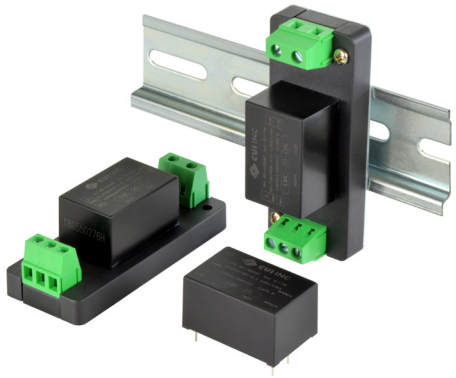
SERIES: EMC-20 | DESCRIPTION: AC POWER LINE FILTER

FEATURES

- 20 dB AC-line noise filtering (150 kHz ~ 1 GHz)
- ensures surge compliance to IEC/EN61000-4-5 standard ±2 kV (2Ω) / ±4 kV (12Ω)
- reduces emissions to help comply with CISPR22 / EN 55022 Class B
- accepts up to 1.5 A (rms) of nominal input current
- wide input voltage range (85~305 Vac)
- wide operating temperature range (-40 to +85 °C)
- options for board-mount, chassis-mount, or DIN-Rail mounting



RoHS

SPECIFICATIONS

parameter	conditions/description	min	typ	max	units
input voltage		85		305	Vac
input current				1.5	A
noise attenuation	at 150 kHz ~ 1 GHz		20		dB
isolation voltage	L/PE, N/PE at 1 minute and leakage current 5 mA max		2,000		Vac
RoHS	yes				
operating temperature		-40		85	°C
storage temperature		-55		125	°C
storage humidity	non-condensing			95	%
case temperature rise	at 220 Vac, 0.5 A at 220 Vac, 1.0 A at 220 Vac, 1.5 A			5 20 30	°C °C °C

Notes: 1. All specifications are measured at Ta=25°C, humidity < 75%, nominal unless otherwise specified.

PART NUMBER KEY

EMC-20 - X

Base Number

Mounting Style:
"blank" = board mount
T = chassis mount
DIN = DIN-rail mount

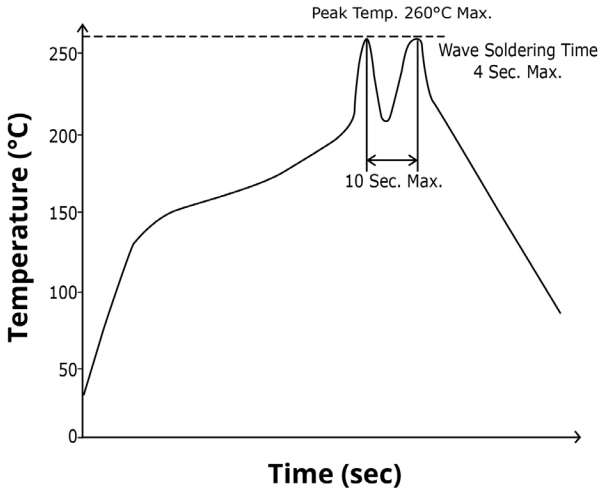
Please read our datasheet & drawing disclaimer here.

SOLDERABILITY[2]

parameter	conditions/description	min	typ	max	units
hand soldering	for 3~5 seconds	350	360	370	°C
wave soldering	see wave soldering profile			260	°C

Note: 2. For board mount models only.

WAVE SOLDERING PROFILE



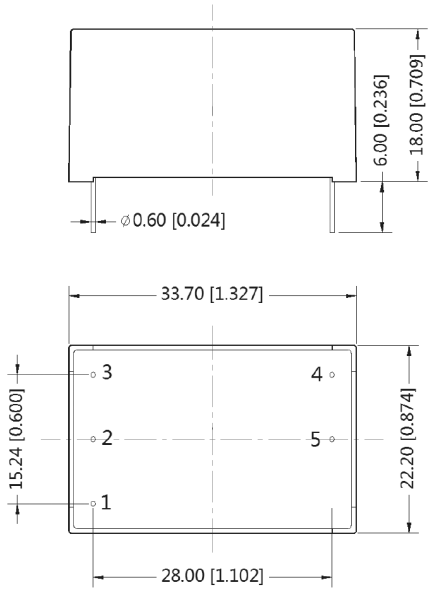
MECHANICAL

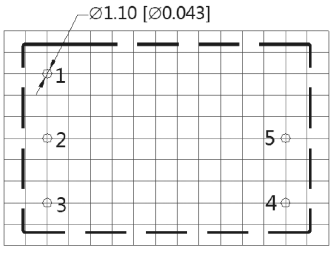
parameter	conditions/description	min	typ	max	units
dimensions	board mount: 33.70 x 22.20 x 18.00 [1.327 x 0.874 x 0.709 inch]				mm
	chassis mount: 76.00 x 31.50 x 26.80 [2.992 x 1.240 x 1.055 inch]				mm
	DIN-Rail mount: 76.00 x 31.50 x 31.40 [2.992 x 1.240 x 1.236 inch]				mm
case material	black flame-retardant heat-proof epoxy resin (UL94V-0)				
weight	board mount		20		g
	chassis mount		40		g
	DIN-rail mount		60		g

MECHANICAL DRAWING (BOARD MOUNT)

units: mm [inch]
tolerance: ±0.50[±0.020]
pin diameter tolerance: ±0.10[±0.004]

PIN CONNECTIONS	
PIN	Function
1	GND
2	IN(N)
3	IN(L)
4	OUT(L)
5	OUT(N)





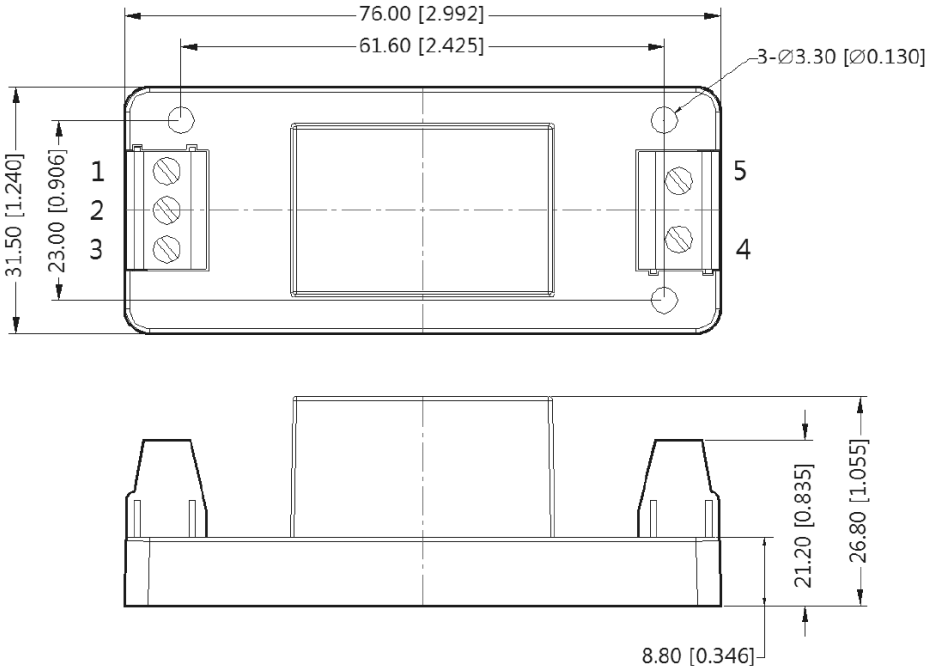
Note : Grid 2.54*2.54mm
Recommended PCB Layout
Top View

MECHANICAL DRAWING (CHASSIS MOUNT)

units: mm [inch]
tolerance: ±0.50[±0.020]

wire range: 24~12 AWG

PIN CONNECTIONS	
PIN	Function
1	GND
2	IN(N)
3	IN(L)
4	OUT(L)
5	OUT(N)

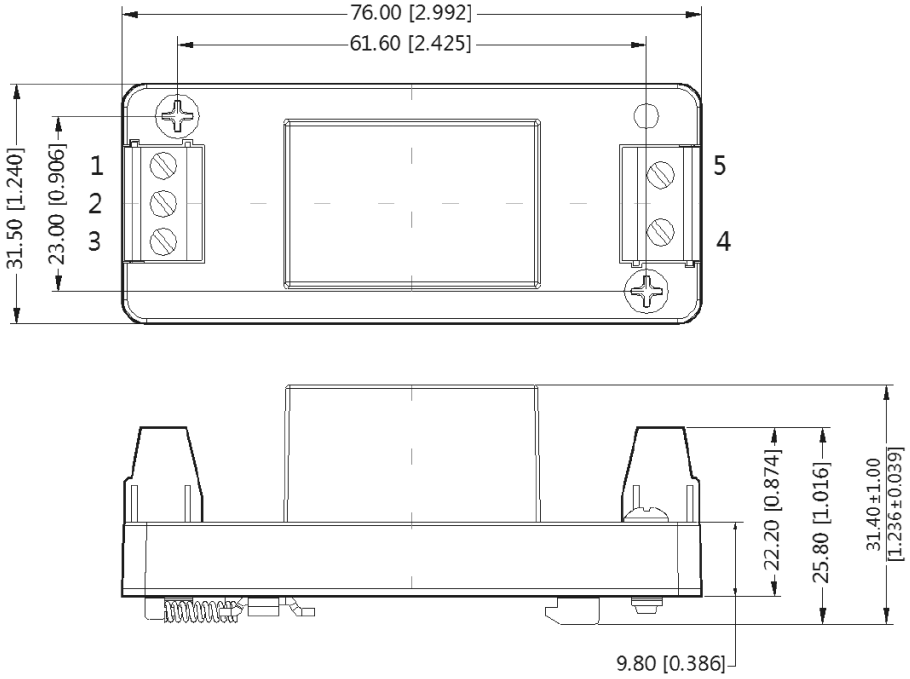


MECHANICAL DRAWING (DIN-RAIL MOUNT)

units: mm [inch]
tolerance: ±0.50[±0.020]

installed on DIN rail TS35
wire range: 24~12 AWG

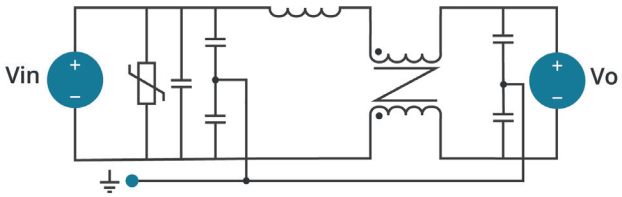
PIN CONNECTIONS	
PIN	Function
1	GND
2	IN(N)
3	IN(L)
4	OUT(L)
5	OUT(N)

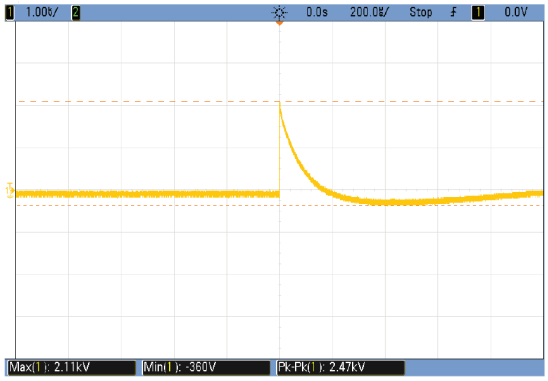


EMC SPECIFICATIONS

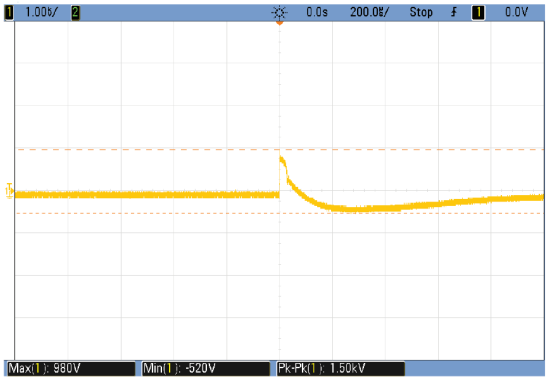
Put the EMC-20 on the input of the AC-DC module to meet surge level IEC/EN 61000-4-5 ±2 kV (2 Ω internal resistance), ±4 kV (12 Ω internal resistance), and help to meet EN 55022 Class B.

Figure 1
Internal Circuit

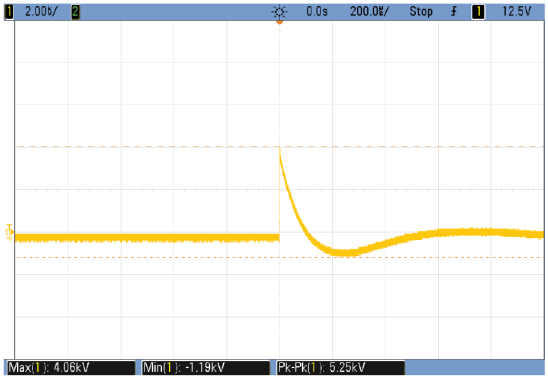




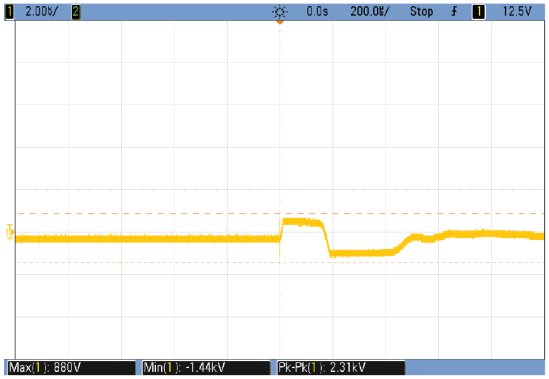
Input voltage waveform (Differential mode 2.11KV)



Output voltage waveform (Differential mode 0.98KV)



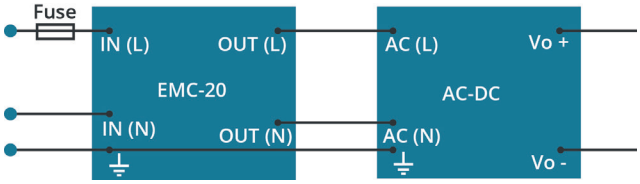
Input voltage waveform (Common mode 4.06KV)



Output voltage waveform(Common mode 0.88 KV)

APPLICATION CIRCUIT

Figure 2
Application Circuit



REVISION HISTORY

rev.	description	date
1.0	initial release	10/26/2018
1.01	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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