



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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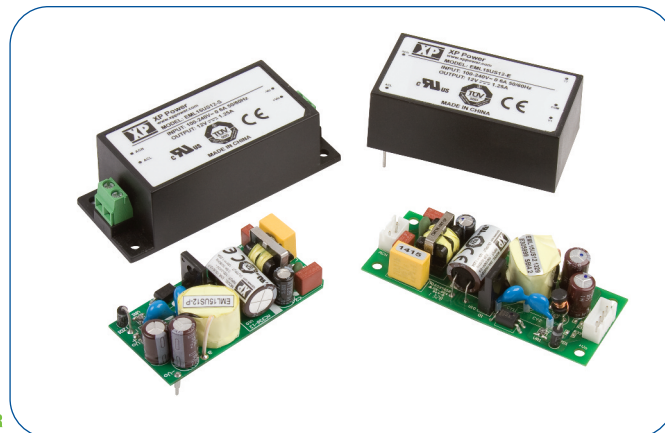
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15 Watts

- Compact Size
- Medical Approvals
- Single Outputs from 3.3 to 48 V
- PCB Mount, Open Frame & Chassis Mount
- Encapsulated PCB & Chassis Mount
- Class II
- Peak Load Capability



Dimensions:

EML15:

- (-P): 2.44 x 1.21 x 0.95" (62.0 x 30.7 x 24.1 mm)
- (-T): 3.10 x 1.25 x 0.91" (78.7 x 31.8 x 23.1 mm)
- (-E): 2.56 x 1.31 x 0.96" (65.0 x 33.3 x 24.4 mm)
- (-S): 3.30 x 1.36 x 1.04" (84.0 x 34.5 x 26.4 mm)

The EML15 is a series of open frame and encapsulated AC-DC single output power supplies designed for medical applications. The series provides a number of flexible mechanical options including PCB mount, open frame, chassis mount with screw terminals and a DIN Rail option. With approvals to world-wide medical safety standards, compliance with class B for both conducted and radiated emissions and a 130%, 30s peak load capability, these class II isolation parts benefit system designers with easy integration into the latest healthcare products and applications.

Models & Ratings

Output Power	Output Voltage	Output Current		Efficiency	Model Number ^(2,3)
		Nominal	Peak ⁽¹⁾		
10 W	3.3 VDC	3.00 A	3.90 A	75%	EML15US03
15 W	5.0 VDC	3.00 A	3.90 A	78%	EML15US05
15 W	9.0 VDC	1.67 A	2.17 A	80%	EML15US09
15 W	12.0 VDC	1.25 A	1.62 A	80%	EML15US12
15 W	15.0 VDC	1.00 A	1.30 A	80%	EML15US15
15 W	24.0 VDC	0.63 A	0.82 A	82%	EML15US24
15 W	36.0 VDC	0.42 A	0.54 A	82%	EML15US36
15 W	48.0 VDC	0.32 A	0.41 A	82%	EML15US48

Notes

1. Peak load lasting <30 s 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. EML15US24-SD, DIN rail mounting kit is available as a separate item, order code ECL15 DIN CLIP.

Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	85		264	VAC	
	120		370	VDC	
No Load Input Power			0.3	W	
Efficiency	75	80	82	%	See Models & Ratings table
Operating Temperature	-20		+70	°C	Derate linearly from 100% at +50 °C to 50% at +70 °C
EMC	EN55022 Level B Conducted & Radiated, EN61000-4, EN61000-3, EN60601-1-2				
Safety Approvals	EN60601-1, ANSI/AAMI ES60601-1. IEC60601-1				

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	85		264	VAC	
	120		370	VDC	
Input Frequency	47		63	Hz	
Input Current - Full Load		0.32/0.16		A rms	At 115/230 VAC
No Load Input Power			0.3	W	
Inrush Current		20/40		A	At 115/230 VAC
Earth Leakage Current					Class II construction no earth
Input Protection	F2.0A/250 V internal fuse fitted in line and neutral				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3		48	VDC	See Models and Ratings table
Initial Set Accuracy			±1	%	
Output Voltage Adjustment			±5	%	Not encapsulated units
Minimum Load	0			A	No minimum load required
Start Up Delay			2	s	
Start Up Rise Time			14	ms	
Hold Up Time	12			ms	at full load and 115 VAC
Line Regulation			±0.5	%	
Load Regulation			±1	%	
Transient Response			4	%	Deviation, recovery within 1% in less than 500 µs for a 25% load change
Ripple & Noise			50	mV pk-pk	3.3-5 V versions, 20 MHz bandwidth
			120	mV pk-pk	12-15 V versions, 20 MHz bandwidth
			200	mV pk-pk	24-48 V versions, 20 MHz bandwidth
Overvoltage Protection	195		216	% Vnom	3.3 V versions, recycle input to reset
	115		130	% Vnom	All other versions, recycle input to reset
Overload Protection	120		150	%	
Short Circuit Protection					Trip & Restart (hiccup mode)
Temperature Coefficient			0.05	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	75	80	82	%	See Models & Ratings table
Isolation: Input to Output	4000			VAC	
Switching Frequency		70		kHz	
Power Density			4.8	W/in ³	PCB Mount version
Mean Time Between Failure		>400		kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.07 (35)		lb (g)	Open frame versions
		0.20 (90)		lb (g)	Encapsulated version
		0.24 (110)		lb (g)	Screw terminal version

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			3048	m	
Shock	IEC68-2-27, 30 g, 11 ms half sine, 3 times in each of 6 axes				
Vibration	IEC68-2-6, 2 g, 10 Hz to 500 kHz, 10 mins/cycle, 60 mins each cycle				

EMC: Emissions

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Conducted	EN55022/11:2006	Class B		
Radiated	EN55022/11:2006	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	3	A	
Radiated	EN61000-4-3	10 V/m	A	80% mod
EFT	EN61000-4-4	3	A	
Surges	EN61000-4-5	3	A	
Conducted	EN61000-4-6	10 Vrms	A	
Magnetic Fields	EN61000-4-8	10 A/m	A	
Dips and Interruptions	EN60601-1-2	70% U_T for 500 ms	A	
		40% U_T for 100 ms	A	
		<5% U_T for 10 ms	A	
		<5% U_T for 5000 ms	B	40% of U_T dip is performance criteria A if load is reduced to 45% based on 100 VAC

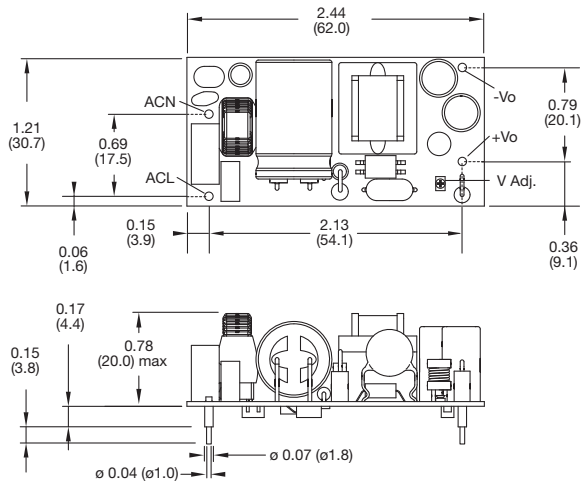
Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
CB Report	IEC60601-1 Ed 3 Including Risk Management	Medical
UL	ANSI/AAMI ES60601-1:2005 & CSA C22.2, No.60601-1:08	Medical
TUV	EN60601-1/A12:2006	Medical

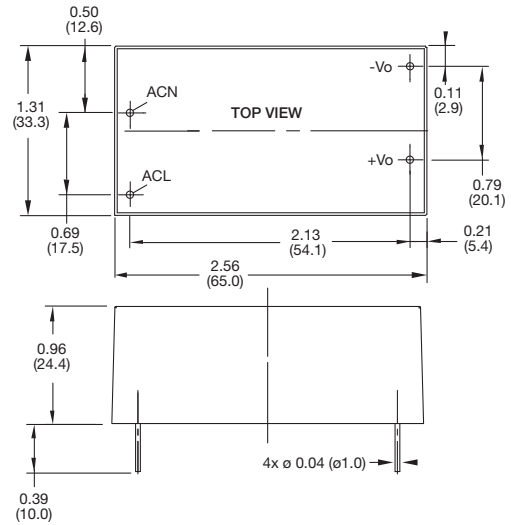
Means of Protection	Category
Primary to Secondary	2 x MOPP (Means of Patient Protection)
	IEC60601-1 Ed 3

Mechanical Details

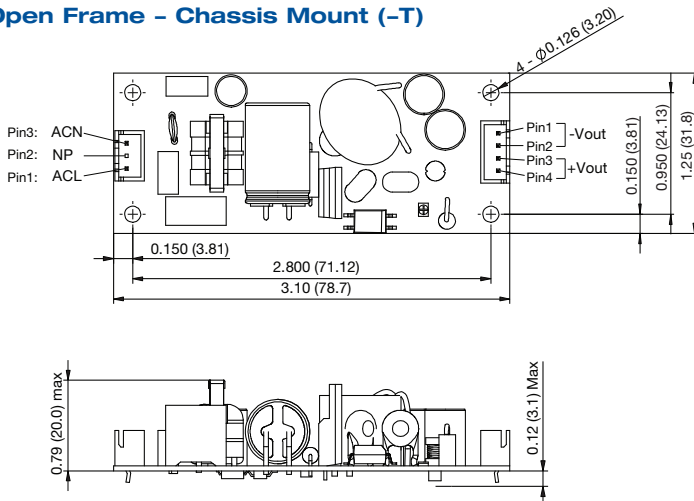
Open Frame - PCB Mount (-P)



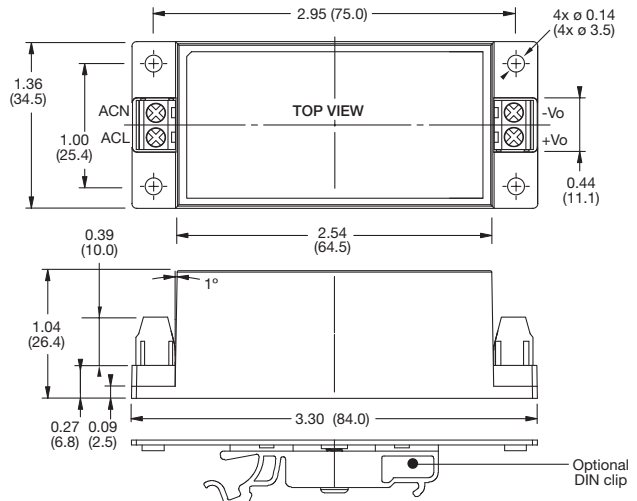
Encapsulated (-E)



Open Frame - Chassis Mount (-T)



Screw Terminal (-S)



Notes

- Dimensions in inches (mm).
- Weight: P Version: 0.07 lbs (35 g)
T Version: 0.07 lbs (35 g)
E Version: 0.20 lbs (90 g)
S Version: 0.24 lbs (110 g)
- Tolerances: x.xx = ± 0.02 (x.x = ± 0.5)
x.xxx = ± 0.01 (x.xx = ± 0.25)

Mating Connectors (-T version only)

Input Connector: JST XHP-3
Output Connector: JST XHP-4
Crimps: SXH-001T-P0.6