



LHXX-10XX SERIES

LH--- are high efficiency green power modules with various packaging provided by Mornsun. The features of this series are: wide input voltage, DC and AC all in one, high efficiency, high reliability, low loss, safety isolation etc. They are widely used in industrial, office and civil equipments. EMC and safety standards meet international standards IEC61000 and IEC60950.

PRODUCT FEATURES

1. Universal Input :85 to 264VAC,50/60Hz
2. AC and DC all in one (input from the same terminal)
3. Low Ripple and Noise
4. Overload protection and short circuit protection
5. High Efficiency, High power density
6. Low power with no load, green power
7. Multiple models available
8. Meet industrial level specifications and requirements
9. 3 years warranty

MODEL SHEET

Model	Package	Power	Output (Vo1/Io1)	Output (Vo2/Io2)	Ripple and Noise	Efficiency (%) (TYP)				
LH05-10B05 LH05-10B12 LH05-10B15 LH05-10B24	48.5X36X20.5mm	5W	5V/1000mA		50mV	76				
LH05-10A05 LH05-10A12 LH05-10A15			+5V/500mA +12V/210mA +15V/160mA	-5V/500mA -12V/210mA -15V/160mA						
LH05-10C0505-01 LH05-10C0512-01 LH05-10C0515-01 LH05-10C0524-01			5V/900mA 5V/700mA 5V/700mA 5V/700mA	±5V/100mA ±12V/100mA ±15V/80mA ±24V/50mA						
LH05-10D0505-01 LH05-10D0512-01 LH05-10D0515-01 LH05-10D0524-01			5V/900mA 5V/750mA 5V/700mA 5V/600mA	5V/100mA 12V/100mA 15V/100mA 24V/100mA						
LH10-10B05 LH10-10B12 LH10-10B15 LH10-10B24			55X45X20.5mm	10W			5V/2000mA 12V/900mA 15V/700mA 24V/450mA		50mV	78
LH10-10A05 LH10-10A12 LH101-0A15							+5V/1000mA +12V/450mA +15V/350Ma	-5V/1000mA -12V/450mA -15V/350mA		
LH10-10C0505-01 LH10-10C0512-01 LH10-10C0515-01 LH10-10C0524-01							5V/1800mA 5V/1600mA 5V/1400mA 5V/1000mA	±5V/100mA ±12V/100mA ±15V/100mA ±24V/100mA		
LH10-10D0505-02 LH10-10D0512-02 LH10-10D0515-02 LH10-10D0524-02							5V/1800mA 5V/1500mA 5V/1400mA 5V/1000mA	5V/200mA 12V/200mA 15V/200mA 24V/200mA		

MODEL SHEET

Model	Package	Power	Output (Vo1/Io1)	Output (Vo2/Io2)	Ripple and Noise	Efficiency (%) (TYP)
LH15-10B05 LH15-10B12 LH15-10B15 LH15-10B24	62X45X22.5mm	15W	5V/2800mA 12V/1250mA 15V/1000mA 24V/625mA		50mV	80
LH15-10A05 LH15-10A12 LH15-10A15			+5V/1500mA +12V/650mA +15V/500mA	-5V/1500mA -12V/650mA -15V/500mA		
LH15-10C0505-02 LH15-10C0512-02 LH15-10C0515-02 LH15-10C0524-01			5V/2600mA 5V/2000mA 5V/1800mA 5V/2000mA	±5V/200mA ±12V/200mA ±15V/200mA ±24V/100mA		
LH15-10D0505-02 LH15-10D0512-02 LH15-10D0515-02 LH15-10D0524-02			5V/2800mA 5V/2500mA 5V/2400mA 5V/2000mA	5V/200mA 12V/200mA 15V/200mA 24V/200mA		
LH20-10B48S			62X45X22.5mm	20W		
LH20-10B05 LH20-10B12 LH20-10B15 LH20-10B24	70X48X23.5mm	20W	5V/3500mA 12V/1600mA 15V/1300mA 24V/850mA		50mV	82
LH20-10A05 LH20-10A12 LH20-10A15			+5V/2000mA +12V/830mA +15V/650mA	-5V/2000mA -12V/830mA -15V/650mA		
LH20-10C0505-04 LH20-10C0512-03 LH20-10C0515-02 LH20-10C0524-02			5V/3200mA 5V/2500mA 5V/2800mA 5V/2000mA	±5V/400mA ±12V/300mA ±15V/200mA ±24V/200mA		
LH20-10D0505-06 LH20-10D0512-05 LH20-10D0515-05 LH20-10D0524-03			5V/3400mA 5V/2800mA 5V/2500mA 5V/2500mA	5V/600mA 12V/500mA 15V/500mA 24V/300mA		

Remarks: 1, Ripple and Noise were measured by the method of parallel lines

2, Unless otherwise specified, all specifications above are measured at rated input voltage and rated output load,
TA=25°C, humidity < 75%

3, All specifications stated in this datasheet are subject to the above listed models only. For specifications
of non-standard models, please contact our technical support team.

INPUT SPECIFICATIONS

Input voltage range	100VAC to 240VAC (85 to 264VAC) 140VDC to 340VDC (120 to 370VDC)
Input frequency	47Hz to 63Hz
External input fuse (recommended)	2A slow blow

OUTPUT SPECIFICATIONS

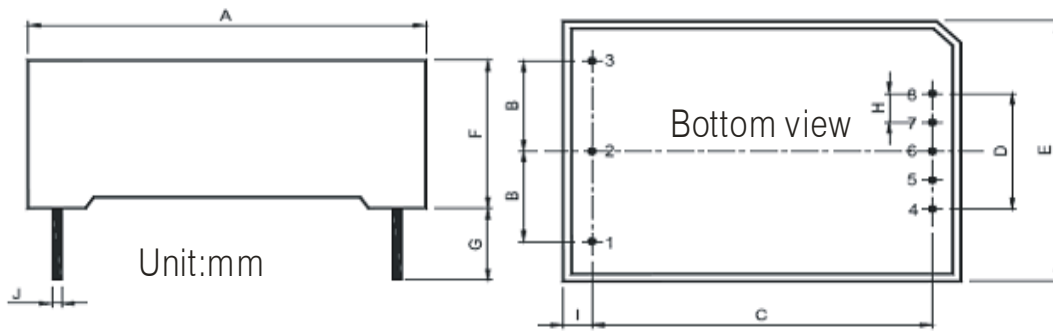
Voltage set accuracy	±2%																		
Input variation	±0.5%																		
Load variation (10-90%)	<table border="0"> <tr> <td>Single output models</td> <td>±1%</td> <td></td> </tr> <tr> <td>Dual output models</td> <td>±2%</td> <td></td> </tr> <tr> <td>Isolated triple output</td> <td>Vo1 ±3%</td> <td>(Main output)</td> </tr> <tr> <td></td> <td>±Vo2 ±5%</td> <td>(Supplement output)</td> </tr> <tr> <td>Isolated and separated twin output</td> <td>Vo1 ±3%</td> <td>(Main output)</td> </tr> <tr> <td></td> <td>Vo2 ±5%</td> <td>(Supplement output)</td> </tr> </table>	Single output models	±1%		Dual output models	±2%		Isolated triple output	Vo1 ±3%	(Main output)		±Vo2 ±5%	(Supplement output)	Isolated and separated twin output	Vo1 ±3%	(Main output)		Vo2 ±5%	(Supplement output)
Single output models	±1%																		
Dual output models	±2%																		
Isolated triple output	Vo1 ±3%	(Main output)																	
	±Vo2 ±5%	(Supplement output)																	
Isolated and separated twin output	Vo1 ±3%	(Main output)																	
	Vo2 ±5%	(Supplement output)																	
Ripple & noise (p-p) (20MHz Bandwidth)	≤100mV																		
Short circuit protection	Continuous, and auto resume																		
Over current protection	>115%Io																		

GENERAL SPECIFICATIONS

Temperature ranges	<table border="0"> <tr> <td>Operating :</td> <td>-20 °C to +70 °C</td> </tr> <tr> <td>Storage:</td> <td>-25 °C to +105 °C</td> </tr> <tr> <td>Case temperature</td> <td>+90 °C</td> </tr> </table>	Operating :	-20 °C to +70 °C	Storage:	-25 °C to +105 °C	Case temperature	+90 °C		
Operating :	-20 °C to +70 °C								
Storage:	-25 °C to +105 °C								
Case temperature	+90 °C								
Reducing rating temperature:	55 °C								
Hold-up time	80ms typ / at Vin:230VAC								
Humidity (non condensing)	85%(max)								
Temperature coefficient	0.02% / °C								
Switching frequency	150kHz max								
Efficiency	78% typ								
I/O-isolation voltage	3000VAC 1Min								
Leakage current	0.3mA RMS typ./230VAC/50Hz								
EMI/RFI conducted	EN55022, level B								
EMC compliance	<table border="0"> <tr> <td>Electrostatic discharge ESD</td> <td>IEC/EN 61000-4-2 level 3</td> </tr> <tr> <td>RF field susceptibility</td> <td>IEC/EN 61000-4-3</td> </tr> <tr> <td>Electrical fast transients/bursts on main sline</td> <td>IEC/EN 61000-4-4 level 3 2kV</td> </tr> <tr> <td>Surge</td> <td>IEC/EN 61000-4-5 level 3 1kV/2kV</td> </tr> </table>	Electrostatic discharge ESD	IEC/EN 61000-4-2 level 3	RF field susceptibility	IEC/EN 61000-4-3	Electrical fast transients/bursts on main sline	IEC/EN 61000-4-4 level 3 2kV	Surge	IEC/EN 61000-4-5 level 3 1kV/2kV
Electrostatic discharge ESD	IEC/EN 61000-4-2 level 3								
RF field susceptibility	IEC/EN 61000-4-3								
Electrical fast transients/bursts on main sline	IEC/EN 61000-4-4 level 3 2kV								
Surge	IEC/EN 61000-4-5 level 3 1kV/2kV								
Safety standards	IEC60950, IEN60950,								
Safety approvals	IEN60950, IEC60950								
Safety Class	CLASS 1								
Case material	UL94V-0								
Install	PCB								
MTBF	200,000h @25 °C								

OUTLINE AND DIMENSIONS

PACKAGE DIMENSIONS: (mm)



Unit:mm

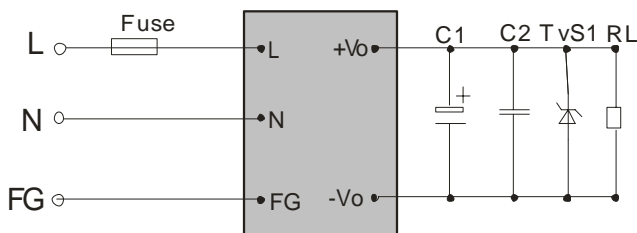
	LH05-XXXX	LH10-XXXX	LH15-XXXX	LH20-XXXX
A	48.5±0.5	55±0.5	62±0.5	70±0.5
B	12.5±0.5	17.5±0.3	17.5±0.3	20.0±0.3
C	40.5±0.5	47±0.5	54±0.5	62±0.5
D	16±0.3	20±0.3	20±0.5	23±0.3
E	36±0.5	45±0.5	45±0.5	48±0.5
F	20.5±0.5	20.5±0.5	22.5±0.5	23.5±0.5
G	4min	4min	4min	4min
H	4.0±0.3	5.0±0.3	5.0±0.3	5.75±0.3
I	4.0	4.0	4.0	4.0
J	1.0±0.1	1.0±0.1	1.0±0.1	1.0±0.1

PIN DEFINITION

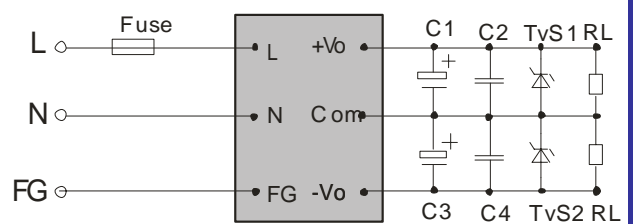
	1	2	3	4	5	6	7	8
LHXX-10BXX	FG	AC (N)	AC (L)	-Vo1	NP	NP	NP	+Vo1
LHXX-10AXX	FG	AC (N)	AC (L)	-Vo2	NP	COM	NP	+Vo1
LHXX-10CXXXX-XX	FG	AC (N)	AC (L)	-Vo1	+Vo1	-Vo2	COM	+Vo2
LHXX-10DXXXX-XX	FG	AC (N)	AC (L)	-Vo1	+Vo1	NP	-Vo2	+Vo2

TYPICAL APPLICATIONS

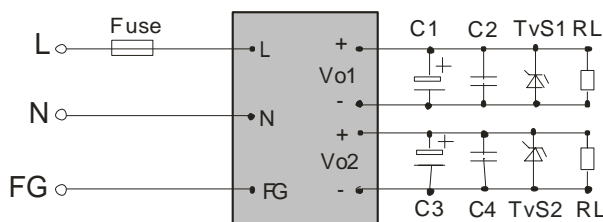
Single output:



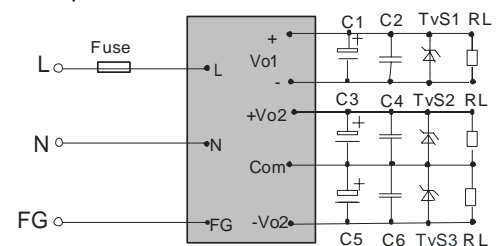
Dual output:



Isolate Twin Output:



Triple output:



EXTERNAL TYPICAL VALUE					REMARKS
Vout	C1/C3/C5	C2/C4/C6	FUSE	TVS	
5V	680uF/16V	0.1uF/50V Ceramic Capacitor	1A/250V	P6KE6.8A	Output filtering capacitor C5, C3 and C1 are electrolytic capacitor. It is recommended to use high frequency and low resistance electrolytic capacitor. For capacitance and current of the capacitor please refer to suppliers' specifications. Voltage derating of capacitor should be 80% or above. C2, C4 and C6 eliminate high frequency noise. TVS is a recommended component to protect post-circuits (when converter fails).
12V	220uF/25V			P6KE16A	
15V	220uF/25V			P6KE20A	
24V	120uF/35V			P6KE33A	

