

AC/DC 75W Enclosed Switching Power Supply

LM75-20Bxx, LM75-20Bxx-C, LM75-20Bxx-Q Series



FEATURES

- Universal 85 - 264VAC or 120 - 370VDC input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C to +70°C
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Over-voltage class III (designed to meet EN61558)
- Operating altitude up to 5000m



RoHS



LM75-20Bxx series is one of enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, low no load power consumption, high efficiency and high reliability. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032,

Selection Guide

Certification	Part No.*	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
UL/EN/CCC/IEC/ BIS/BS	LM75-20B05	70	5V/14A	4.5-5.5	86	10000
	LM75-20B12	72	12V/6A	10.2-13.8	88	6000
	LM75-20B15	75	15V/5A	13.5-18	88	5000
	LM75-20B24	76.8	24V/3.2A	21.6-28.8	90	1500
	LM75-20B36	75.6	36V/2.1A	32.4-39.6	90	1000
	LM75-20B48	76.8	48V/1.6A	43.2-52.8	91.5	680

Note: *Use suffix "C" for terminal with protective cover and suffix "Q" for conformal coating.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	264	VAC
	DC input	120	--	370	VDC
Input Voltage Frequency		47	--	63	Hz
Input Current	115VAC	--	--	2	A
	230VAC	--	--	1	
Inrush Current	115VAC	--	40	--	
	230VAC	--	65	--	
Leakage Current	240VAC	<0.75mA			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Accuracy	Full load range	5V	--	±2	--	
		12V/15V/24V/36V/48V	--	±1	--	
Line Regulation	Rated load	--	±0.5	--	%	
Load Regulation	0% - 100% load	5V	--	±1		--
		12V/15V/24V/36V/48V	--	±0.5		--
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V	--	100		--
		12V/15V	--	120	--	

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		24V	--	150	--	
		36V	--	200	--	
		48V	--	200	--	
Temperature Coefficient	0°C to 50°C, 230VAC		--	±0.03	--	%/°C
Minimum Load			0	--	--	%
Stand-by Power Consumption			--	--	0.3	W
Hold-up Time	115VAC		8	--	--	ms
	230VAC		55	--	--	
Short Circuit Protection	Recovery time <5s after the short circuit disappear.		Hiccup, continuous, self-recovery			
Over-current Protection			110%-200% I _o , self-recovery			
Over-voltage Protection	5V		≤6.3VDC (Output voltage clamp)			
	12V		≤16.2VDC (Hiccup, self-recovery)			
	15V		≤21.75VDC (Hiccup, self-recovery)			
	24V		≤33.6VDC (Hiccup, self-recovery)			
	36V		≤50VDC (Output voltage clamp)			
	48V		≤60VDC (Output voltage clamp)			
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47μF electrolytic capacitor and 0.1μF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.						

General Specifications								
Item	Operating Conditions			Min.	Typ.	Max.	Unit	
Isolation Test	Input - ⊕	Electric strength test for 1min., leakage current <10mA			2000	--	--	VAC
	Input - output							
	output - ⊕							
Insulation Resistance	Input - ⊕	At 500VDC			100	--	--	MΩ
	Input - output							
	output - ⊕							
Operating Temperature				-30	--	+70	°C	
Storage Temperature				-40	--	+85		
Operating Humidity	Non-condensing			20	--	90	%RH	
Storage Humidity				--	--	95		
Switching Frequency				--	65	--	kHz	
Power Derating	Operating temperature derating	5V output	+40°C to +70°C	1.3	--	--	%/°C	
		Other output	+50°C to +70°C	2	--	--		
	Input voltage derating	85VAC-100VAC		1.33	--	--	%/VAC	
Safety Standard				IEC/UL62368-1, GB4943.1, IS13252 (Part1) safety approved & EN62368-1, EN60335-1, EN61558-1, BS EN 62368-1 (Report)				
Safety Class				CLASS I				
MTBF	MIL-HDBK-217F@25°C			>300,000 h				

Mechanical Specifications	
Case Material	Metal (AL1100, SGCC)
Dimensions	99.00 x 97.00 x 30.00 mm
Weight	220g (Typ.)
Cooling Method	Free air convection

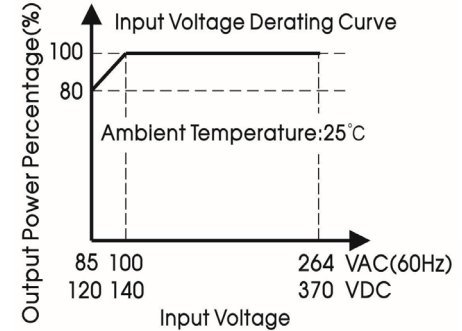
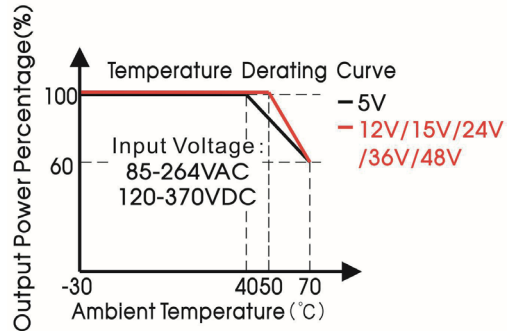
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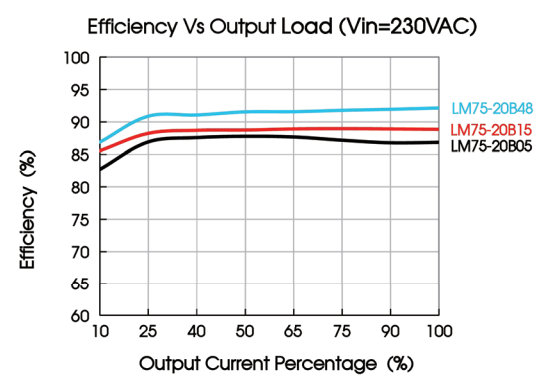
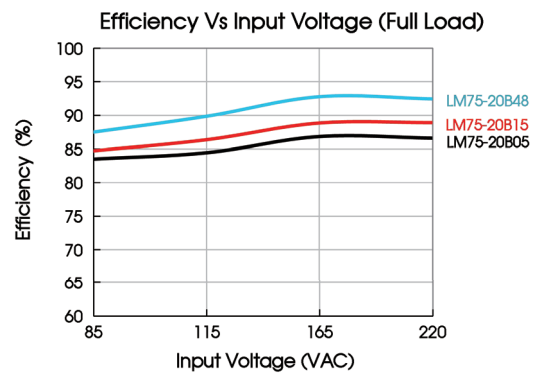


Electromagnetic Compatibility (EMC)				
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
Immunity	ESD	IEC/EN 61000-4-2	Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$	perf. Criteria A
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4	$\pm 2\text{KV}$	perf. Criteria A
	Surge	IEC/EN 61000-4-5	line to line $\pm 2\text{KV}$ /line to ground $\pm 4\text{KV}$	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

Product Characteristic Curve



- Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



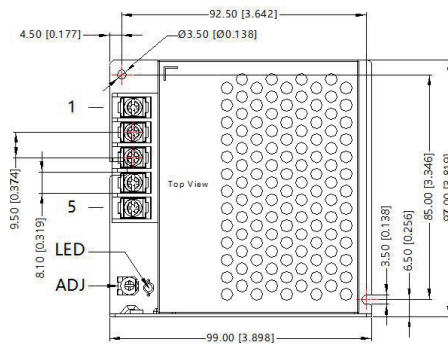
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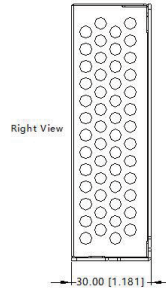


Dimensions and Recommended Layout

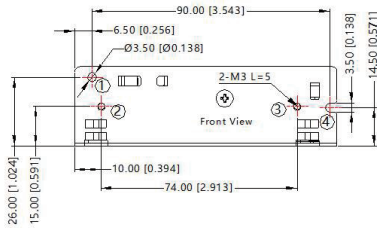
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THIRD ANGLE PROJECTION

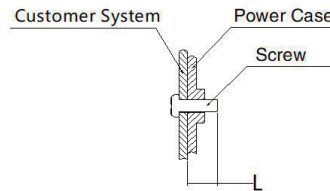
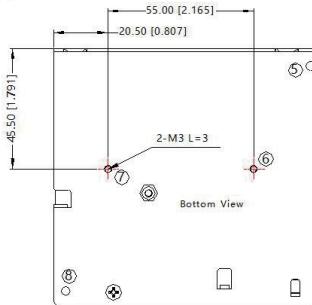


Pin-Out	
Pin	Function
1	AC(L)
2	AC(N)
3	⊕
4	-Vo
5	+Vo



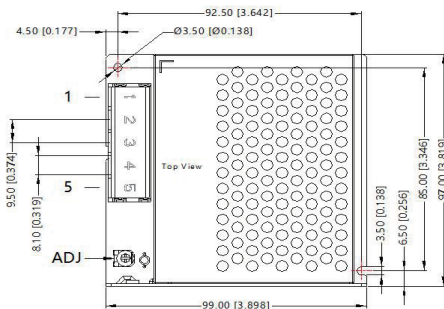
①-⑧ any position must be connected to the earth (⊕)

Position	Screw Spec.	L(max)	Torque(max)
② - ③	M3	5mm	0.4N·m
⑥ - ⑦	M3	3mm	0.4N·m

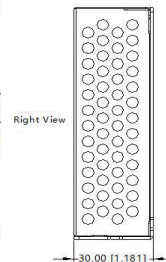


Note:
Unit: mm[inch]
Wire range: 22-12AWG
Connector tightening torque: M3.5, 0.8N·m
General tolerances: ± 1.00[± 0.039]

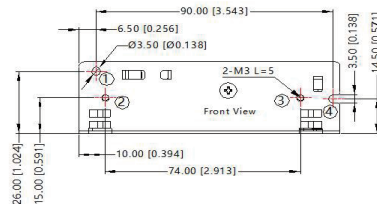
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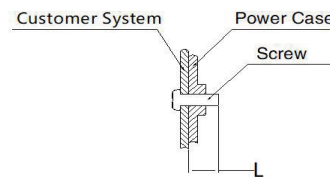
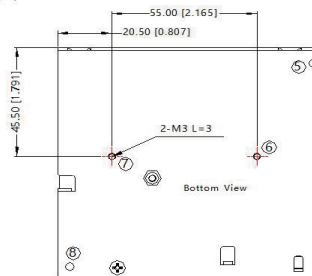


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NOTE:

1. For additional information on Product Packaging please refer to www.szhehuiyuan.com.
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity<75%RH with nominal input voltage and rated output load;
3. The ambient temperature derating of $5^{\circ}\text{C}/1000\text{m}$ is needed for operating altitude greater than 2000m;
4. All index testing methods in this datasheet are based on our company corporate standards;
5. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
6. We can provide product customization service, please contact our technicians directly for specific information;
7. Products are related to laws and regulations: see "Features" and "EMC";
8. The out case needs to be connected to the earth of system when the terminal equipment in operating;
9. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.
10. The power supply is considered a component which will be installed into a final equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

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