

## EMC Filter



## FEATURES

- Ultra-wide input voltage range: 0-305VAC/0-430VDC
- Operating ambient temperature range -40°C to +85°C
- Insertion loss DM&CM>40dB@10MHz
- Meet IEC/EN61000-4 series standards and CISPR32/EN55032
- Compliance with surge 2kV/4kV and 4kV/6kV
- Maximum operating current up to 3A
- Safety according to IEC/EN60939 and IEC62368

The filter is suitable for applications that are sensitive to noise, such as analog circuits. Adding FC-L03Ix to the front end of AC/DC power supply can make the power supply products meet the EMC requirements of IEC/EN61000-4 series and CISPR32/EN55032 standards. When used with Mornsun AC/DC power supply, the maximum input voltage of the 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
	Typ. (Range)	Max*	Typ.	Max	
FC-L03I	230 (0-305)	310	--	3.0	Line-Line ±2kV Line-PE ±4kV
FC-L03I2	230 (0-305)	310	--	3.0	Line-Line ±4kV Line-PE ±6kV

Note: \* 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	--	+85	°C
Storage Temperature		-40	--	+85	
Storage Humidity		--	--	95	%RH
Isolation Voltage	IN(L)~ $\perp$ , IN(N)~ $\perp$ , electric strength test for 1 minute with a leakage current of 5mA max	2000	--	--	VAC
Insertion Loss (CM/DM)	150kHz~1MHz	30	35	-	dB
	1MHz~10MHz	40	45	-	dB
	10MHz~30MHz	20	25	-	dB
MTBF		MIL-HDBK-217F@25°C≥1000,000 h			

## Mechanical Specifications

Case Material	Black plastic; flame-retardant and heat-resistant (UL94 V-0)	
Dimensions	92.66 x 25.00 x 58.00 mm	
Weight	FC-L03I	78g(Typ.)
	FC-L03I2	80g(Typ.)

Cooling Method

Free air convection

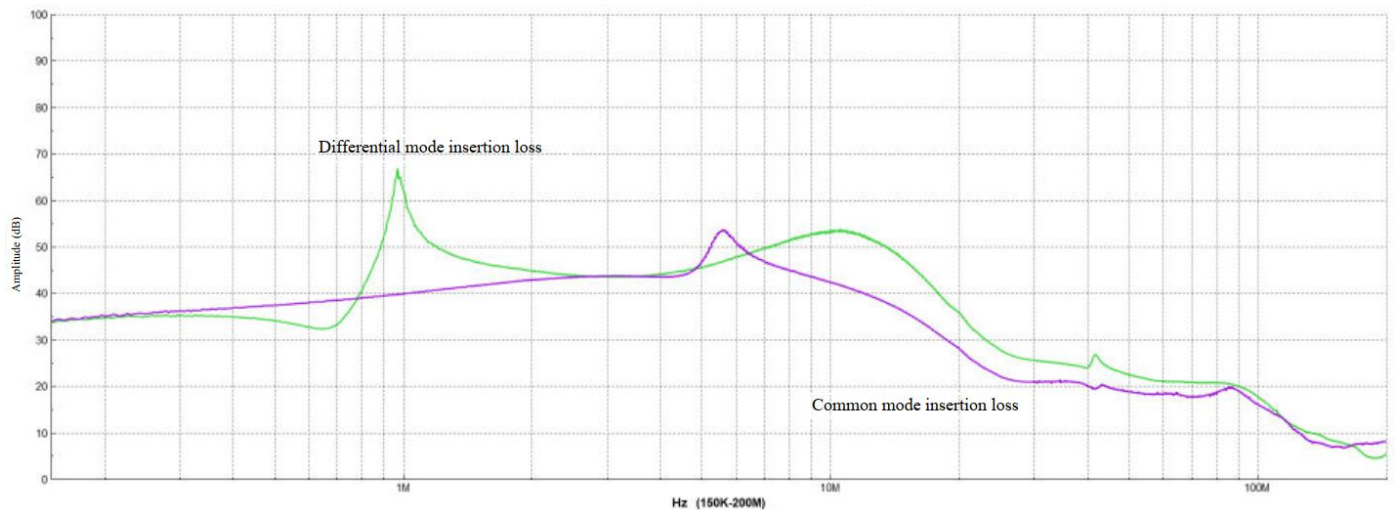
## Electromagnetic Compatibility (EMC)

EMI	CE	CISPR32/EN55032	CLASS B		
	RE	CISPR32/EN55032	CLASS B		
EMS	ESD	IEC/EN61000-4-2	Contact $\pm 8\text{kV}$ , Air $\pm 15\text{kV}$		perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m		perf. Criteria A
	EFT	IEC/EN61000-4-4	$\pm 4\text{kV}$		perf. Criteria A
	Surge	IEC/EN61000-4-5	FC-L03I	Line-Line $\pm 2\text{kV}$ , Line-PE $\pm 4\text{kV}$	perf. Criteria A
			FC-L03I2	Line-Line $\pm 4\text{kV}$ , Line-PE $\pm 6\text{kV}$	perf. Criteria A
	CS	IEC/EN61000-4-6	10V r.m.s		perf. Criteria A
	PFMF	IEC/EN61000-4-8	50/60Hz 30A/m(rms)		perf. Criteria A

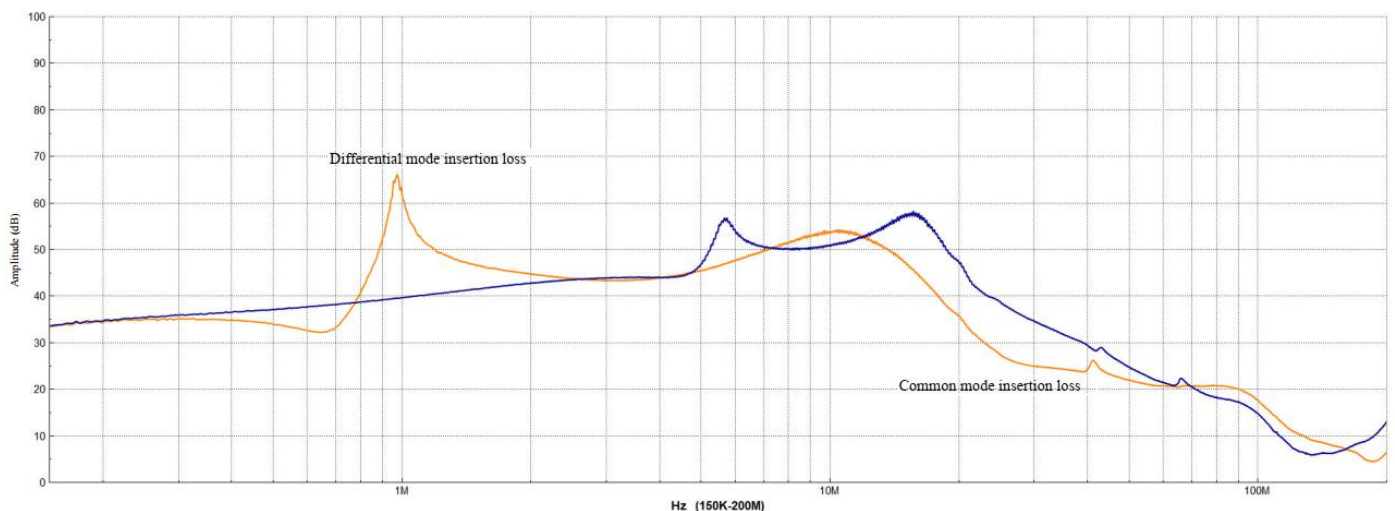
Note: Matching FC-L03Ix to the front end of LI DIN Rail power supply series can make the power module meet above EMC characteristics.

## Insertion Loss Specifications

FC-L03I Insertion Loss Curve

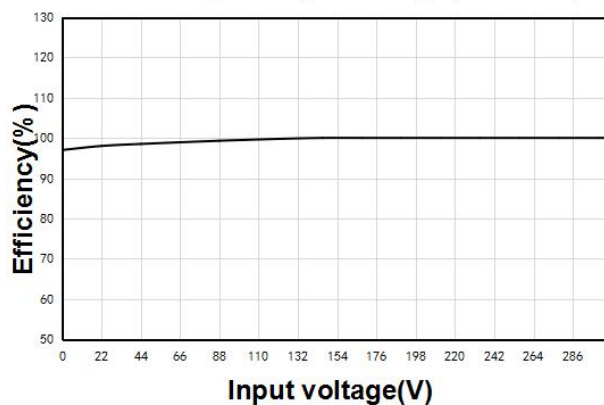


FC-L03I2 Insertion Loss Curve

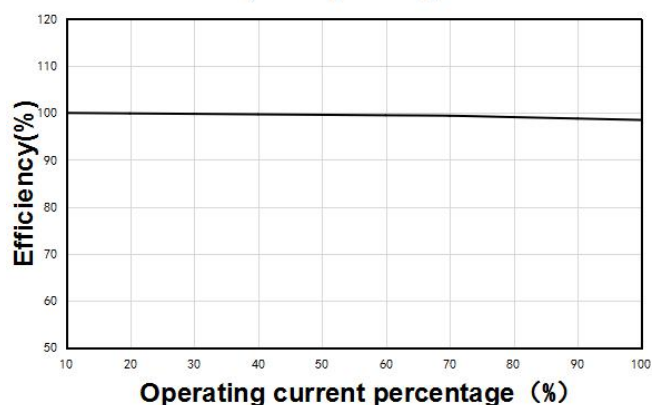


## Product Typical Curve

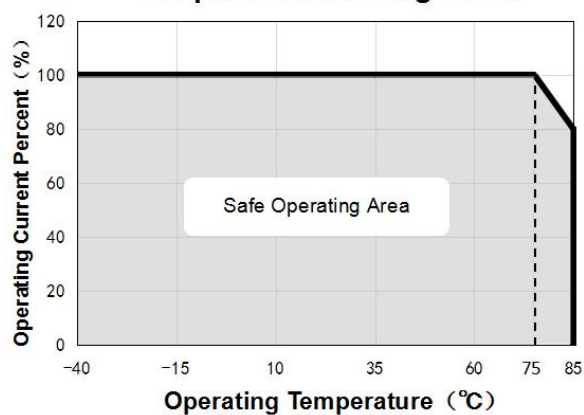
Efficiency VS Input voltage(Full load)



Efficiency VS Operating Current

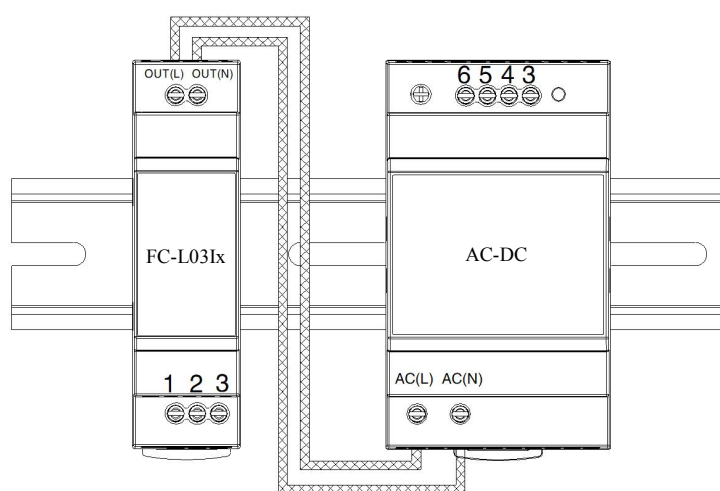


Temperature Derating Curve

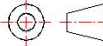


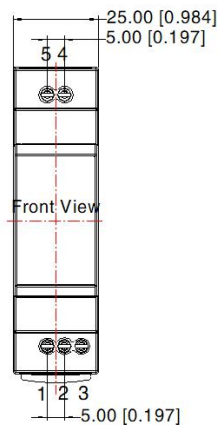
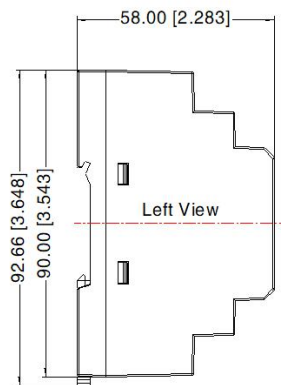
Note: This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

## Installation Instruction



## Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 



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

Note:

Unit: mm[inch]

Wire range: 24-12 AWG

Tightening torque: Max 0.4 N · m

Mounting rail: TS35

General tolerances:  $\pm 1.00 [\pm 0.039]$

Note:

1. For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58220254;
2. 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;
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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