AC/DC Converter

LO15-10Bxx Series

MORNSUN®

15W, AC-DC converter

CE Report EN62368-1 | CB IEC62368-1 | UKCA BS EN62368-1 | RoHS

FEATURES

- Universal 85-264VAC or 100-370VDC input voltage
- 2.5×1.8 inch high power density
- Operating ambient temperature range -25℃ to +70℃
- Output short circuit, over-current & over-voltage protection
- High efficiency, high reliability
- Regulated output, low ripple & noise
- EMI performance meets CISPR32/EN55032 CLASS B
- 2 years warranty
- Safety according to UL/EN60335

LO15-10Bxx series is one of Mornsun's compact size power converter. It features universal AC input and at the same time accepts DC input voltage, low power consumption, high efficiency, high reliability, reinforced isolation. It offers good EMC performance compliant to IEC/EN61000-4 and CISPR32/EN55032 and meets UL/EN/IEC62368, EN/UL60335 standards. The converters are widely used in industrial, office and civil applications.

Selection Guide

Certification	Part No.	Output Power	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 230VAC (%) Typ.	Capacitive Load (μF) Max.
EN/IEC	LO15-10B03	9W	3.3V/3000mA	78	20000
	LO15-10B05	14W	5V/2800mA	80	10000
	LO15-10B09	15W	9V/1600mA	82	5800
	LO15-10B12		12V/1250mA	83	5200
	LO15-10B15		15V/1000mA	83	4500
	LO15-10B24		24V/625mA	85	1000

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	--	20	--	
	230VAC	--	30	--	
Leakage Current	264VAC	0.25mA RMS max.			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	3.3V output	--	±3	--	%
	Other output	--	±2	--	
Line Regulation	Full load	--	±0.5	--	
Load Regulation	0%-100% load	--	±1	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	--	50	100	mV
Temperature Coefficient		--	--	±0.02	%/℃
Stand-by Power Consumption		--	--	0.5	W
Short Circuit Protection		Hiccup, continuous, self-recovery			
Over-voltage Protection	3.3/5V output	≤7.5V	Output voltage clamp or hiccup		
	9V output	≤15V			
	12/15V output	≤20V			
	24V output	≤30V			

Over-current Protection		≥130%Io, self-recovery			
Minimum Load		0	--	--	%
Start-up Time	85VAC-264VAC input, Io=100%	--	2000	--	ms
Hold-up Time	115VAC input, Io=100%	--	10	--	
	230VAC input, Io=100%	--	60	--	
Note: * The "Tip and barrel method" is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.					

General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	Input - output	Electric Strength Test for 1min., (leakage current＜5mA)	3000	--	--	VAC
Operating Temperature			-25	--	+70	℃
Storage Temperature			-25	--	+85	
Storage Humidity			--	--	90	%RH
Altitude			--	--	2000	m
Soldering Temperature		Wave-soldering	260 ± 5℃; time: 5 -10s			
		Manual-welding	360 ±10℃; time: 3 - 5s			
Power Derating		-25℃ to -10℃	1	--	--	%/℃
		+50℃ to +70℃	3	--	--	
		85VAC - 100VAC	1.67	--	--	%/VAC
Safety Standard			Design refer to UL/IEC62368-1 & EN62368-1, BS EN62368-1, UL/EN60335-1			
Safety Class			CLASS II			
MTBF		MIL-HDBK-217F@25℃	> 300,000 h			

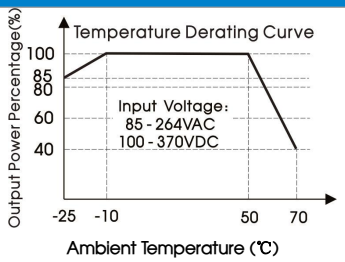
Mechanical Specifications

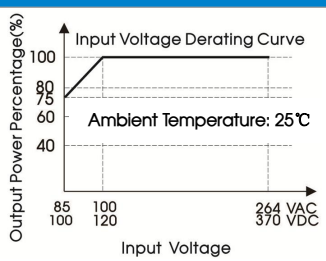
Dimension	63.50 x 45.70 x 19.00mm
Weight	36g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

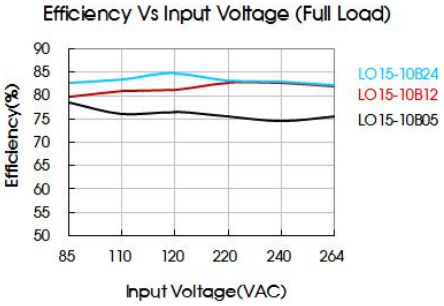
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV	Perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV	Perf. Criteria B
	Surge	IEC/EN61000-4-5	Line to line ±1KV	Perf. Criteria B
	CS	IEC/EN61000-4-6	10Vr.m.s	Perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods	Perf. Criteria B

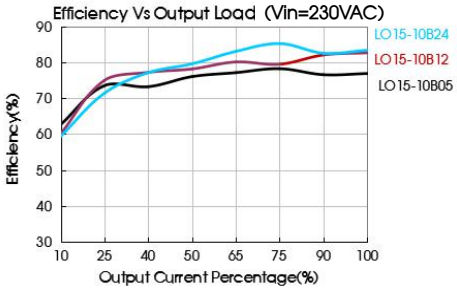
Product Characteristic Curve





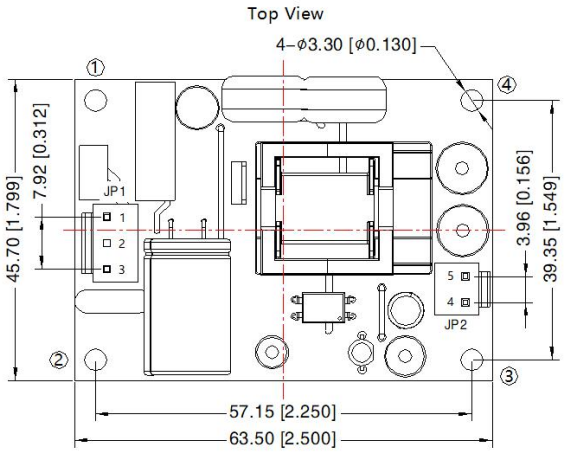
Note:
① With an AC input voltage between 85-100VAC and a DC input between 100-120VDC the output power must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.

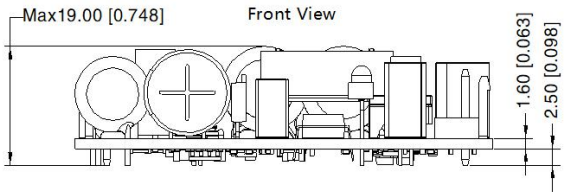




Dimensions and Recommended Layout

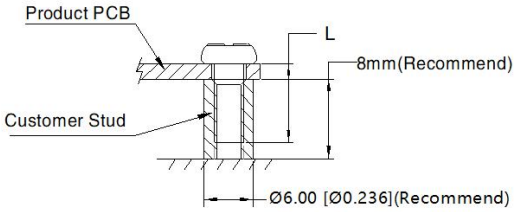
THIRD ANGLE PROJECTION





Pin-Out			
Connectors	Pin	Mark	Client Connectors
JP1	1	AC(L)	Housing: JST VHR Contact: JSTSVH-21T-P1.1 or equivalent
	2	NoPin	
	3	AC(N)	
JP2	4	-Vo	Housing: JST VHR Contact: JSTSVH-21T-P1.1 or equivalent
	5	+Vo	

Position	Screw Spec.	L(Recommend)	Torque(max)
①－④	M3	6mm	0.4N・m



Note:
Unit: mm[inch]
General tolerances: ±0.50[±0.020]
Mounting hole screwing torque: Max 0.4 N・m

Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 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 Ta=25 ℃, humidity<75% with nominal input voltage and rated output load;
4. All index testing methods in this datasheet are based on our company 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. Products are related to laws and regulations: see "Features" and "EMC";
8. 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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