# imall

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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### **MSM20** Series 20 Watts **Medical Switch Mode Power Supply**

### -)E Elpac Power Systems ... Higher Efficiency, Higher Power Density, Uncompromised Reliability

### **5-YEAR LIMITED WARRANTY\***

Input	
Input Voltage	85 – 264VAC 100 – 240VAC Nominal
Input Frequency	50 – 60Hz
Input Current	<0.3A rms
Inrush Current	37A@230VAC Cold Start
Zero Load Power Consumption	<0.8W
Earth Leakage Current	<90µA @ 132VAC @ 60Hz
	<150µA @ 264VAC @ 60Hz

#### High Efficiency

- Wide Range AC Input
- Fully Regulated DC Output
- Lifetime Expectation >5 years
- Hold-up Time >16ms at full load
- Output Floating
- Safety Approval EN60601-1 Class I

Output	
Output Voltage	See Table
Total Regulation	+/-5%
Minimum Load	No minimum load required
Start-Up Delay	<210ms
Hold-Up Time	>16ms
Ripple & Noise	<1% pk-pk **
Over Voltage Protection	110 – 135%
Over Temperature Protection	Active - Recoverable
Over Current Protection	120 – 180%
Short Circuit Protection	Shutdown, auto restart (hiccup mode)

Notes

\*visit www.iccus.com for complete details \*\*Ripple and noise measured with 20MHz bandwidth; 10µF tantalum capacitor in parallel with a 0.1µF ceramic capacitor.









RoHS∜

#### **TECHNICAL SUPPORT**

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Model Number	Output Voltage	Output Current	Peak Current <sup>1</sup>	Total Regulation <sup>2</sup>	Typical Efficiency <sup>3</sup>
MSM2012	12.0V	1.67A	2.00A	±5%	77.8%
MSM2015	15.0V	1.34A	1.60A	±5%	79.0%
MSM2024	24.0V	0.84A	1.00A	±5%	79.9%

Notes

1) Maximum peak load (24W) lasting 500ms with a maximum 10% duty cycle.

Includes initial setting, line regulation, load regulation, and thermal drift.
Typical at 115VAC at full load.

General	
Efficiency	Avg Efficiency 78.9% @ 115VAC; 80.6% @ 230VAC
MTBF	min. 200,000 hours demonstrated
Size	2.17" (54.99mm) x 3.543" (89.98mm) x 0.71" (18.00mm)
Weight	0.30 lbs (0.14 kg)
Power Density	3.67W/in <sup>3</sup>

Environmental		
Operating Temperature	0 – 50°C (Full load to 50°C, derate linearly to 50% load at 70°C)	
Storage Temperature	-40°C to +85°	
Relative Humidity	5-95%, non-condensing	
Cooling	Natural Convection	
Vibration	All units production tested to 19.6m/s <sup>2</sup>	

EMC & Safety		
Emissions	FCC Part 15, Class B, EN55011 EN61000-3-2, -3	
Immunity	EN61000-4-2, -3, -4, -5, -6, -8, -11	
Certified by UL to the following:	сЯUus	
	UL 60601-1	
	CAN/CSA-22.2 No.601.1-M90	
	CB per IEC60601-1	
0	CE marked to LVD	

Input Configuration		
Ground Connection	8.0" min green/yellow UL1015 Wire	
Line Connection	8.0" min white UL1015 Wire	
Neutral Connection	8.0" min black UL1015 Wire	

Output Configuration	
+V Connection	8.0" min red UL1015 Wire
Common Connection	8.0" min black UL1015 Wire

#### **Mechanical Drawing**

