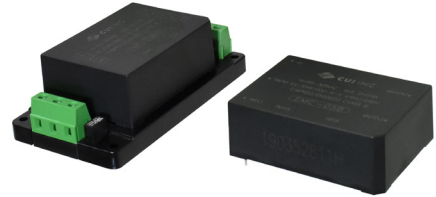


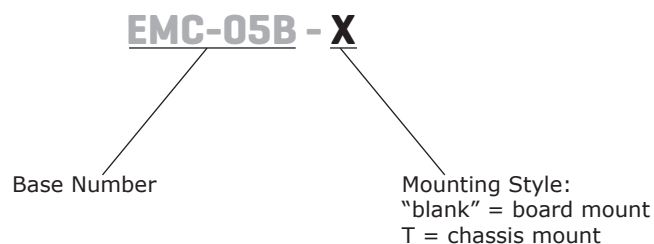
**SERIES:** EMC-05B | **DESCRIPTION:** AC POWER LINE FILTER

**FEATURES**

- reduces emissions to help comply with CISPR22 / EN 55022 Class B
- protects against surge events and Electrical Fast Transients
- wide input voltage range (85 ~ 305 Vac)
- 0.5 A rated current
- -40 to +85°C temperature range
- options for board and chassis mounting


**SPECIFICATIONS**

parameter	conditions/description	min	typ	max	units
input voltage		85		305	Vac
input current				0.5	A
RoHS	yes				
operating temperature		-40		85	°C
storage temperature		-40		105	°C
storage humidity	non-condensing				
case temperature rise	at 220 Vac, 0.05 A			5	°C
	at 220 Vac, 0.25 A			20	°C
	at 220 Vac, 0.5 A			30	°C
leakage current (line to ground)	2000 Vac, tested for 1 minute		2		mA
noise attenuation	150 kHz ~ 1 GHz: EMC-05B		30		dB
EFT	IEC/EN61000-4-4		±4		kV
surge	IEC/EN61000-4-5, +/-4 kV (2 ohms) / +/-6 kV (12 ohms)				

**PART NUMBER KEY**


## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	board mount - 62.00 x 45.00 x 22.50 [2.44 x 1.77 x 0.89 inch] chassis mount - 96.10 x 54.00 x 31.00 [3.78 x 2.13 x 1.22 inch]				mm
case material	black flame-retardant heat-proof epoxy resin (UL94-V0)				
weight	board mount, chassis mount		85/135		g

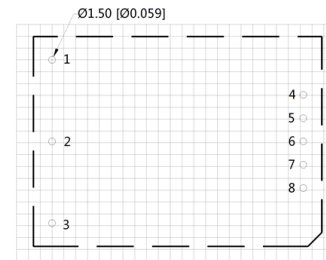
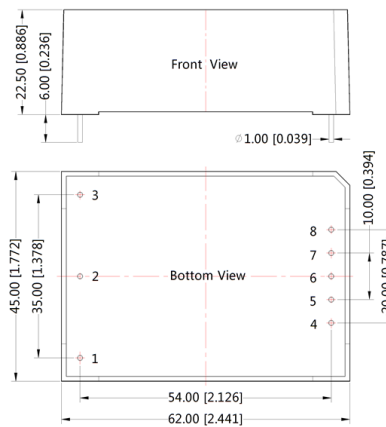
## MECHANICAL DRAWING (BOARD MOUNT-B)

units: mm [inch]

tolerance:  $\pm 0.50$  [ $\pm 0.020$ ]

pin diameter tolerance:  $\pm 0.50$  [ $\pm 0.020$ ]

PIN-OUT	
PIN	Function
1	GND
2	IN(N)
3	IN(L)
4	OUT(N)
5, 6, 7	NC
8	OUT(L)



Note: Grid 2.54\*2.54mm

Recommended PCB Layout  
Top View

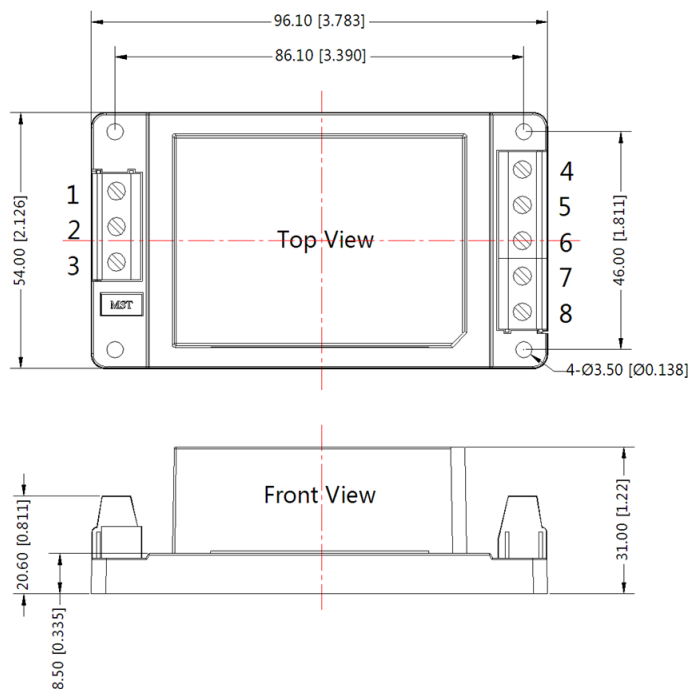
Supporting Product Table

Model	EMI (without external circuit)	EMI (with EMC filter)	EFT (w/o external circuit)	EFT (with EMC filter)	Surge (w/o external circuit)	Surge (with EMC filter)
VSK-S1	CISPR22/EN55022 CLASS B	-	-	IEC/EN61000-4-4 $\pm 2KV$	-	IEC61000-4-5 $\pm 4KV/\pm 6KV$
VSK-S2	CISPR22/EN55022 CLASS B	-	-	IEC/EN61000-4-4 $\pm 2KV$	-	IEC61000-4-5 $\pm 4KV/\pm 6KV$
VSK-S3	CISPR22/EN55022 CLASS A	CISPR22/EN55022 CLASS B	-	IEC/EN61000-4-4 $\pm 2KV$	-	IEC61000-4-5 $\pm 4KV/\pm 6KV$
VSK-S5	CISPR22/EN55022 CLASS A	CISPR22/EN55022 CLASS B	IEC/EN61000-4-4 $\pm 2KV$	IEC/EN61000-4-4 $\pm 4KV$	IEC/EN61000-4-5 $\pm 1K / \pm 2KV$	IEC61000-4-5 $\pm 4KV/\pm 6KV$
VSK-S10	CISPR22/EN55022 CLASS A	CISPR22/EN55022 CLASS B	IEC/EN61000-4-4 $\pm 2KV$	IEC/EN61000-4-4 $\pm 4KV$	IEC/EN61000-4-5 $\pm 1K$	IEC61000-4-5 $\pm 4KV/\pm 6KV$

## MECHANICAL DRAWING (CHASSIS MOUNT)

units: mm [inch]  
 tolerance:  $\pm 0.50$  [ $\pm 0.020$ ]  
 wire range: 24~12 AWG  
 dimensions: 96.1 x 54 x 31 mm

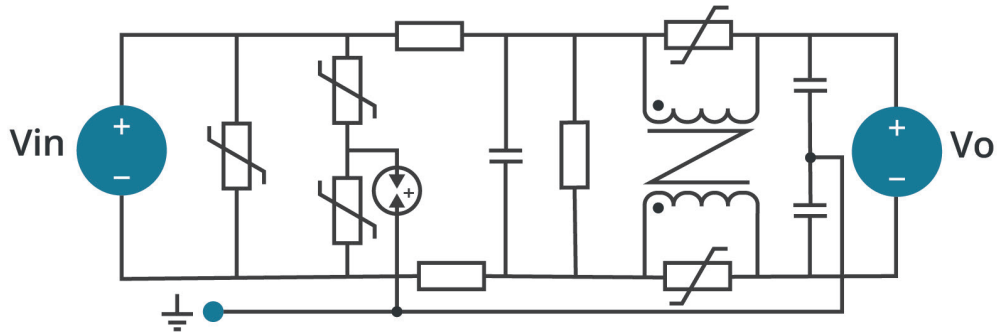
PIN	Function
1	GND
2	IN(N)
3	IN(L)
4	OUT(N)
5	NC
6	NC
7	NC
8	OUT(L)



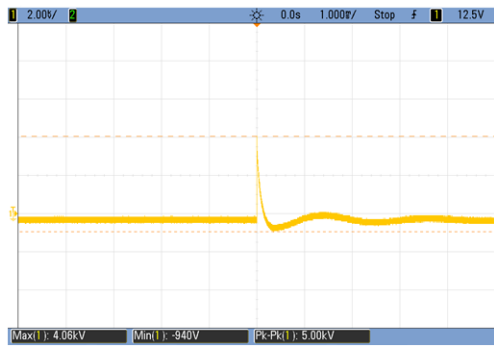
## EMC SPECIFICATIONS

The EMC-05B model increases the surge protection to IEC/EN61000-4-5 ±4KV (2Ω internal resistance)/±6KV (12Ω internal resistance) levels. This model assists in meeting EMI requirements according to CISPR22 /EN 55022 Class B.

Figure 1  
Internal Circuit



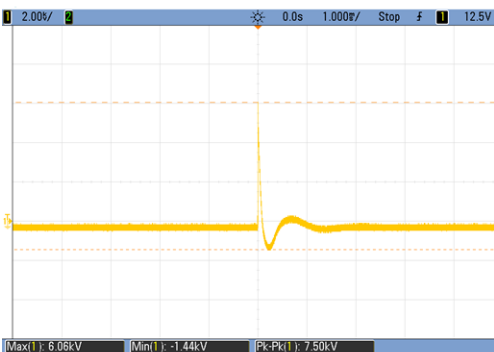
EMC-05B



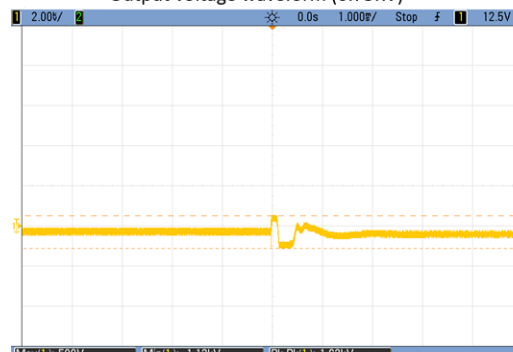
Input voltage waveform (Differential mode 4.06KV)



Output voltage waveform (0.75KV)



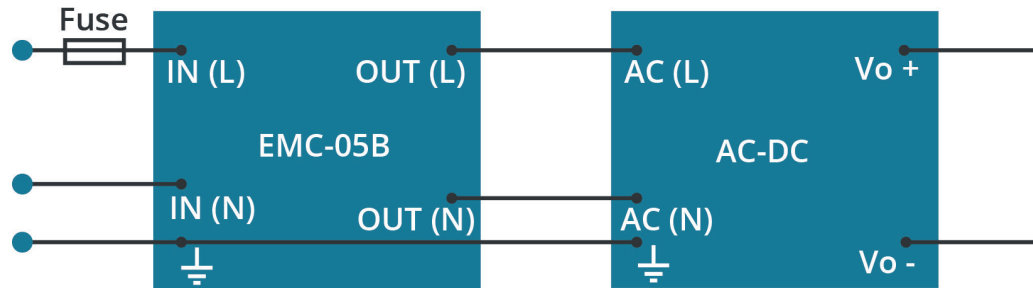
Input voltage waveform (Common mode 6.06KV)



Output voltage waveform(0.5KV)

## APPLICATION CIRCUIT

Figure 2  
Application Circuit



## REVISION HISTORY

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rev.	description	date
1.0	initial release	12/10/2019
1.01	din-rail mount model removed	04/09/2021
1.02	circuit figures updated	01/12/2022

The revision history provided is for informational purposes only and is believed to be accurate.



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