

7.6W, AC/DC converter



LD08-20BY4-US is a compact size power converter offered by Mornsun. It features universal input voltage, taking both DC and AC input voltage, low power consumption, high efficiency, high reliability, safer isolation. It offers good EMC performance, and widely used in medical, industrial, instruments, telecommunication and civil applications.

FEATURES

- Universal input range: 85-264VAC/100-370VDC
- AC and DC dual-use(input from the same terminal)
- High efficiency, high power density
- Output short circuit, over-current, over-voltage protection
- UL60950, EN60950, ANSI/AAMI ES60601-1 approval (2xMOPP)

Selection Guide

Certification	Part No.	Output Power	Nominal Output Voltage and Current (Vo/Io)	Efficiency (230VAC, %/Typ.)	Max. Capacitive Load*(μF)
UL/CSA/CE	LD08-20BY4-US	7.6W	3.8V/2000mA	74	3000

Note: *Test without external circuit.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	264	VAC
	DC input	100	--	370	VDC
Input frequency		47	--	63	Hz
Input current	115VAC	--	--	0.24	A
	230VAC	--	--	0.14	
Inrush current	115VAC	--	15	--	A
	230VAC	--	30	--	
Leakage Current	264VAC	--	--	80	uA
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		--	±2	--	%
Line Regulation	Full load	--	±0.5	--	
Load Regulation	0%-100% load	--	±1	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	50	100	mV
Temperature Coefficient		--	±0.02	--	%/°C
Stand-by Power Consumption		--	--	0.3	W
Short Circuit Protection		Continuous, self-recovery			
Over-current Protection		130% - 300%Io, self-recovery			
Over-voltage Protection		≤6VDC			
Min. Load		0	--	--	%
Hold-up Time	115VAC input	--	5	--	ms
	230VAC input	--	40	--	

Note: * Ripple and noise are measured by "parallel cable" method, please see AC-DC Converter Application Notes for specific operation.

General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output	Test time: 1min	4000	--	--	VAC
Operating Temperature			-25	--	+70	℃
Storage Temperature			-40	--	+85	
Storage Humidity			--	--	95	%RH
Welding Temperature		Wave-soldering	260 ±5℃; time: 5 - 10s			
		Manual-welding	360 ±10℃; time: 3 - 5s			
Switching Frequency			--	65	--	kHz
Power Derating		-25℃to 0℃	2.0	--	--	% /℃
		+50℃to +70℃	2.5	--	--	
Safety Standard			UL60950/EN60950/ ANSI/AAMI ES60601-1			
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Safety Class			CLASS II			
MTBF			MIL-HDBK-217F@25℃ ≥300,000 h			

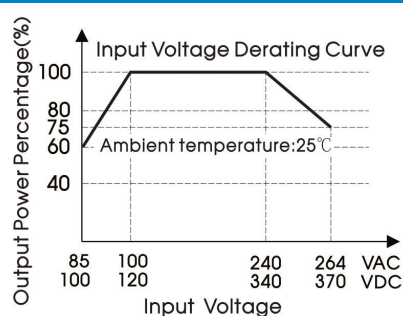
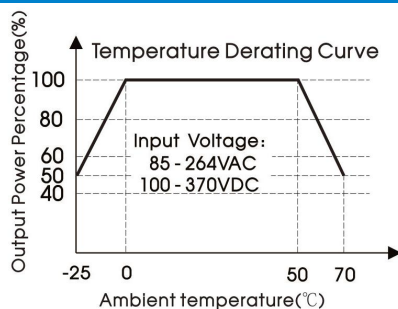
Physical Specifications

Casing Material	Black flame-retardant and heat-resistant plastic (UL94V-0)
Package Dimensions	45.70*25.40*15.20mm
Weight	29 g(Typ.)
Cooling method	Free air convection

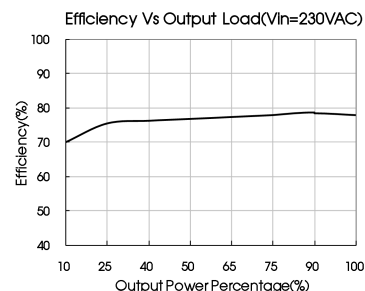
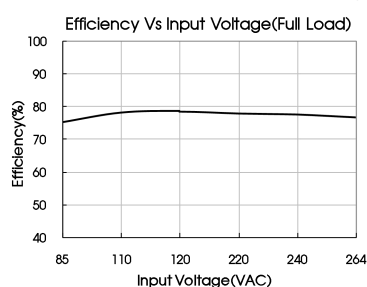
EMC Specifications

EMI	CE	CISPR11/EN55011	CLASS B	
	RE	CISPR11/EN55011	CLASS B	
EMS	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	Perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line ±1KV	perf. Criteria B
	CS	IEC/EN61000-4-6	10Vr.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 Input voltage should be derated based on temperature derating when it is 85-100VAC/240-264VAC/100-120VDC/340-370VDC;
② This product is suitable for use in natural air cooling environments, if in a closed environment, please contact our company's FAE.



Design Reference

1. Typical application circuit

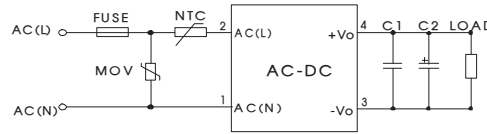


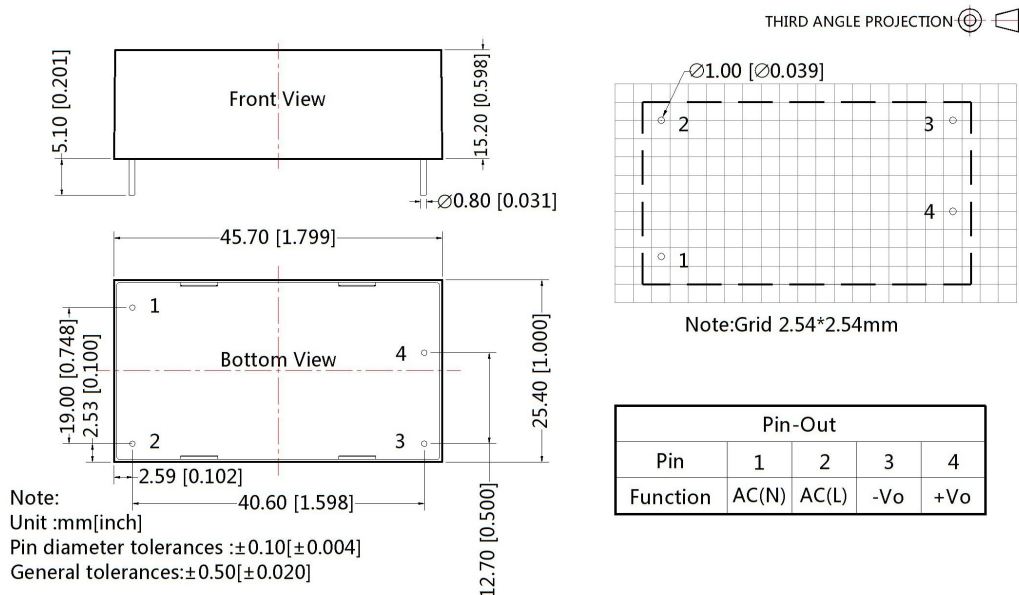
Fig. 1: Typical application circuit

Model	FUSE	MOV	NTC	C1(μF)	C2(μF)
LD08-20BY4-US	2A/250V,slow fusing	S14K300	5D-9	1	220

Note:
Output filtering capacitor C2 is electrolytic capacitor, it is recommended to apply electrolytic capacitor with high frequency and low resistance. For capacitance and current of capacitor please refer to manufacture's datasheet. Capacitor voltage reduced to at least 80%. C1 is ceramic capacitor, which is used to filter high-frequency noise.

2. For more information please find application notes on www.mornsun-power.com

Dimensions and Recommended Layout



Note:

- Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com.
Packing bag number: 58000155;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity<75% with nominal input voltage and rated output load;
- All index testing methods in this datasheet are based on our Company's corporate standards;
- We can provide product customization service, please contact our technicians directly for specific information;
- Products are related to laws and regulations: see "Features" and "EMC";
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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