ECL25 series

25W

AC-DC power supplies

The ECL25 series is a range of single output AC-DC power supplies that delivers 25W of power and offers output voltages ranging from 3.3V to 48V. The ECL25 series can be supplied as PCB mount open frame (suffix -P), PCB mount encapsulated (suffix -E), open frame chassis mount (suffix -T), or as encapsulated chassis mount with screw terminals (suffix -S) with an optional DIN clip (suffix -SD). The ECL25 has IEC Class II construction and a no-load input power less than 0.3W.

The ECL25 series, with worldwide ITE safety approvals, Class B conducted and radiated emissions, IEC Class II insulation, and 3kVAC isolation, is ideal for a wide range of industrial and analytical instrumentation applications including test and measurement, process control, factory automation, communications and other ITE applications.

Features

- Single voltage outputs from 3.3V to 48VDC
- Universal input range 85-264VAC
- 3kVAC input to output isolation
- <0.3W no load input power
- EN55032 Class B conducted and radiated emissions
- IEC62368-1 ITE safety agency approvals
- IEC Class II insulation rating
- Overvoltage, overload, and short circuit protection
- -20°C to +70°C operating temperature
- 3 year warranty

Applications

Instrumentation

Robotics

IoT

Process control

Dimensions

ECL25-P
75.2 x 34.6 x 22.3mm (2.96" x 1.36" x 0.88")

ECL25-E
78.7 x 38.1 x 27.9mm (3.10" x 1.50" x 1.10")

ECL25-T
87.9 x 34.6 x 22.4mm (3.46" x 1.36" x 0.88")

ECL25-S
96.0 x 40.0 x 28.5mm (3.78 x 1.57 x 1.12")

Models & ratings

Model number[2]	Output voltage	Output current		Efficiency	Output power
		Nominal	Peak[1]		
ECL25US03	3.3VDC	6.00A	7.80A	75%	20W
ECL25US05	5.0VDC	5.00A	6.50A	78%	25W
ECL25US09	9.0VDC	2.80A	3.64A	80%	25W
ECL25US12	12.0VDC	2.10A	2.73A	80%	25W
ECL25US15	15.0VDC	1.67A	2.17A	80%	25W
ECL25US24	24.0VDC	1.04A	1.35A	82%	25W
ECL25US48	48.0VDC	0.52A	0.68A	82%	25W

Notes:

1. Peak load lasting <30s with a maximum duty cycle of 10%, average output power not to exceed nominal.
2. Add suffix to model number to define type: add '-P' for PCB mount, add '-T' for chassis mount, add '-E' for encapsulated, add '-S' for screw terminals.
3. A screw terminal version (-S) is available with DIN clip attached, add suffix 'D', e.g. ECL25US24-SD, DIN rail mounting kit is available as a separate item, order code ECL25/30 DIN CLIP.

ECL25 series

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	85		264	VAC	
	120		370	VDC	
Input frequency	47		63	Hz	
Input current		0.4		A rms	At 230VAC
No load input power			<0.3	W	
Inrush current			20	A	At 115VAC, cold start at 25°C
			40	A	At 230VAC, cold start at 25°C
Earth leakage current					Class II construction no earth
Input protection	Internal T2A/250 VAC fuse				
Power factor	EN61000-3-2 Class A				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	75		82	%	See models & ratings
Isolation: input to output	3000			VAC	
Switching frequency		70		kHz	
Power density			96.68 (5.9)	W/cm^3 (W/in^3)	PCB mount version
Mean time between failure	>400			khrs	MIL-HDBK-217F, +25°C GB
Weight		66 (0.14)		g (lb)	ECL25-P
		66 (0.14)			ECL25-T
		150 (0.33)			ECL25-E
		170 (0.37)			ECL25-S

ECL25 series

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	3.3		48	VDC	
Output voltage trim		±5		%	
Initial set accuracy			±1	%	
Minimum load	None				
Line regulation			±0.5	%	
Load regulation			±1		
Start up delay			3	s	
Start up rise time			14	ms	
Hold up time		16		ms	At full load and 115VAC
Transient response			4	%	Deviation, recovery within 1% in less than 500µs for a 25% load change
Ripple & noise			50	mV pk-pk	3.3-5V versions, 20 MHz bandwidth
			90		9V versions, 20 MHz bandwidth
			120		12-15V versions, 20 MHz bandwidth
			200		24-48V versions, 20 MHz bandwidth
Overvoltage protection	115		140	% Vnom	
	195		216		3.3V
Overload protection	120		170	%	
Short circuit protection	Trip & restart (hiccup mode)				
Temperature coefficient			0.05	%/°C	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-20		+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			3000 (9842)	m (ft)	
Vibration	2g, 10Hz to 500Hz, 10 mins/cycle, 60 mins each cycle				

ECL25 series

Emissions - EMC

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

Emissions - Immunity

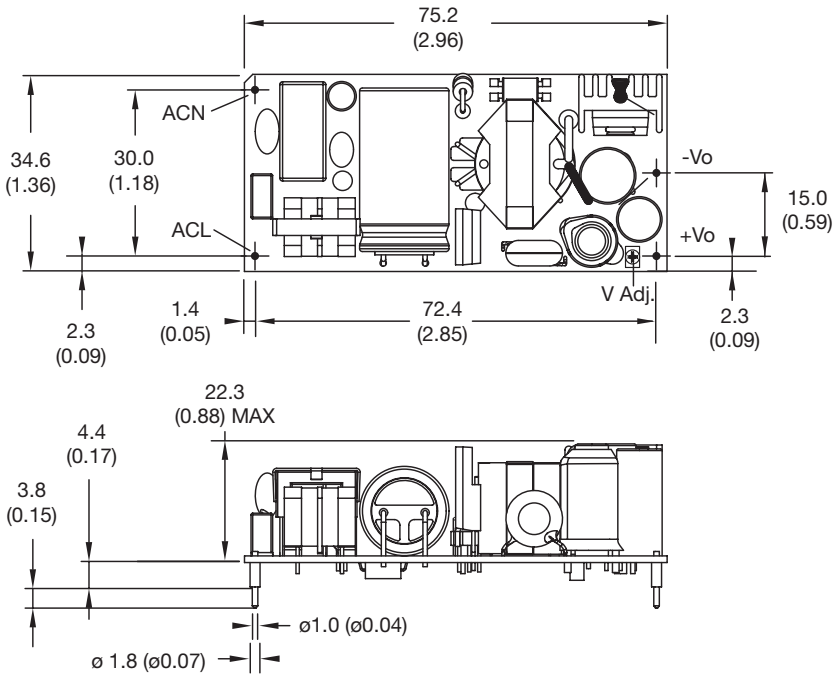
Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	3	A	
Radiated immunity	EN61000-4-3	10 V/m, 80%	A	
EFT/burst	EN61000-4-4	3	A	
Surge	EN61000-4-5	3	A	
Conducted	EN61000-4-6	10Vrms	A	
Magnetic fields	EN61000-4-8	10A/m	A	
Dips and interruptions	EN61000-4-11	30% for 10ms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

Safety approvals

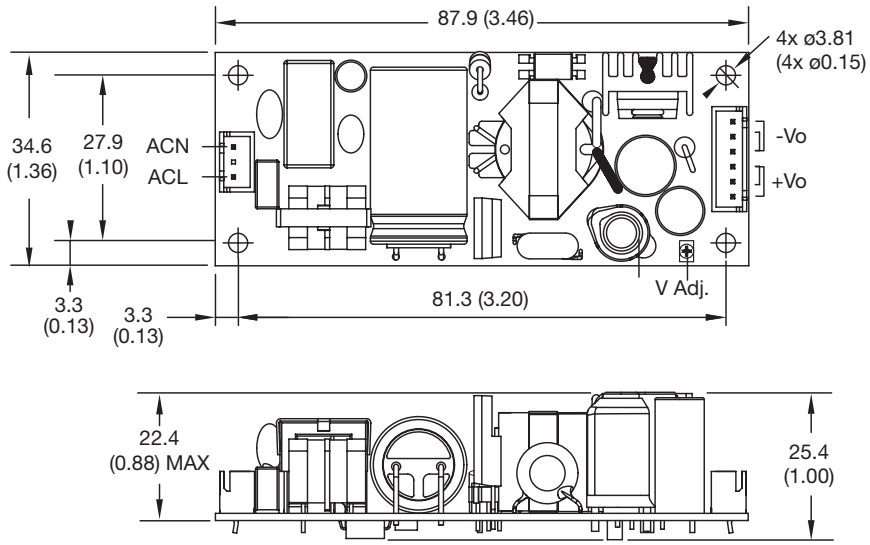
Certification	Standard	Notes & conditions
CB	IEC60950-1:2005 Ed 2 / IEC62368-1:2014	
UL	UL62368-1 & CAN/CSA C22.2 No. 62368- 1-14	
EN	EN62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Mechanical details

Open frame - PCB mount (-P)



Open frame - Chassis mount (-T)



Notes:

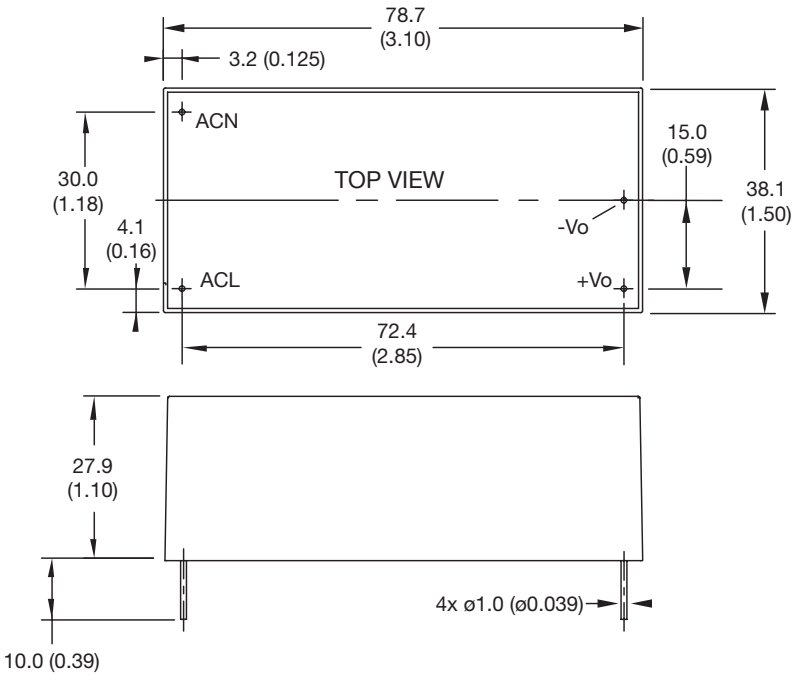
1. All dimensions in mm (inches).
2. Weight: ECL25 -P version: 66g (0.14lb); ECL25 -T version: 66g (0.14lb);
3. Tolerances: x.x (x.xx) = ±0.5 (±0.02). x.xx (x.xxx) = ±0.25 (±0.01)

Mating Connectors (-T version only)
Input Connector: JST XHP-3
Output Connector: JST XHP-6
Crimps: SXH-002T-P0.6
Cable harness with 300 mm wire available, order part no. ECL25 LOOM KIT

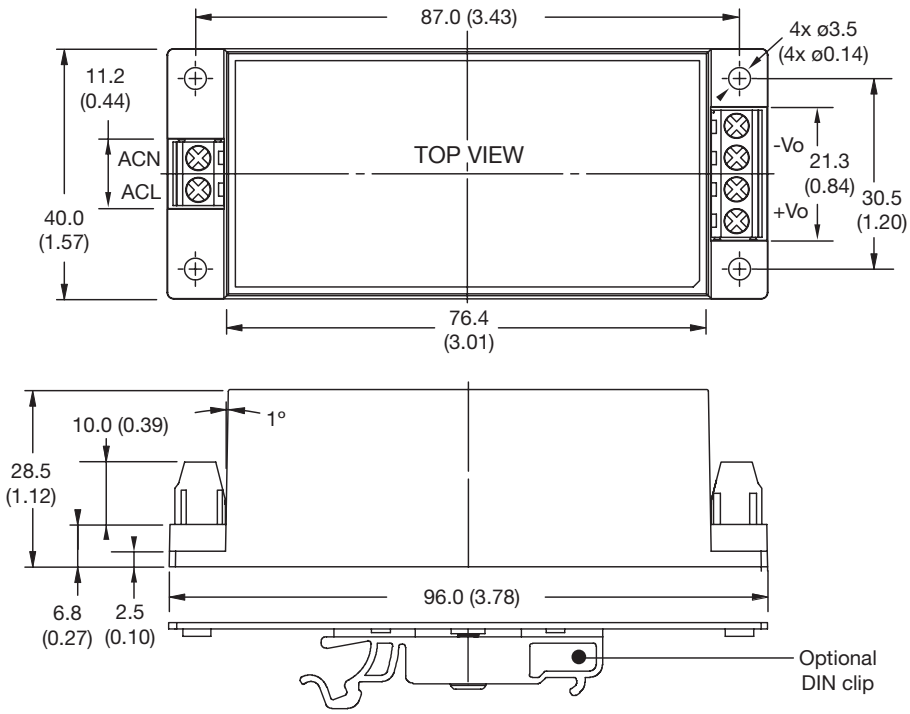
ECL25 series

Mechanical details

Encapsulated (-E)



Screw terminal (-S)



Notes:

1. All dimensions in mm (inches).
2. Weight: ECL15 -E version: 150g (0.33lbs); ECL15-S Version: 170g (0.37lbs)
3. Tolerances: x.x (x.xx) = ±0.5 (±0.02). x.xx (x.xxx) = ±0.25 (±0.01)