EMC Filter

RoHS

FEATURES

- Ultra wide input voltage range：0-305VAC / 0-430VDC
- Operating ambient temperature range：-40℃ to +105℃
- EMC compliance ：IEC/EN61000-4、CISPR32/EN55032
- High surge suppression capability：±2kV/4kV
- Insertion loss DM & CM up to70dB @ 1MHz
- Compliance with safety standards IEC62368

The model FC-L15D series developed for the first time belongs to the EMC auxiliary device supporting our LBF1000 series AC/DC brick power supply . The maximum input voltage of the power supply should not be greater than the maximum operating voltage of the auxiliary power supply, and the maximum input current should not be greater than the maximum operating current of the filter.

Selection Guide

Model	Operating Voltage(VAC)		Operating Current(A)		Surge Performance	Matching The Power Model**
	Typ. (Range)	Max*	Typ.	Max		
FC-L15D	230 (0-305)	310	-	15.0	Line-Line ±2kV Line-PE ±4kV	LBF1000-13B28-NS

Note: 1. *Input voltage should not exceed this value, otherwise permanent irreparable damage may be caused.
2.** You can apply for the FC-L15D with LBF1000-13B28-NS peripheral test board simultaneously.

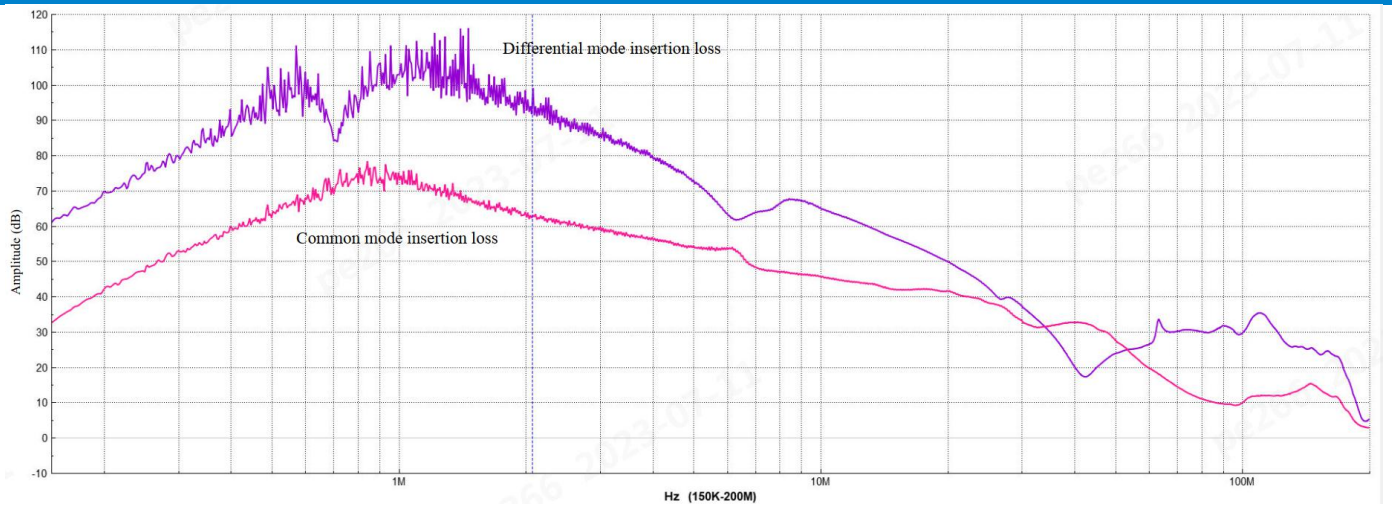
General Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		-40	--	+105	℃
Storage Temperature		-40	--	+105	
Storage Humidity	Non-condensing	--	--	95	%RH
Isolation Voltage	IN(L) ~ PE, IN(N) ~ PE, test time 1 minute, leakage current < 5mA	2500	--	--	VAC
Insertion Loss （CM/DM）	150KHz~1MHz	35	40	-	dB
	1MHz~10MHz	35	40	-	dB
	10MHz~30MHz	18	20	-	dB
Impact and Vibration test		10-500Hz, 2G, 10 Min. along X, Y and Z			
MTBF		MIL-HDBK-217F@25℃≥300,000 h			
Altitude		≦5000m			
Warranty		3 years			

Physical Characteristics

Case Material	Black plastic, flame-retardant and heat-resistant (UL94 V-0)
Dimension	87.00mm x 52.00mm x 29.50mm
Weight	220g(Typ.)
Cooling Method	Free air convection

FC-L15D Insertion Loss Specifications

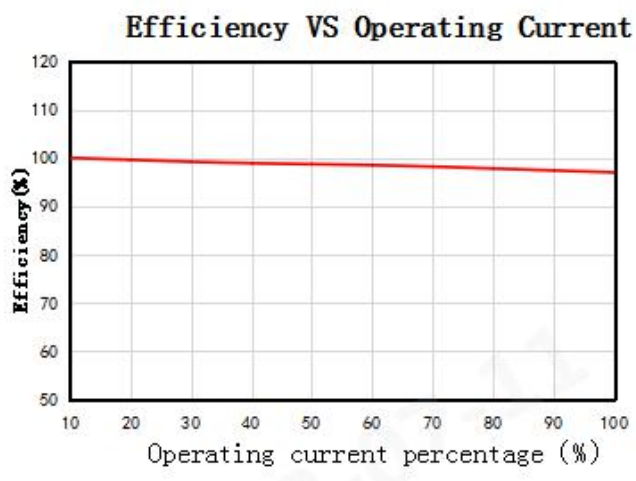


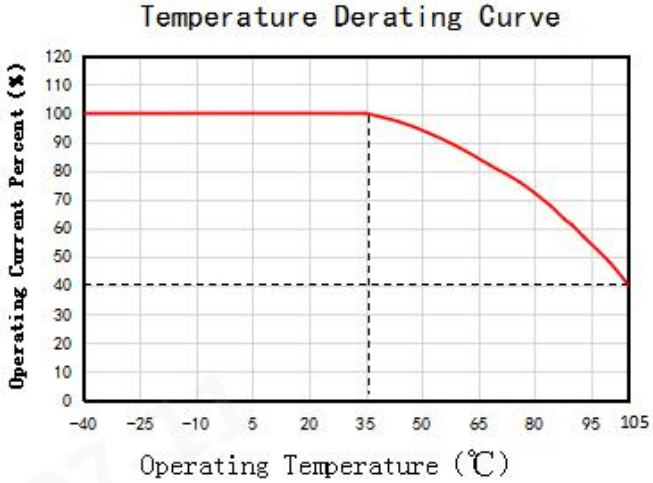
EMC Characteristics

EMI	CE	CISPR32/EN55032	CLASS A	(See figure 1)
		GJB 151B	CE102	(See figure 2)
	RE	CISPR32/EN55032	CLASS A	(See figure 1)
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
	CS	IEC61000-4-6	10V r.m.s	perf. Criteria A
	PFMF	IEC61000-4-8	50/60Hz 30A/m	perf. Criteria A
	Surge	IEC/EN61000-4-5	Line-Line ±2kV Line-PE ±4kV (See figure 1)	perf. Criteria A

Note: * Matching FC-L15D to the front end of the LBF1000-13B28-NS power supply can make the power module meet above EMC characteristics.

Product Characteristic 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：Matched the mornsun LBF1000-13B28-NS series AC power module supply;

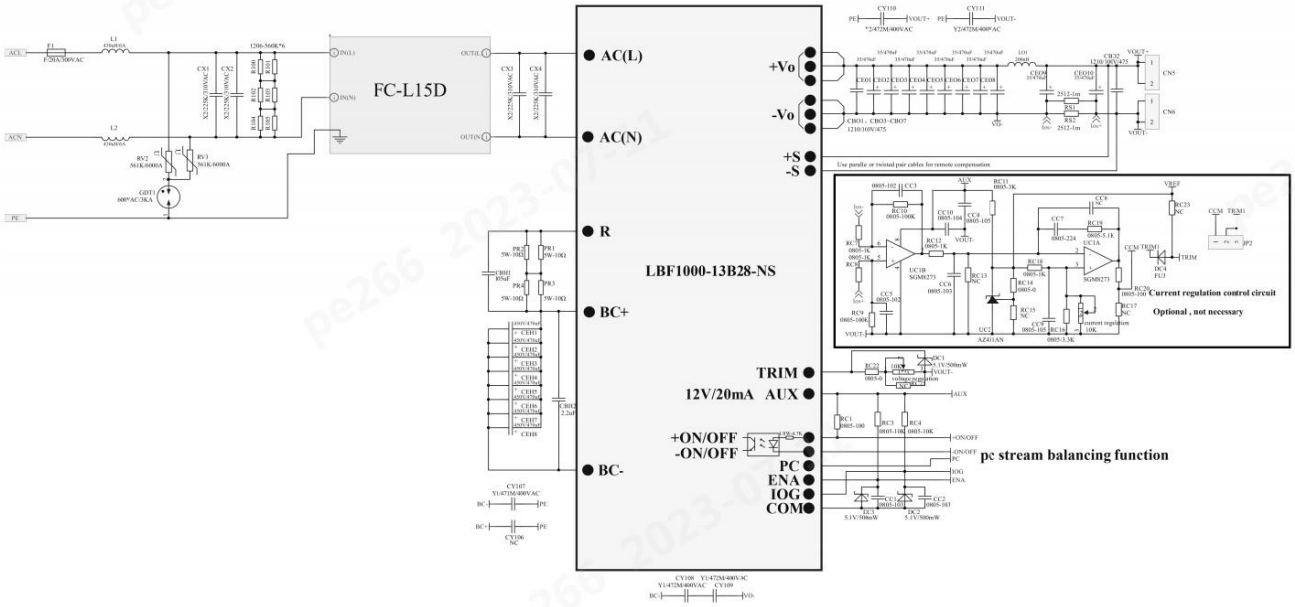


Fig.1

Note: For the decomposition diagram in Figure 1 and detailed device parameters, refer to LBF1000-13B28-NS technical manua recommended peripheral circuits

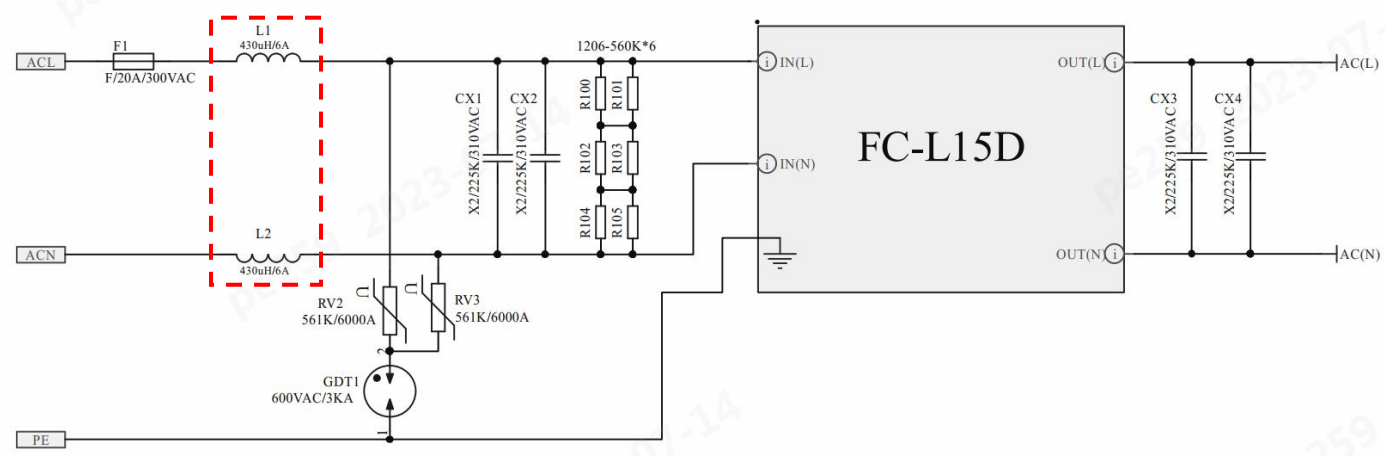
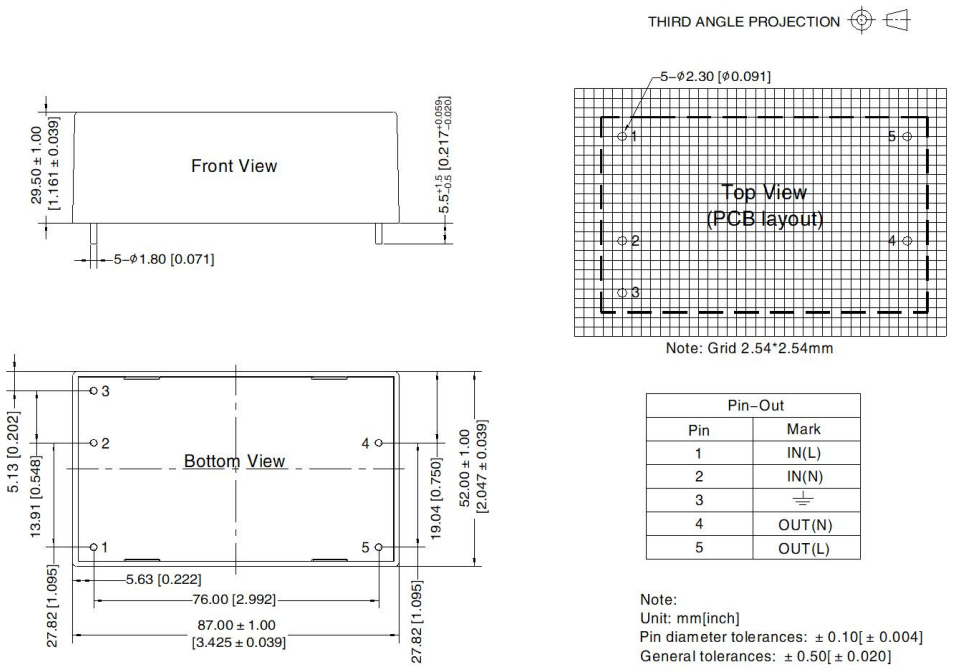


Fig.2

Components	Value	Brand
F1	300VAC/25A	Time-Delay-Fuse Betterfuse
L1、L2*	FD2D -60-431	MORNSUN
RV2/RV3	14D561K/6000A	WMEC Electronic
GDT1	600V/3KA	Bencent
CX1/CX2/CX3/CX4	X2/225K/310VAC	NISTRONICS
R100/R101/R102/R103/R104/R105	560K/1206	FENGHUA

Note: * Added L1 and L2 to meet the military standard GJB151B CE102.

FC-L15D Dimensions and Recommended Layout



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

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

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220019;
2. Unless otherwise specified, data in this datasheet should be tested under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. 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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