



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!



## Contact us

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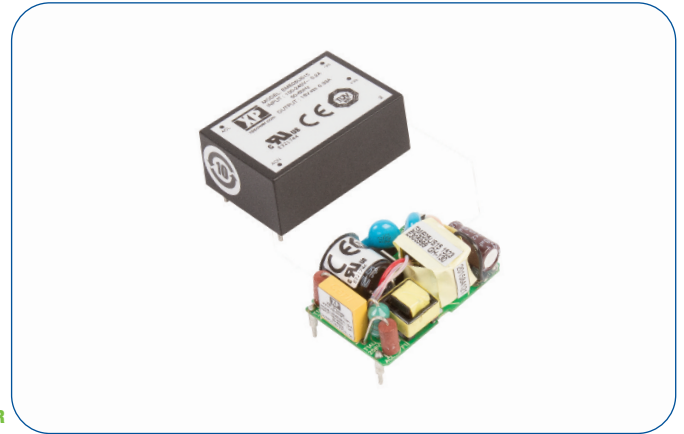
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### 5 Watts

- Compact Size
- Medical Approvals
- 2 MOPP
- Single Outputs from 3.3 to 48 V
- PCB Mount
- Encapsulated & Open Frame
- Class II
- Peak Load Capability
- 3 Year Warranty



#### Dimensions:

##### EME05:

1.50 x 1.00 x 0.60" (36.1 x 25.4 x 15.2 mm)

##### EME05-P:

1.40 x 0.94 x 0.69" (35.6 x 23.7 x 17.6 mm)

The EME05 is a series of open frame and encapsulated AC-DC single output power supplies designed for medical applications. The series provides two mechanical options including open frame and encapsulated PCB mount. 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		Model Number <sup>(2)</sup>
		Nominal	Peak <sup>(1)</sup>	
5 W	3.3 VDC	1510 mA	1960 mA	EME05US03
5 W	5.0 VDC	1000 mA	1300 mA	EME05US05
5 W	9.0 VDC	555 mA	722 mA	EME05US09
5 W	12.0 VDC	416 mA	541 mA	EME05US12
5 W	15.0 VDC	333 mA	433 mA	EME05US15
5 W	24.0 VDC	208 mA	270 mA	EME05US24
5 W	36.0 VDC	138 mA	180 mA	EME05US36
5 W	48.0 VDC	104 mA	135 mA	EME05US48

### Notes

1. Peak load lasting <30 s with a maximum duty cycle of 10%, average output power not to exceed nominal.
2. For Open Frame version add suffix -P to model number, e.g. EME05US12-P.

### Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	85		264	VAC	Derate from 100% at 90 VAC to 90% at 85 VAC
No Load Input Power			0.3	W	
Efficiency	72		86	%	
Operating Temperature	-25		+70	°C	Derate linearly from 100% at +50 °C to 50% at +70 °C
EMC	EN55011 Level B Conducted & Radiated, EN61000-3-2, EN61000-3-3, 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	
Input Frequency	47		63	Hz	
Input Current - Full Load		0.10/0.06		A rms	At 115/230 VAC
No Load Input Power			0.3	W	
Inrush Current			40	A	At 230 VAC
Earth Leakage Current					Class II construction no earth
Input Protection	Internal T1.0 A/250 VAC fuse fitted in line and neutral				

### Output

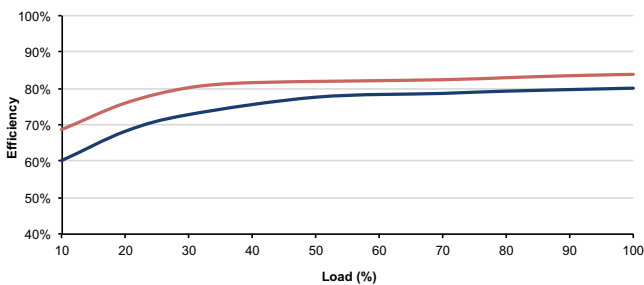
Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		48	VDC	
Initial Set Accuracy			±1	%	
Minimum Load	0			A	No minimum load required
Start Up Delay			2	s	
Start Up Rise Time			14	ms	
Hold Up Time	12			ms	at full load and 115 VAC
Line Regulation			±0.5	%	
Load Regulation			±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
			90	mV pk-pk	9 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	115		140	% Vnom	Recycle input to reset
Overload Protection	130		200	%	
Short Circuit Protection					Trip & Restart (hiccup mode)
Temperature Coefficient			0.05	%/°C	

### General

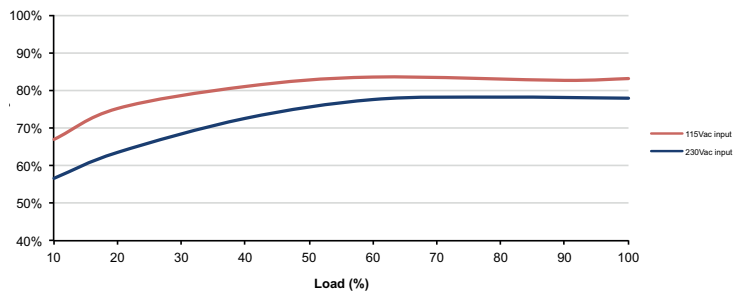
Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		80		%	
Isolation: Input to Output	4000			VAC	2 x MOPP
Switching Frequency		130		kHz	
Power Density			5.5	W/in <sup>3</sup>	
Mean Time Between Failure		>400		kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.03 (14)		lb (g)	Open frame versions (-P)
		0.053 (24)		lb (g)	Encapsulated version

### Efficiency Graphs

EME05US12



EME05US24





### 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	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	EN55011	Class B		
Radiated	EN55011	Class B		
Harmonic Current	EN61000-3-2			Class A
Voltage Flicker	EN61000-3-3			

### EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Medical Device EMC	IEC60601-1-2	Ed 4.0: 2014	As below	
ESD	EN61000-4-2	±8kV contact, ±15kV air discharge	A	
Radiated	EN61000-4-3	10 V/m	A	80% mod, 80 MHz - 2.7 GHz plus discrete communication proximity field frequencies
EFT	EN61000-4-4	3	A	
Surge	EN61000-4-5	2	A	
Conducted	EN61000-4-6	10 Vrms	A	
Magnetic Fields	EN61000-4-8	30 A/m	A	
Dips and Interruptions	EN60601-1-2 (100 VAC)	70% U <sub>r</sub> (70 VAC) for 500 ms	A	Load de-rated to 50%
		40% U <sub>r</sub> (40 VAC) for 100 ms	A	
		<5% U <sub>r</sub> (0 VAC) for 10 ms	A	
		<5% U <sub>r</sub> (0 VAC) for 5000 ms	B	
	EN60601-1-2 (240 VAC)	70% U <sub>r</sub> (168 VAC) for 500 ms	A	
		40% U <sub>r</sub> (96 VAC) for 100 ms	A	
		<5% U <sub>r</sub> (0 VAC) for 10 ms	A	
		<5% U <sub>r</sub> (0 VAC) for 5000 ms	B	

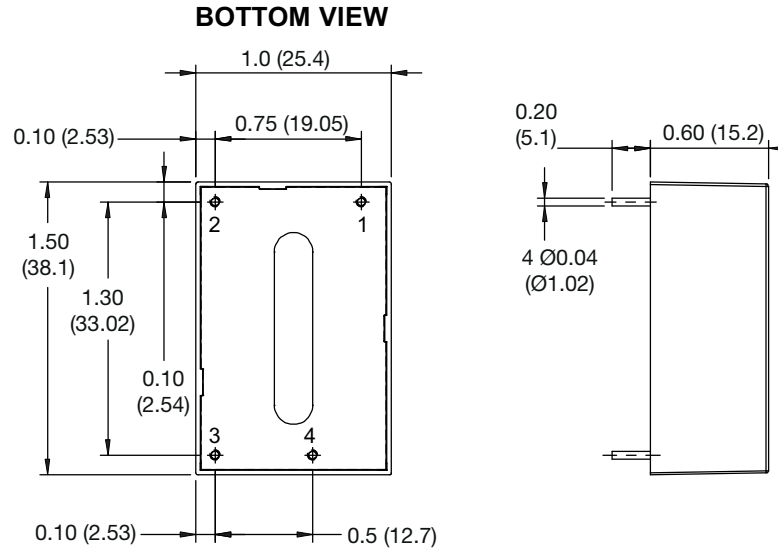
### Safety Approvals

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

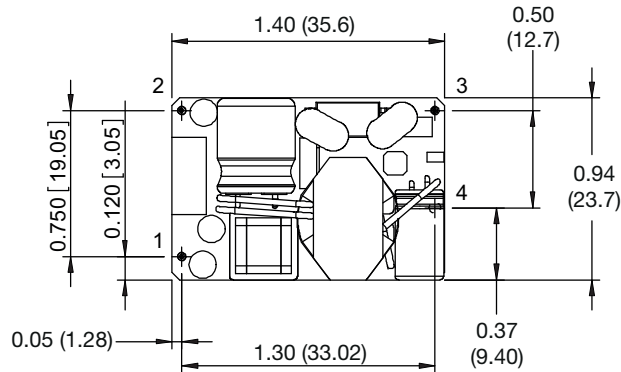
Means of Protection	Category
Primary to Secondary	2 x MOPP (Means of Patient Protection) IEC60601-1 Ed 3.1

### Mechanical Details

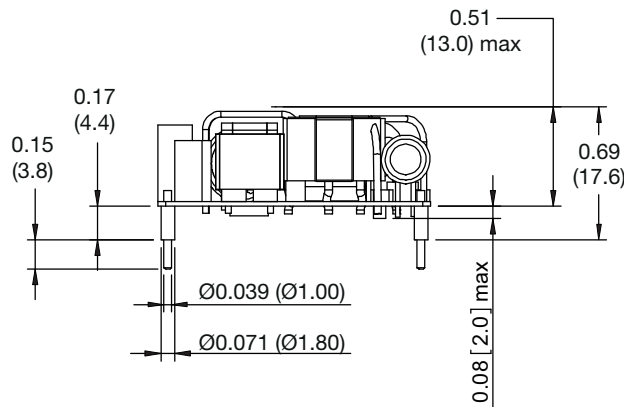
#### Encapsulated



#### Open Frame (-P)



Pin Connections	
Pin	Single
1	ACN
2	ACL
3	-Vout
4	+Vout



#### Notes

- Dimensions in inches (mm).
- Weight: Open frame versions (-P): 0.03 lbs (14 g)  
Encapsulated: 0.053 lbs (24 g)

- Tolerances: x.xx =  $\pm$  0.02 (x.x =  $\pm$  0.5)  
x.xxx =  $\pm$  0.01 (x.xx =  $\pm$  0.25)