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

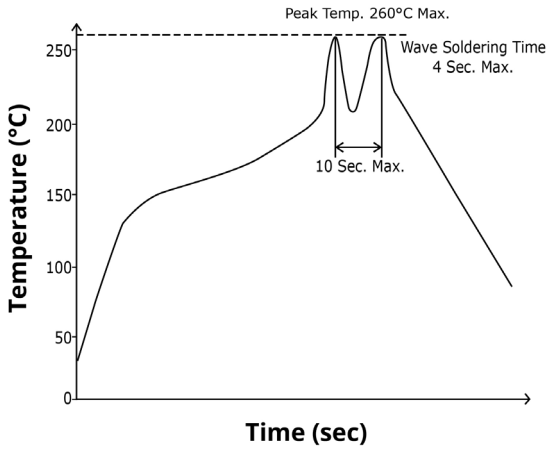
Please read our datasheet & drawing disclaimer here.

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



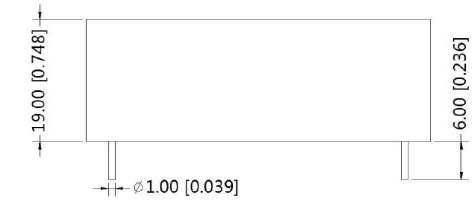
MECHANICAL

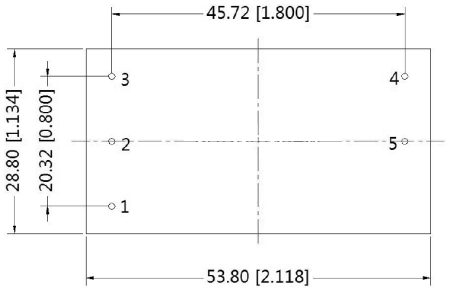
parameter	conditions/description	min	typ	max	units
dimensions	board mount: 53.80 x 28.80 x 19.00 [2.118 x 1.134 x 0.748 inch]				mm
	chassis mount: 76.00 x 31.50 x 27.80 [2.992 x 1.240 x 1.094 inch]				mm
	DIN-Rail mount: 76.00 x 31.50 x 32.40 [2.992 x 1.240 x 1.276 inch]				mm
case material	black flame-retardant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

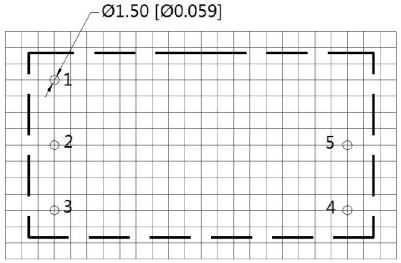
MECHANICAL DRAWING (BOARD MOUNT)

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







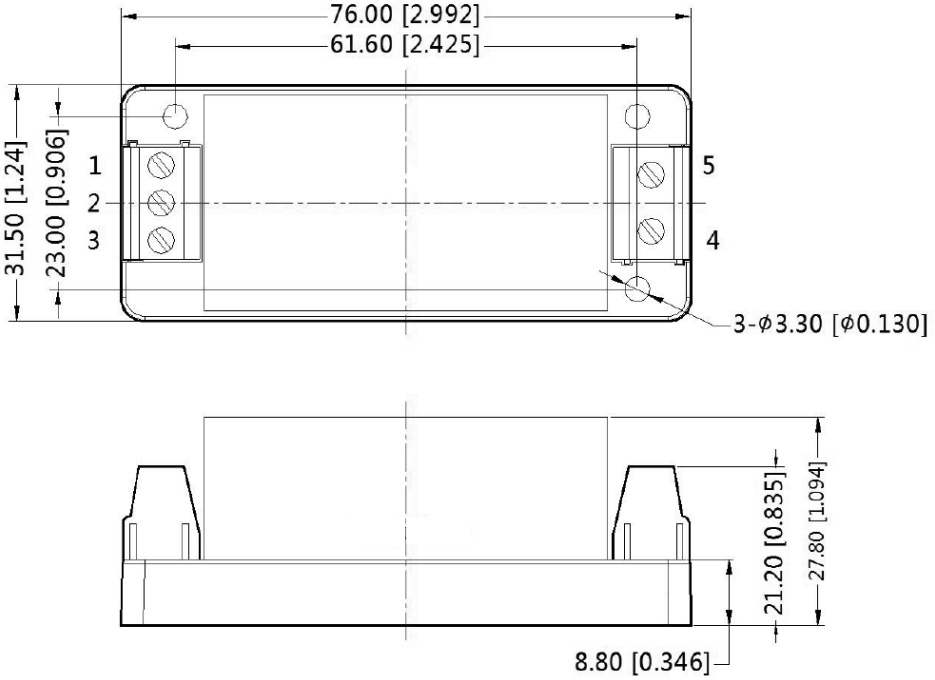
Note : Grid 2.54*2.54mm
Recommended PCB Layout
Top View

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

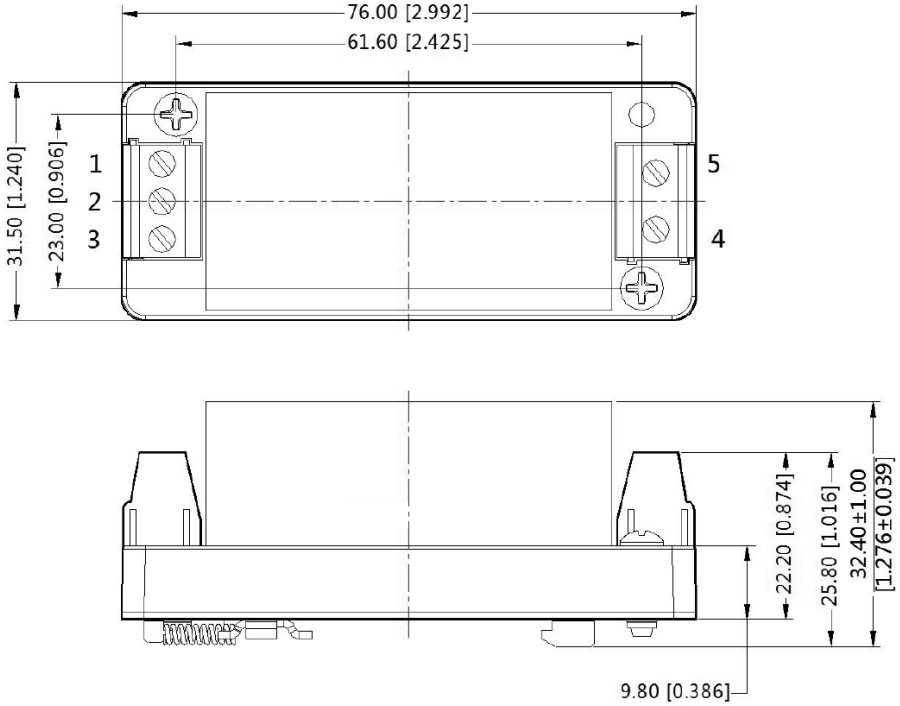


MECHANICAL DRAWING (DIN-RAIL MOUNT)

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

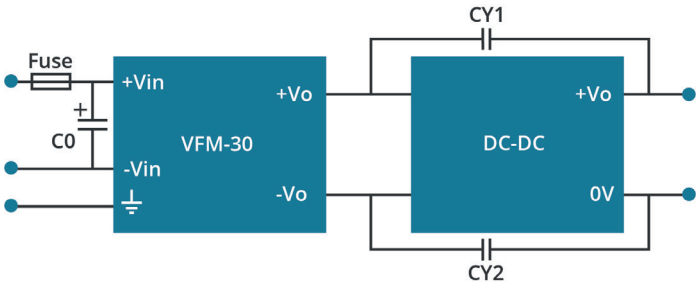
installed on DIN rail TS35
wire range: 24~12 AWG
tightening torgue: 0.4 N*m max

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



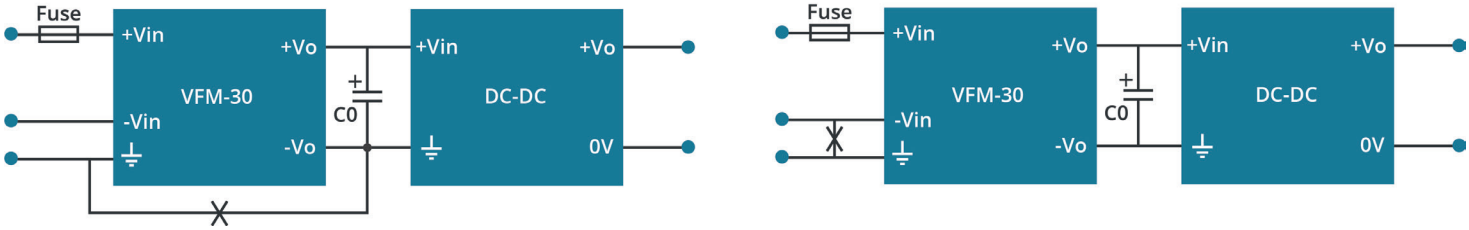
APPLICATION CIRCUIT

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.

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