

EMC Filter



EN 62368-1
IEC 60939-2

BS EN 62368-1
BS IEC 60939-2

FEATURES

- Ultra-wide input voltage range: 0-305VAC/0-430VDC
- Ultrathin volume: 63 x 60 x 14.5 mm
- Operating ambient temperature range: -40°C to +105°C
- Meet IEC/EN61000-4 series and CISPR32/EN55032 standards
- Compliance with surge: 2kV/4kV
- Insertion loss: DM&CM>65dB @ 800kHz

The model FC-L10HB developed for the first time belongs to EMC auxiliary device supporting AC brick power supply of our company. The maximum input voltage of the AC brick power supply should not be greater than the maximum working voltage of this product, and the maximum input current should be less than the maximum working current of this product.

Selection Guide

Model	Operating Voltage(VAC)		Operating Current(A)		Surge Performance	Certification
	Typ. (Range)	Max*	Typ.	Max		
FC-L10HB	230 (0-305)	310	10.0	11.0	Line-Line ±2kV Line-PE ±4kV	CE/UKCA

Note: 1.* The input voltage must not exceed this value, otherwise permanent and unrecoverable damage may be caused;

General Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		-40	--	+105	°C
Storage Temperature		-40	--	+125	
Storage Humidity		--	--	95	%RH
Isolation Voltage	IN(L)~PE , IN(N)~PE , electric strength test for 1 minute with a leakage current of 5mA max	3000	--	--	VAC
Insertion Loss (CM/DM)	150kHz~1MHz	35	40	-	dB
	1MHz~10MHz	35	40	-	dB
	10MHz~30MHz	18	20	-	dB
MTBF		MIL-HDBK-217F@25°C≥5000,000 h			
Impact and Vibration Test		10-55Hz, 5G, 30 Min. along X, Y and Z			
Altitude	80-110kPa	≦ 5000m			

Mechanical Specifications

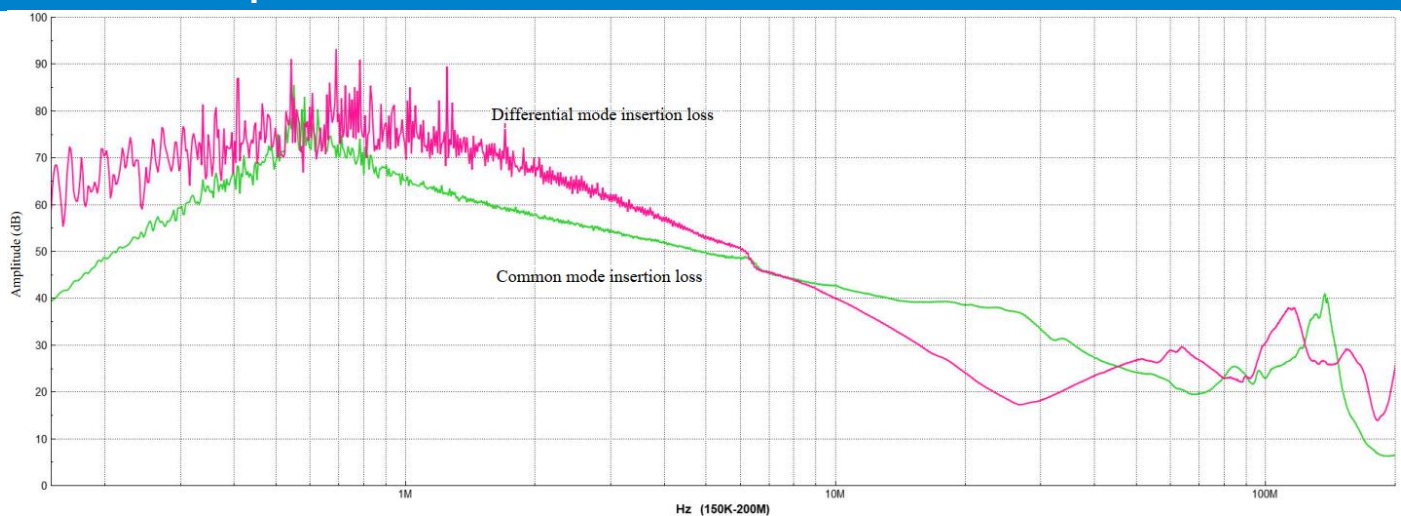
Case Material	Black plastic, flame-retardant and heat-resistant (UL94 V-0)
Dimension	63.00 x 60.00 x 14.50 mm
Weight	89g(Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

EMI	CE	CISPR32/EN55032	CLASS A	
	RE	CISPR32/EN55032	CLASS A	
EMS	ESD	IEC/EN61000-4-2	Contact ±6kV , Air ±8kV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4kV	perf. Criteria A
	Surge	IEC/EN61000-4-5	Line-Line ±2kV , Line-PE ±4kV (See Fig.1 for recommended circuit)	perf. Criteria A
	CS	IEC/EN61000-4-6	10V r.m.s	perf. Criteria A
	PFMF	IEC/EN61000-4-8	50/60Hz 30A/m	perf. Criteria A

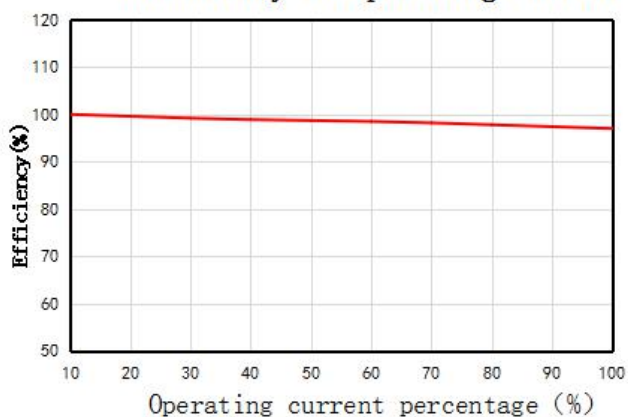
Note: Matching FC-L10HB to the front end of LBF750-13Bxx power supply series can make the power module meet above EMC characteristics.

Insertion Loss Specifications

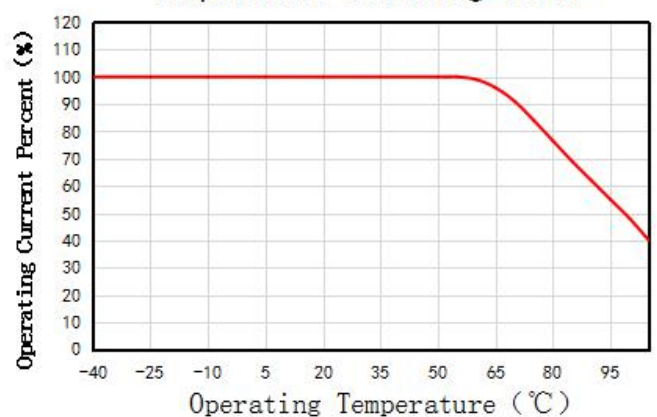


Product Typical Curve

Efficiency VS Operating Current



Temperature Derating Curve



Note: This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

Design Reference

Typical application

Note: It is recommended to match the Mornsun LBF750-13Bxx series of AC brick power supply.

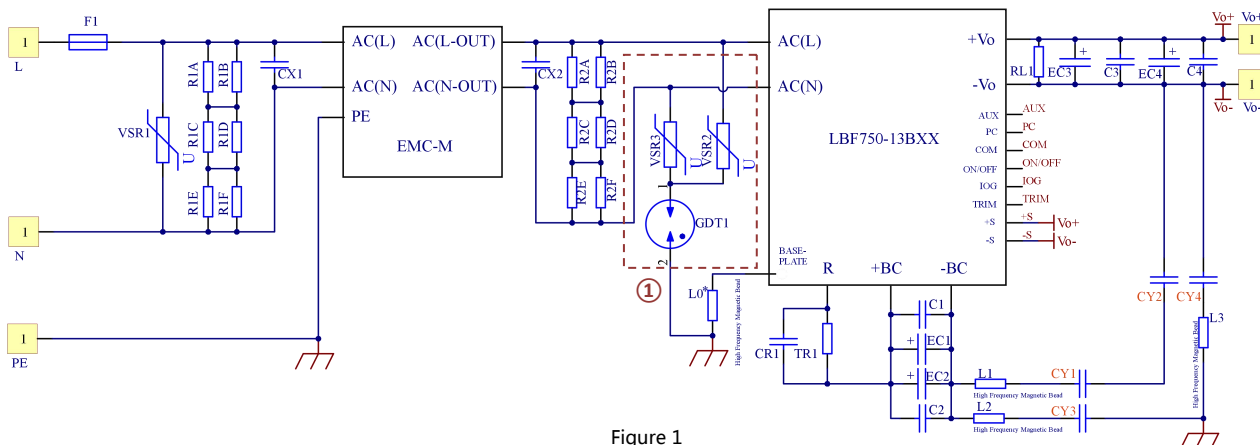
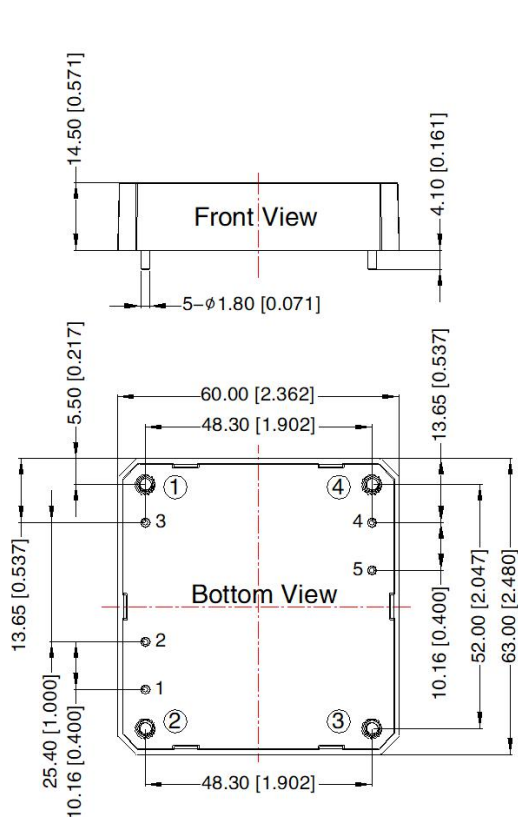


Figure 1

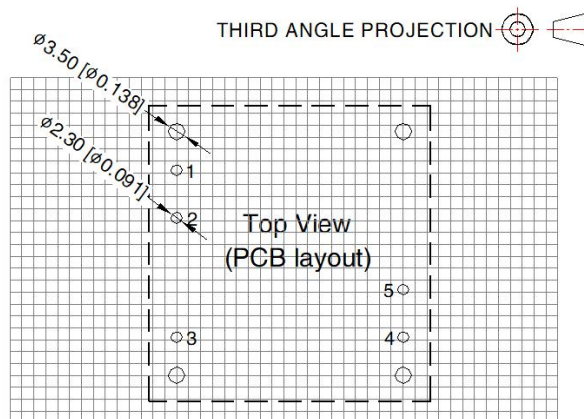
Components	Value
Fuse	300VAC/15A/Slow-blow
VSR1, VSR2, VSR3	S14K350
CX1, CX2	225K/310VAC
R1A, R1B, R1C, R1D, R1E, R1F, R2A, R1B, R2C, R2D, R2E, R2F	560KΩ/1/4W/1206
CR1, C1	683K/630V/1210
TR1	12Ω/10W/Power Resistance
C2	472K/2000V/1206
EC1, EC2	400uF/450V/Aluminum Electrolytic Capacitor
CY1, CY2	Y2/472M/250VAC
CY3	Y2/222M/250VAC
CY4	Y2/471M/250VAC
C3, C4	225K/100V/1206
RL1	12V:125Ω/3W
	24V/28V:0.5KΩ/3W
	48V/54V:2KΩ/3W
L0*, L1, L2, L3	Suppress High-Frequency Magnetic Beads
EMC-M	Mornsun FC-L10HB
GDT1	800V/5KA
EC3, EC4	12V: 3000uF/25V/Solid State Capacitance
	24V: 1500uF/35V/Electrolytic Capacitor
	28V: 1500uF/35V/Electrolytic Capacitor
	48V: 1000uF/63V/Electrolytic Capacitor
	54V: 820uF/100V/Electrolytic Capacitor

Note: 1.For meeting EMC characteristics better,high-frequency magnetic beads can be suppressed in series in the connection between aluminum substrate and PE.
 2.The circuit structure as shown in Figure 1-① is optional. If the case needs to be grounded to meet the surge characteristics, add the circuit as shown in Figure 1-②.

Dimensions and Recommended Layout



Note:
 Unit: mm[inch]
 Pin diameter tolerances: ± 0.10 [± 0.004]
 General tolerances: ± 0.50 [± 0.020]

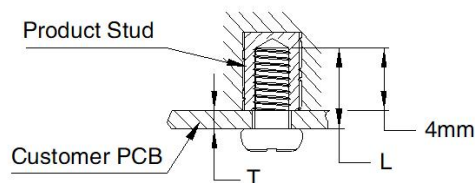


Note: Grid 2.54*2.54mm

Pin-Out					
Pin	1	2	3	4	5
Mark	IN(N)	IN(L)	\equiv	OUT(N)	OUT(L)

This series of products need to fix screw hole in a had vibration

Position	Screw Spec.	L(Recommend)	Torque(max)
① - ④	M3	$\leq (T+4)$ mm	0.4N · m



Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58210191;
- Unless otherwise specified, data in this datasheet should be tested under the conditions of $T_a=25^\circ\text{C}$, humidity < 75%RH with nominal input voltage and rated load;
- All index testing methods in this datasheet are based on our company 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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