



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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### 80 Watts

- Ultra Compact Size
- Single Outputs from 12 to 48 V
- Encapsulated
- PCB, Chassis Mount and DIN Rail Versions
- <0.3 W No Load Input Power
- -40 to +70 °C Operation
- Peak Load Capability
- 3 Year Warranty



The ECE80 series of compact encapsulated AC-DC power modules are available in both PCB & chassis mount versions offering exceptional power density of >11W/in<sup>3</sup>. Output voltages are available from 12 – 48 VDC and these “green power” modules offer high active mode efficiency and low no load power consumption. They also provide a peak load capability up to 130% of nominal power for up to 30s and a wide operating temperature range from -40 to +70°C.

#### Dimensions:

##### ECE80:

3.60 x 1.80 x 1.10" (91.4 x 45.72 x 28.0 mm)

##### ECE80-S:

4.45 x 1.87 x 1.12" (113.0 x 47.5 x 28.5 mm)

### Models & Ratings

Output Power	Output Voltage	Output Current		Efficiency <sup>(4)</sup>	Model Number <sup>(2,3)</sup>
		Nominal	Peak <sup>(1)</sup>		
80 W	12.0 V	6.67 A	8.67 A	88%	ECE80US12
80 W	15.0 V	5.33 A	6.93 A	88%	ECE80US15
80 W	24.0 V	3.33 A	4.33 A	87%	ECE80US24
80 W	36.0 V	2.22 A	2.89 A	87%	ECE80US36
80 W	48.0 V	1.67 A	2.17 A	87%	ECE80US48

### 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 -S to model number to denote chassis mount with screw terminal type, e.g. ECE80US12-S.
3. A screw terminal version (-S) is available with DIN Clip attached. Add suffix 'D', e.g. ECE80US24-SD. DIN Rail mounting clip is available as a separate item, order code ECE80 DIN CLIP.
4. Average of efficiencies measured at 25%, 50%, 75% & 100% load with 230 VAC input.

### Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	85		264	VAC	Derate load from 100% at 90 VAC to 90% at 85 VAC
No Load Input Power			<0.3	W	12-36 V versions
			<0.5	W	48 V version
Efficiency	86	87	88	%	See note 4 above
Operating Temperature	-40		+70	°C	Some specification parameters may not met below -25 °C. Derate linearly from 100% load at +50 °C to 50% load at 70 °C.
EMC	EN55022 & 32 Level B Conducted & Radiated, EN61000-4, EN61000-3				
Safety Approvals	EN60950-1, UL60950-1, CSA22.2 No. 234 per cUL				

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage - Operating	85		264	VAC	Derate load from 100% at 90 VAC to 90% at 85 VAC
Input Frequency	47		63	Hz	
Power Factor					EN61000-3-2 class A compliant
Input Current		1.4/0.87		A rms	At 115/230 VAC
No Load Input Power			0.3	W	12-36 V versions
			0.5	W	48 V version
Inrush Current		60/120		A	115/230 VAC cold start at 25 °C
Earth Leakage Current					Class II construction no earth
Input Protection	Internal T3.15 A/250 VAC fuse				

### Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	12		48	VDC	See Models and Ratings table
Initial Set Accuracy			1	%	At 100% load
Minimum Load	0			A	No minimum load required
Start Up Delay			0.6	s	
Start Up Rise Time			30	ms	
Hold Up Time	8.4	15		ms	At full load and 115 VAC
Line Regulation			±0.5	%	
Load Regulation			±1	%	
Transient Response			4	%	Recovery within 1% in less than 500 µs for a 25% load change
Ripple & Noise			1/2	% pk-pk	For ECE80/ECE80-S, 20 MHz bandwidth
Overvoltage Protection	115		140	% Vnom	
Overload Protection	110		185	%	
Short Circuit Protection					Trip & restart (hiccup mode)
Temperature Coefficient			0.02	%/°C	

### General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	86	87	88	%	See Models & Ratings table
Isolation	3000			VAC	Input to Output
Switching Frequency		65		kHz	
Power Density			11.2	W/in <sup>3</sup>	
Mean Time Between Failure		>300		kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.57 (260)		lb (g)	ECE80
		0.62 (280)		lb (g)	ECE80-S

### Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+70	°C	Some specification parameters may not met below -25 °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			3048	m	
Vibration	2 g, 10 Hz to 500 Hz, 10 mins/cycle, 60 mins each cycle				

### EMC: Emissions

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Conducted	EN55022/55032	Class B		
Radiated	EN55022/55032	Class B		
Harmonic Current	EN61000-3-2			Class A
Voltage Flicker	EN61000-3-3			

### EMC: Immunity

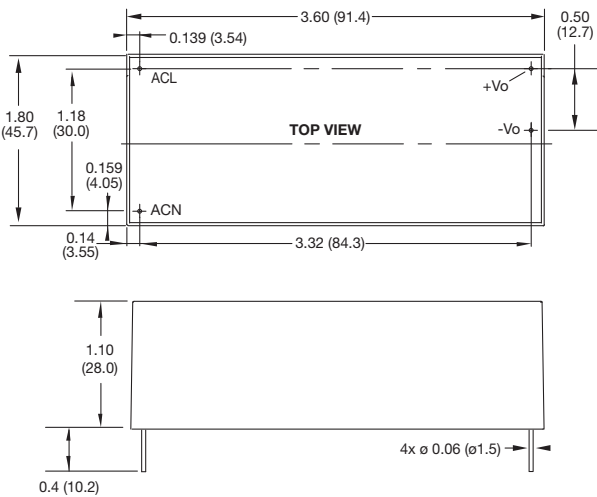
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	$\pm 6$ kV/ $\pm 8$ kV	A	Contact/Air Discharge
Radiated	EN61000-4-3	10 V/m 80% mod	A	
EFT	EN61000-4-4	3	A	
Surges	EN61000-4-5	2	A	
Conducted	EN61000-4-6	3	A	
Magnetic Fields	EN61000-4-8	3	A	
Dips and Interruptions	EN61000-4-11	DIP: >95% 10 ms DIP: 30% 500 ms INT: >95% 5000 ms	A A B	At 100 VAC and 230 VAC

### Safety Approvals

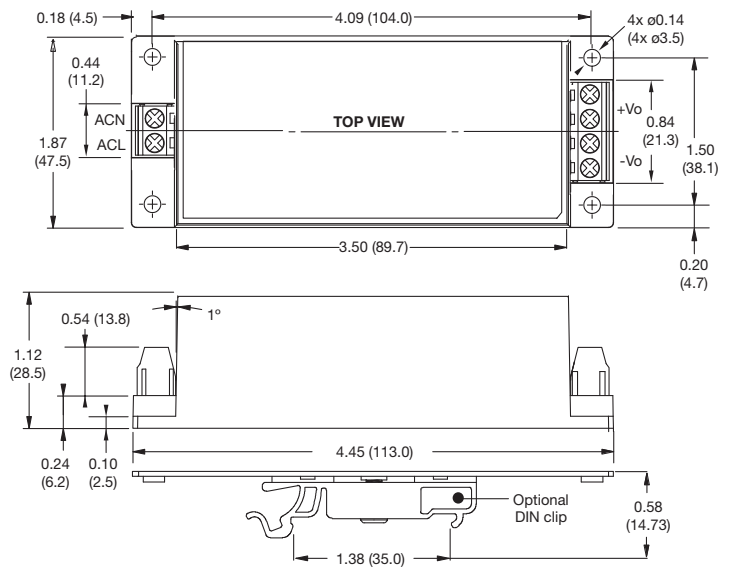
Safety Agency	Safety Standard	Notes & Conditions
UL	UL60950-1, CSA 22.2 No.234 per cUL	
TUV	EN60950-1	
CB	IEC60950-1	

### Mechanical Details

#### ECE80



#### ECE80 Screw Terminal (-S)



### Notes

- All dimensions in inches (mm).
- Weight: ECE80: 0.57 lbs (260 g)  
ECE80-S: 0.62 lbs (280 g)
- Tolerances: x.xx =  $\pm 0.02$  (x.x =  $\pm 0.5$ ), x.xxx =  $\pm 0.01$  (x.xx =  $\pm 0.25$ )