0.031lbs)
- 3. Pin 1, 2 Size is 0.6mm (0.024") DIA 0.05mm (0.002")
Pin 3, 4, 5 Size is 0.5mm (0.02") DIA 0.05mm (0.002")
- 4. Tolerances: x.xx (x.x) = ± 0.5 (± 0.02). x.xxx (x.xx) = ± 0.25 (± 0.01)