CUI INC
a bel group

SERIES: VFM-30 | DESCRIPTION: DC POWER LINE FILTER

FEATURES

- 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 (10~36 Vdc)
- wide operating temperature range (-40 to +85 °C)
- options for board-mount, chassis-mount, or DIN-Rail mounting
- designed for use with PYBE30-Q24 DC-DC converter

RoHS

SPECIFICATIONS

parameter	conditions/description	min	typ	max	units
input voltage		10	24	36	Vdc
output power				30	W
no load input current	at 24 Vdc			10	mA
efficiency	at 24 Vdc, full load		98		%
isolation voltage	+Vin to GND, -Vin to GND, at 1 minute and leakage current 5 mA max			500	Vac
conducted emissions[2]	meets CISPR32 /EN 55032 150 kHz ~ 30 MHz, class B				
radiated emissions[2]	meets CISPR32 /EN 55032 30 MHz ~ 1 GHz, class B				
ESD	IEC/EN61000-4-2, air ±8 kV, contact ± 6kV, class B				
radiated immunity	IEC/EN61000-4-3, 10 V/m, class A				
EFT/burst	IEC/EN61000-4-4, ±4 kV(5 kHz, 100 kHz), class B				
surge	IEC/EN61000-4-5, ±2 kV (1.2μs/50μs 2Ω)/±4 kV (1.2 μs/50 μs 12 Ω), class B				
conducted immunity	IEC/EN61000-4-6, 10 Vr.m.s, class A				
MTBF	as per MIL-HDBK-217F, 40°C		1,000,000		hours
RoHS	yes				
operating temperature		-40		85	°C
storage temperature		-55		125	°C
storage humidity	non-condensing	5		95	%

Notes: 1. All specifications are measured at Ta=25°C, humidity < 75%, nominal input voltage, and rated load, unless otherwise specified.
2. When paired with PYBE30-Q24 DC-DC converter.

PART NUMBER KEY

VFM-30 - X

Base Number

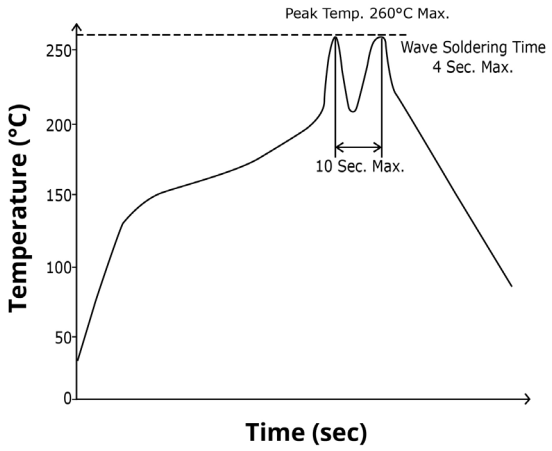
Mounting Style:
D = board mount
T = chassis mount
DIN = DIN-rail mount

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



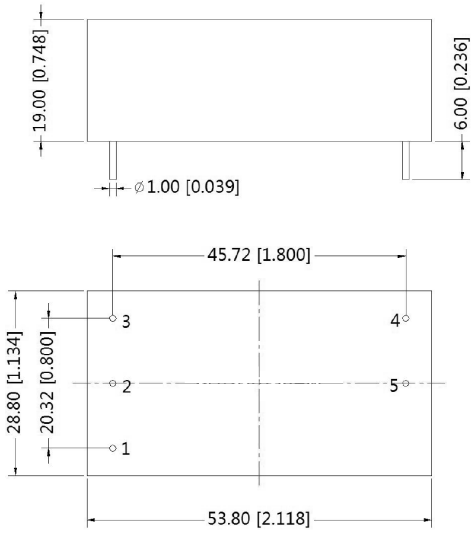
MECHANICAL

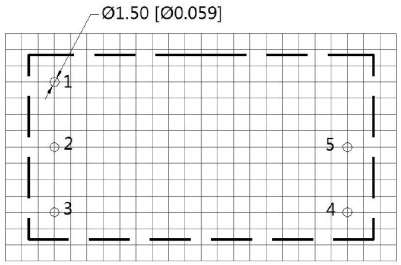
parameter	conditions/description	min	typ	max	units
dimensions	board mount: 53.80 x 28.80 x 19.00 [2.118 x 1.134 x 0.748 inch]				mm
	chassis mount: 76.00 x 31.50 x 27.80 [2.992 x 1.240 x 1.094 inch]				mm
	DIN-Rail mount: 76.00 x 31.50 x 32.40 [2.992 x 1.240 x 1.276 inch]				mm
case material	black flame-retardant heat-proof epoxy resin (UL94V-0)				
weight	board mount		50		g
	chassis mount		70		g
	DIN-rail mount		90		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	-Vin
3	+Vin
4	+Vout
5	-Vout





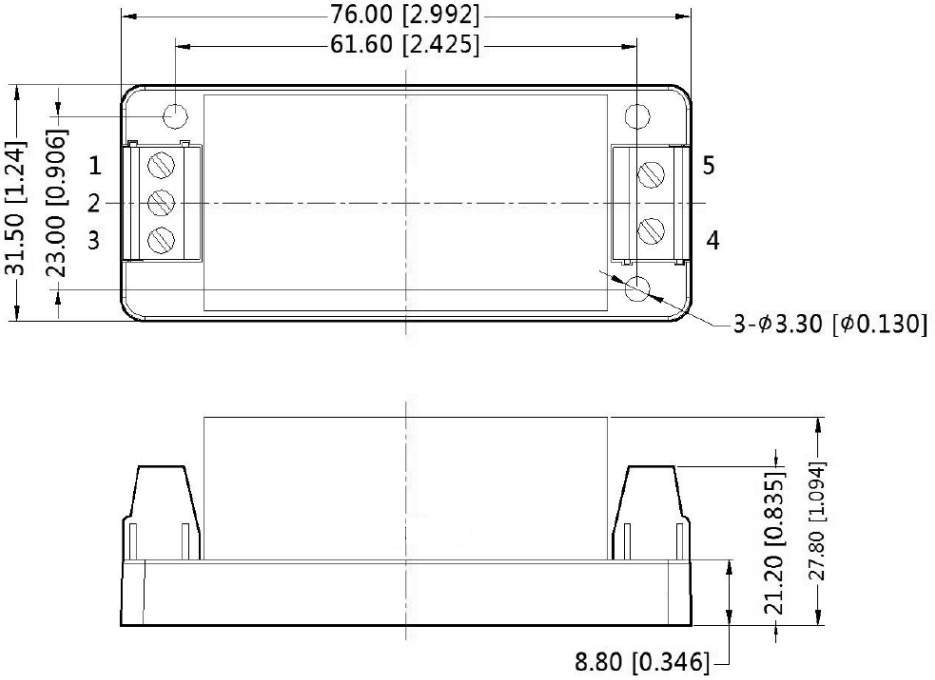
Note : Grid 2.54*2.54mm
Recommended PCB Layout
Top View

MECHANICAL DRAWING (CHASSIS MOUNT)

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

wire range: 24~12 AWG
tightening torgue: 0.4 N*m max

PIN CONNECTIONS	
PIN	Function
1	GND
2	-Vin
3	+Vin
4	+Vout
5	-Vout

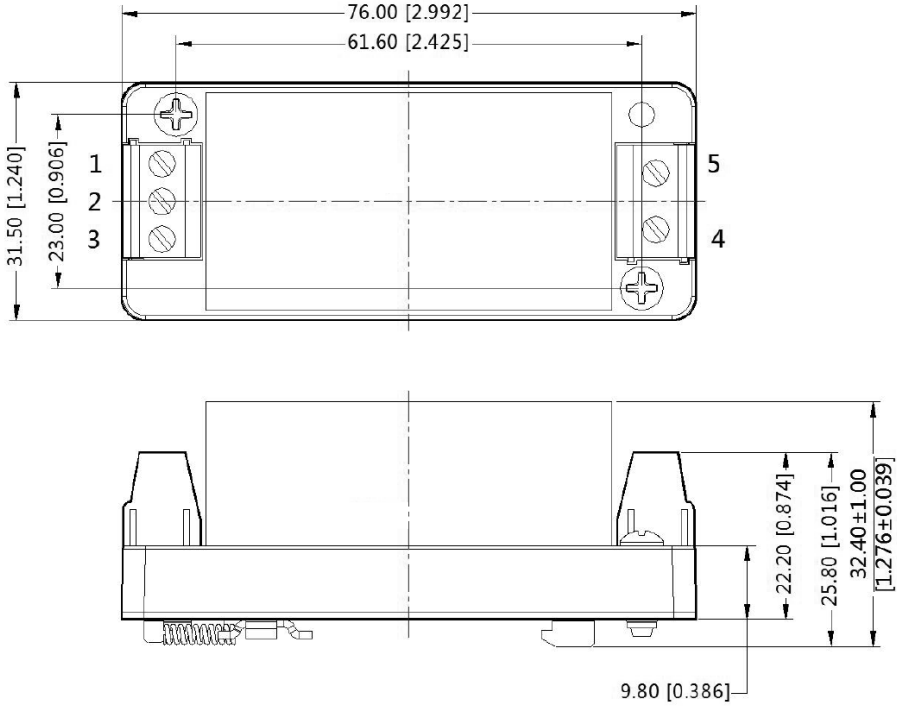


MECHANICAL DRAWING (DIN-RAIL MOUNT)

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

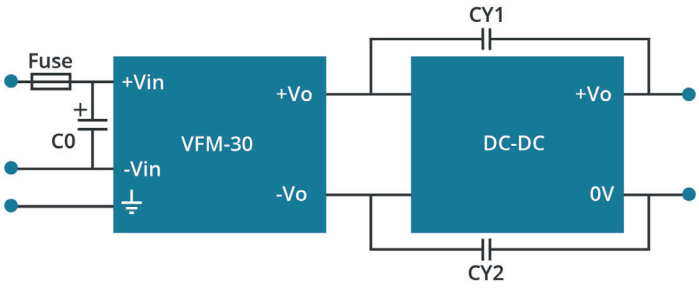
installed on DIN rail TS35
wire range: 24~12 AWG
tightening torgue: 0.4 N*m max

PIN CONNECTIONS	
PIN	Function
1	GND
2	-Vin
3	+Vin
4	+Vout
5	-Vout



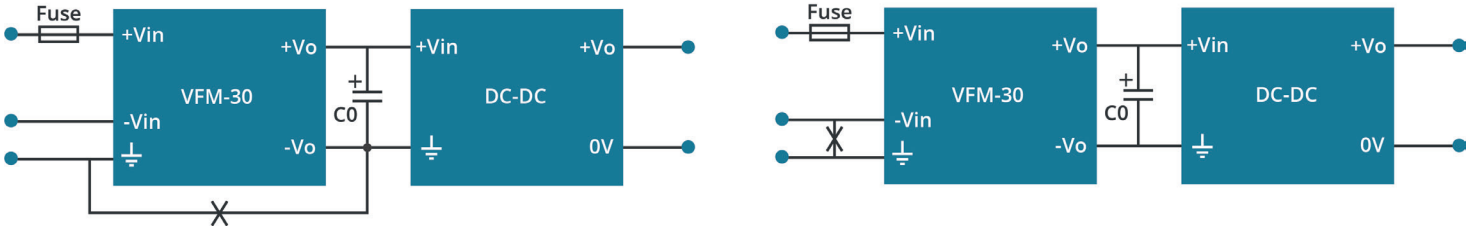
APPLICATION CIRCUIT

Figure 1
Application Circuit



Recommended External Circuit Components	
FUSE	choose according to power module datasheet
C0	400 µF / 200 V, electrolytic
CY1, CY2	1 nF / 2 kV

Figure 2
Non-supported Application for Module



REVISION HISTORY

rev.	description	date
1.0	initial release	11/14/2018
1.01	circuit figures updated	01/14/2022
1.02	features updated	09/12/2023

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

CUI INC

Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com