

40W, AC/DC converter



## FEATURES

- Wide input voltage range: 85 - 264VAC/100 - 370VDC
- high isolation voltage up to 3K VAC
- Industrial grade operating temperature: -40°C to +70°C
- EMI performance meets CISPR32 / EN55032 CLASS B
- Stand-by Power Consumption:0.5W
- High efficiency up to 82% with full load
- Output short circuit, over-current, over-voltage protection

LH40-10D0524-12 a 40W efficient environmental-protection AC-DC module power supply, which has advantages such as universal input voltage, accept either AC or DC input, high efficiency, high reliability, low power consumption and high safety isolation. The series products are widely used in industries such as industrial control, electricity, office.

Note: Please refer to Design Reference when module being used in a bad EMC environment.

## Selection Guide

Part No.*	Output Power	Nominal Output Voltage and Current		Efficiency (230VAC, %/Typ.)	Max. Capacitive Load(μF)
		(Vo1/Io1)	(Vo2/Io2)		
LH40-10D0524-12	38.8W	5VDC/2000mA	24VDC/1200mA	82	3300/2000

## 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	--	--	1.0	A
	230VAC	--	--	0.6	
Inrush current	115VAC	--	30	--	
	230VAC	--	50	--	
Hot Plug		Unavailable			

## Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Vo1	--	±2	--	
	Vo2	--	±8	--	
Line Regulation	Vo1	--	±0.5	--	
	Vo2	--	±1.5	--	
Load Regulation	Balance load	Vo1	--	±3	--
		Vo2	--	±5	--
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	80	150	mV
Temperature Coefficient	Vo1	--	±0.02	--	%/°C
Stand-by Power Consumption		--	--	0.5	W
Short Circuit Protection		Continuous, self-recovery			
Over-current Protection		≥110%Io self-recovery			
Over-voltage Protection	Vo1	--	--	7.5	V
	Vo2	--	--	35	
Min. Load		10	--	--	%
Hold-up Time	115VAC input	--	10	--	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
	Output-output		500	--	--	VDC
Operating Temperature			-40	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity			--	--	95	%RH
Welding Temperature		Wave-soldering	260 ± 5°C; time: 5 - 10s			
		Manual-welding	360 ± 10°C; time: 3 - 5s			
Switching Frequency			--	65	--	kHz
Power Derating		-40°C to -25°C	3.33	--	--	% / °C
		+50°C to +70°C	3.0	--	--	
Safety Class			CLASS II			
MTBF		MIL-HDBK-217F@25°C	>300,000 h			

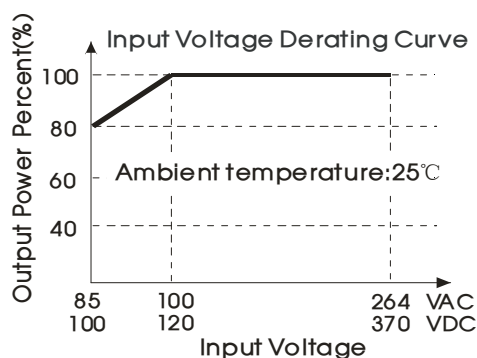
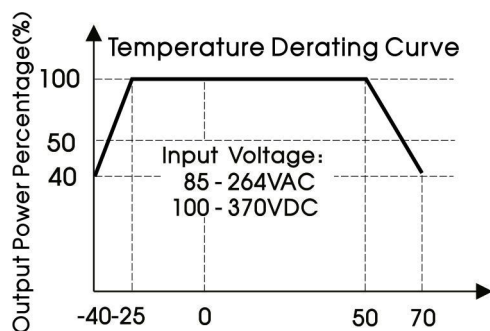
### Physical Specifications

Casing Material		Black flame-retardant and heat-resistant plastic (UL94V-0)
Dimensions	Horizontal package	89.00*63.50*25.00 mm
Weight	Horizontal package/A5 chassis package/A6 DIN-rail package	210g(Typ.)
Cooling Method		Free air convection

### EMC Specifications

EMI	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	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

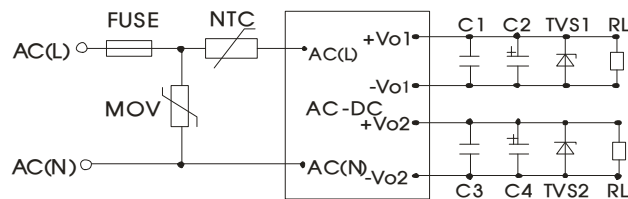


Note:

- ① Input voltage should be derated based on temperature derating when it is 85-100VAC/100-120VDC;
- 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

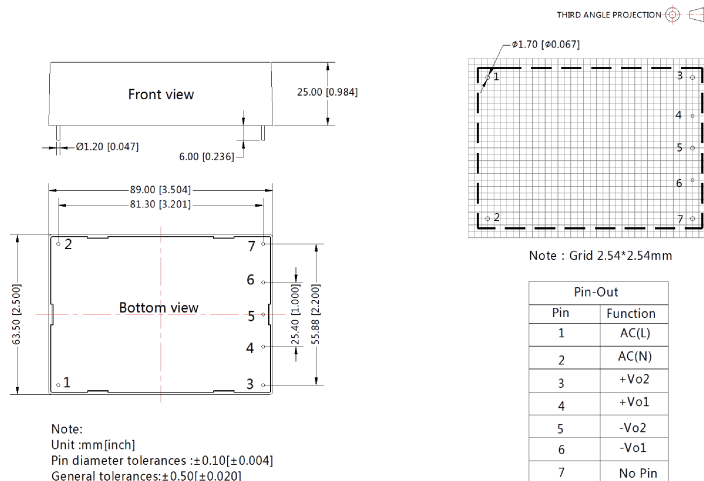


型号	C2(uF)	C4(uF)	C1、C3 (uF)	TVS1	TVS2
LH40-10D0524-12	680	120	1	SMBJ7.0A	SMBJ30A

Note: Output filtering capacitor C2, C4 are electrolytic capacitors, 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. Capacitance withstand voltage derating should be 80% or above. C1, C3 are ceramic capacitors, which is used to filter high-frequency noise. TVS is a recommended component to protect post-circuits if converter fails.

2. For more information, Please find the application note on [www.mornsun-power.com](http://www.mornsun-power.com).

### Dimensions and Recommended Layout



1104003301-C0

#### Note:

- Packing information please refer to Product Packing Information which can be downloaded from [www.mornsun-power.com](http://www.mornsun-power.com). Packing bag number of Horizontal package: 58220021;
- 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;
- 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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