

15W, AC-DC converter



RoHS



FEATURES

- Universal input range:85~264VAC, 100~370VDC,50/60Hz
- Regulated output, low ripple and noise
- Efficiency up to 81%
- Over-current, short circuit and over-voltage protection
- Plastic case, meets UL94V-0
- 3 years product warranty

LH15-10D0524-04—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, which meet IEC/EN61000-4, CISPR22/EN55022, UL60950 and EN60950 standards, and it's widely used in industrial, office and civil applications.

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current		Efficiency (230VAC, %/Typ.)	Max. Capacitive Load(μF)
		(Vo1/Io1)	(Vo2/Io2)		Vo1
LH15-10D0524-04	15W	5V/1000mA	24V/400mA	81	10000

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	--	--	0.37	A
	230VAC	--	--	0.22	
Inrush current	115VAC	--	10	--	
	230VAC	--	20	--	
Leakage current		0.3mA RMS typ./230VAC/50Hz			
Recommended External Input Fuse(Special package series include fuse)		2A/250V, slow fusing			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Main circuit	--	±2	--	%
Line Regulation	Full load	Main circuit Vo1	±0.5	--	
		Auxiliary circuit Vo2	±1.5	--	
Load Regulation	10%-100% load (Balance load)	Main circuit Vo1	±3	--	
		Auxiliary circuit Vo2	±5	--	
Ripple & Noise*	Main circuit 20MHz bandwidth (peak-peak value)	--	50	100	mV
Temperature Coefficient	Main circuit Vo1	--	±0.02	--	% / °C
	Auxiliary circuit Vo2	--	±0.15	--	
Short Circuit Protection		Continuous, self-recovery			
Over-current Protection		≥110%Io self-recovery			
Over-voltage Protection	Main circuit	5VDC Output ≤7.5VDC			
	Auxiliary circuit	24VDC Output ≤30VDC			
Min. Load	Balance load	10	--	--	%
Hold-up Time	115VAC input	--	15	--	ms
	230VAC input	--	80	--	

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	3000	--	--	VAC
Operating Temperature			-40	--	+70	°C
Storage Temperature			-40	--	+105	
Storage Humidity			--	--	95	%RH
Welding Temperature	Wave-soldering		260±5°C; time:5~10s			
	Manual-welding		360±10°C; time:3~5s			
Switching Frequency				60		kHz
Power Derating	-40°C~-10°C		2.0	--	--	% / °C
	+55°C~+70°C		3.75	--	--	
Safety Standard			IEC60950/EN60950/UL60950			
Safety Class			CLASS I			
MTBF			MIL-HDBK-217F@25°C > 300,000 h			

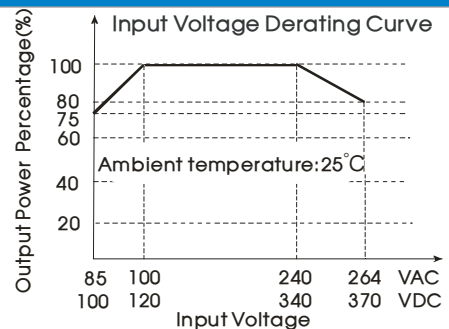
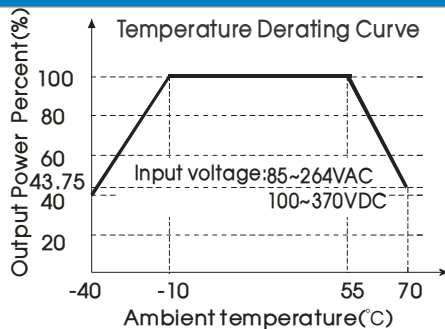
Physical Specifications

Casing Material	Black flame-retardant and heat-resistant plastic (UL94-V0)
Dimension	62.00*45.00*22.50 mm
Weight	85g(Typ.)
Cooling method	Free air convection

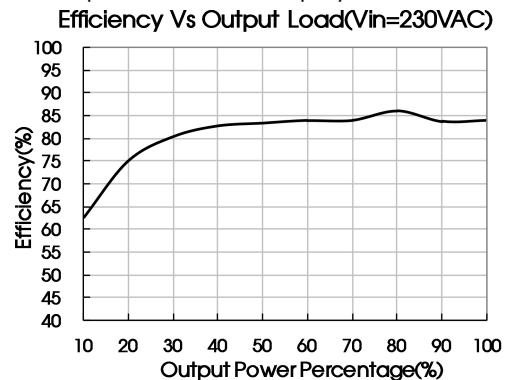
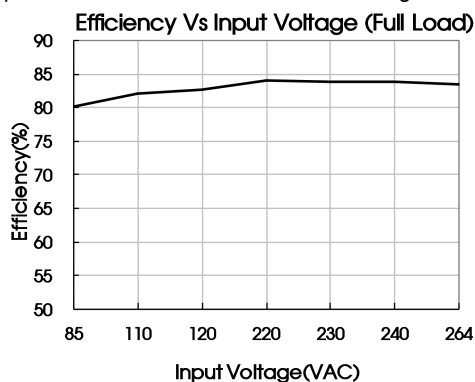
EMC Specifications

EMI	CE	CISPR22/EN55022, CLASS B			
	RE	CISPR22/EN55022, CLASS B			
EMS	ESD	IEC/EN61000-4-2	±6KV/±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	±1KV/±2KV		perf. Criteria B

Product Characteristic Curve



Note: ① When input 85~100VAC/240~264VAC/100~120VDC/340~370VDC, it need to be voltage derated on basis of temperature derating;
 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

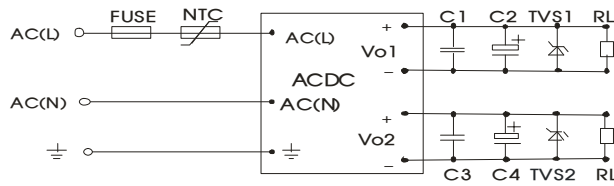


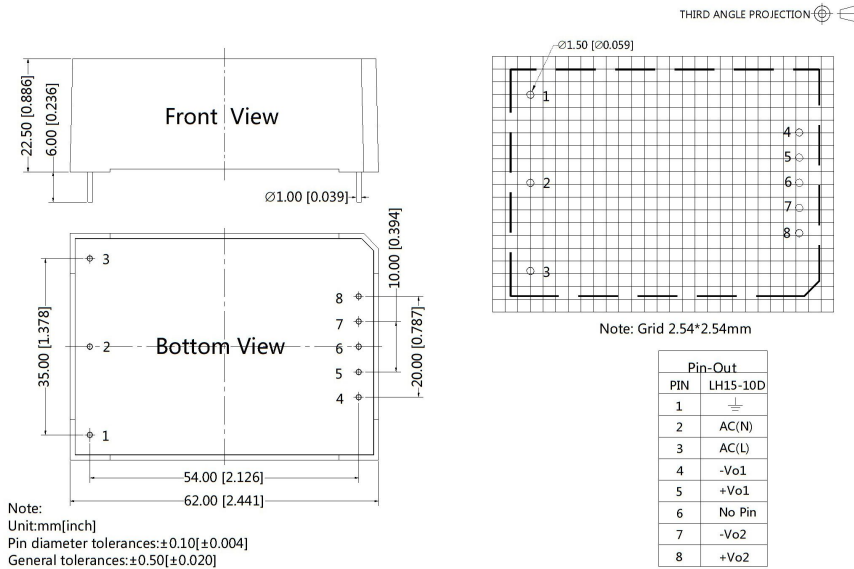
Fig. 1: Typical application circuit

Model	C2(μF)	C4(μF)	TVS1	TVS2
LH15-10D0524-04	470	47	SMBJ7.0A	SMBJ30A

Note:
Note: Output filtering capacitors C2, C4 are electrolytic capacitors, it is recommended to use high frequency and low impedance electrolytic capacitor. For capacitance and current of capacitor please refer to manufacture's datasheet. Capacitor withstand voltage derating should be 80% or above. C1,C3 are ceramic capacitors, which is used to filter high-frequency noise, advice use 1μF. TVS is a recommended component to protect post-circuits if converter fails. External input NTC model is recommended to use 5D-9.

2. For more information about Mornsun EMC Filter products, please visit www.mornsun-power.com to download the Selection Guide of EMC Filter

Dimensions and Recommended Layout



- Note:
1. Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com. Packing bag number of Horizontal package : 58220006;
 2. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
 3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of T_a=25 °C, humidity<75% with nominal input voltage and rated output load;
 4. All index testing methods in this datasheet are based on our Company's corporate standards;
 5. The performance parameters of the product models listed in this manual are as above, but some parameters of non-standard model products may exceed the requirements mentioned above. Please contact our technicians directly for specific information;
 6. We can provide product customization service;
 7. Specifications are subject to change without prior notice.

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