SERIES: PSK-10W | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

FEATURES
- wide input range (85~305 Vac)
- UL/EN/IEC 62368 certified
- meets CISPR32/EN 55032 Class B without external components
- short-circuit, over-current, over-voltage protections

MODEL

MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise typ (mVp-p)	efficiency typ (%)
PSK-10W-3	3.3	2.0	6.6	100	72
PSK-10W-5	5	2.0	10	100	76
PSK-10W-9	9	1.1	10	100	79
PSK-10W-12	12	0.9	10.8	100	81
PSK-10W-15	15	0.7	10.5	100	81
PSK-10W-24	24	0.45	10.8	100	82

PART NUMBER KEY

PSK - 10W - XX - X

- PSK - 10W: Base Number
- XX: Output Voltage
- X: Mounting Style

blank = board mount
T = chassis mount
DIN = DIN-rail mount

INPUT

parameter	conditions/description	min	typ	max	units
voltage	ac input dc input	85 100		305 430	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			.23 .15	A A
inrush current	at 115 Vac at 230 Vac		15 30		A
leakage current	230 Vac / 50 Hz			.25	mA
no load power consumption	at 230 Vac			0.5	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	3.3 Vdc output models 5 Vdc output models 9 Vdc output models 12 Vdc output models 15 Vdc output models 24 Vdc output models			26400 9440 3600 2000 1170 370	µF
output voltage accuracy	3.3 V all other models		±3 ±2		% %
line regulation	full load		±0.5		%
load regulation	0~100% load		±1.0		%
hold-up time	at 115 Vac at 230 Vac		8 75		ms ms
switching frequency			100		kHz
temperature coefficient			±0.02		%/°C

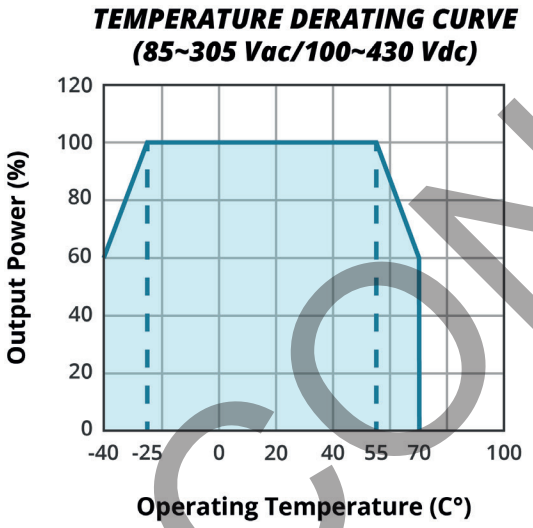
PROTECTIONS

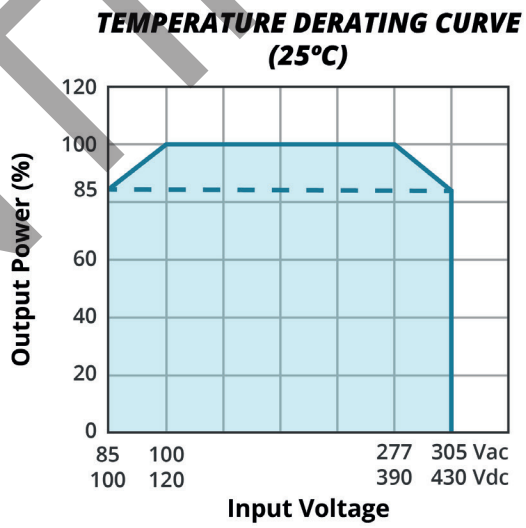
parameter	conditions/description	min	typ	max	units
over voltage protection	3.3 / 5 Vdc output models 9 Vdc output models 12 Vdc output models 15 Vdc output models 24 Vdc output models			9 15 20 25 35	V
over current protection	self recovery	110		300	%
short circuit protection	hiccup, continuous, self recovery				

SAFETY & COMPLIANCE

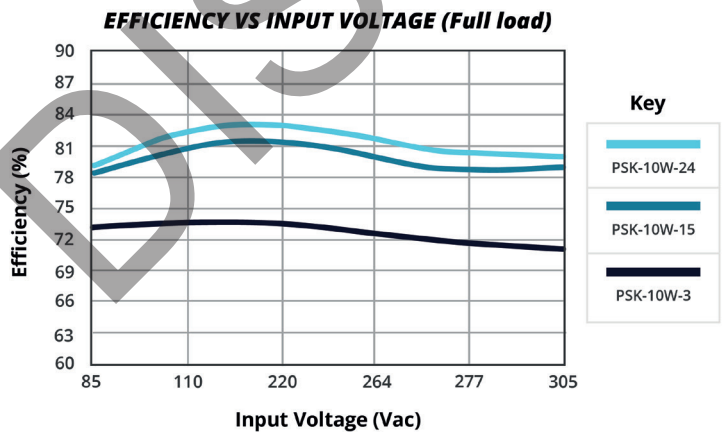
parameter	conditions/description	min	typ	max	units
isolation voltage	input to output	4,000			Vac
safety approvals	IEC 62368/EN 62368/UL 62368				
safety class	Class II				
EMI/EMC	CISPR 32/EN 55032: 2015 Class B				
ESD	IEC/EN 61000-4-2: Contact ±6KV/ Air ±8KV, perf. Criteria B				
radiated immunity	IEC/EN 61000-4-3: 10V/m, perf. Criteria A				
EFT/burst	IEC/EN 61000-4-4: ±2KV, perf. Criteria B IEC/EN 61000-4-4: ±4KV, see recommended circuit, perf. Criteria B				
surge	IEC/EN 61000-4-5: line to line ±1KV, perf. Criteria B IEC/EN 61000-4-5: line to line ±2KV, line to ground ±4KV, see recommended circuit				
conducted immunity	IEC/EN 61000-4-6: 10Vr.m.s, perf. Criteria A				
voltage dips	IEC/EN 61000-4-11: 0%, 70%				
MTBF	as per MIL-HDBK-217F @ 25°C	300,000			hours
RoHS	yes				

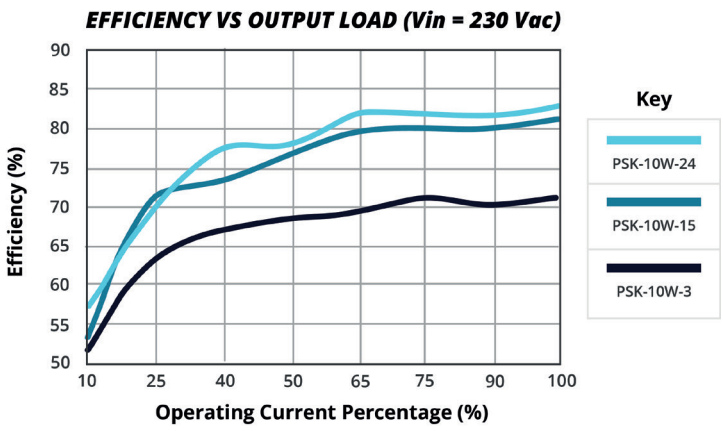
DERATING CURVE





EFFICIENCY CURVES





ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-40		70	°C
storage temperature		-40		85	°C
storage humidity	non-condensing	0		95	%

SOLDERABILITY

parameter	conditions/description	min	typ	max	units
wave soldering	for 5~10 seconds	255	260	265	°C
hand soldering	for 3~5 seconds	350	360	370	°C

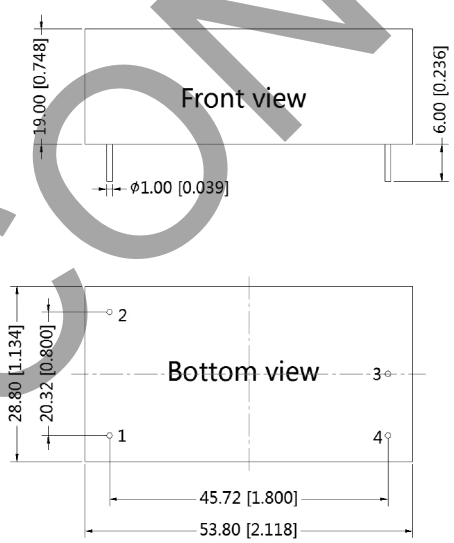
MECHANICAL

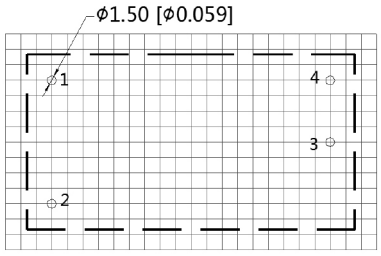
parameter	conditions/description	min	typ	max	units
dimensions	53.80 x 28.80 x 19.00				mm
weight			48		g
cooling	free air convection				
case material	Black plastic, flame-retardant and heat-resistant (UL94V-0)				

MECHANICAL DRAWING (BOARD MOUNT)

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

PIN CONNECTIONS	
PIN	Function
1	AC (N)
2	AC (L)
3	-Vo
4	+Vo



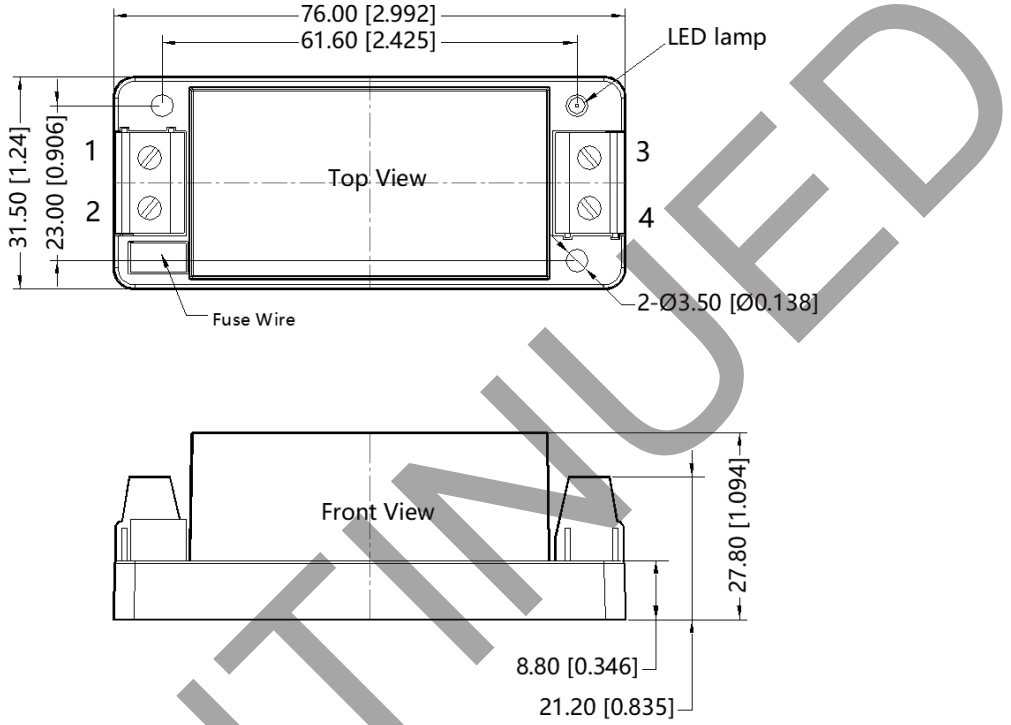


Note : Grid 2.54*2.54mm

MECHANICAL DRAWING (CHASSIS MOUNT)

units: mm [inch]
tolerance: ±0.50 [±0.020]
wire range: 24~12 AWG
tightening torque: max 0.4 N·m

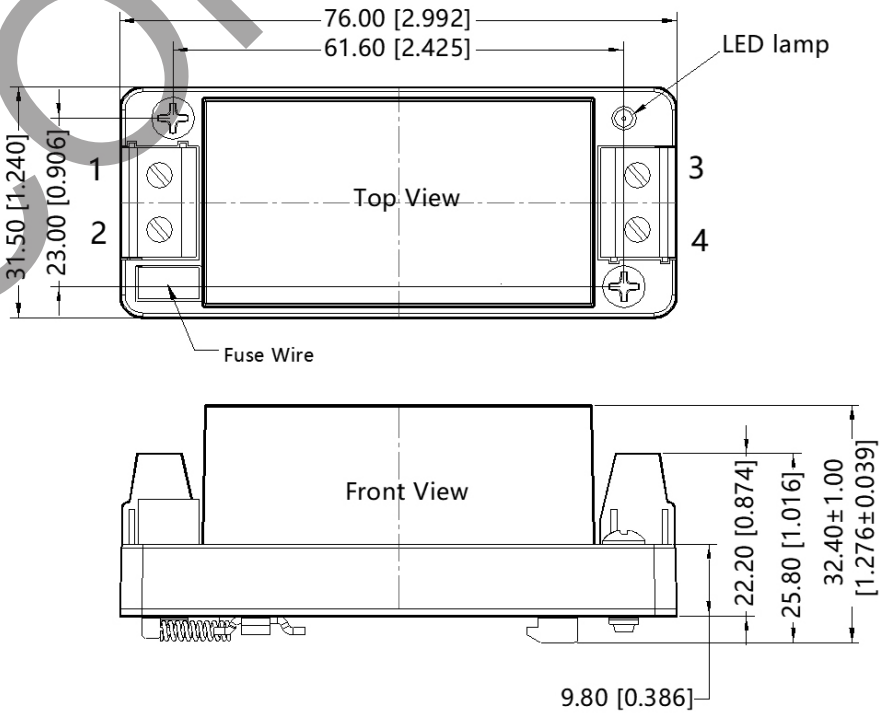
PIN CONNECTIONS	
PIN	Function
1	AC (N)
2	AC (L)
3	-Vo
4	+Vo



MECHANICAL DRAWING (DIN-RAIL MOUNT)

units: mm [inch]
tolerance: ±0.50 [±0.020]
wire range: 24~12 AWG
tightening torque: max 0.4 N·m

PIN CONNECTIONS	
PIN	Function
1	AC (N)
2	AC (L)
3	-Vo
4	+Vo



TYPICAL APPLICATION CIRCUIT

Figure 1

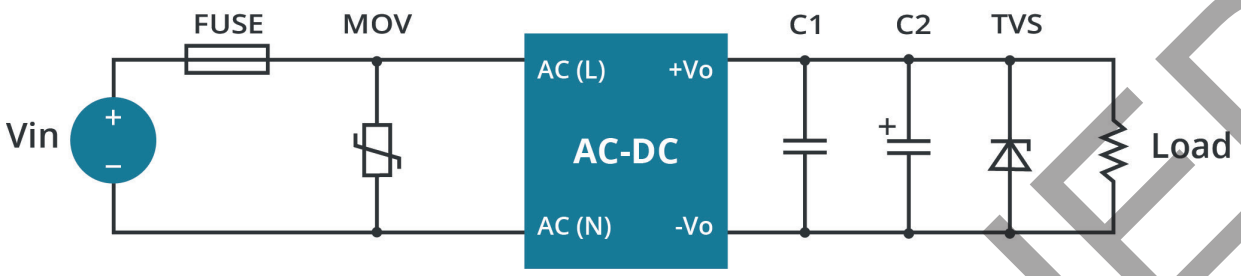


Table 1

Recommended External Circuit Components					
Vo (Vdc)	FUSE[6]	MOV[6]	C1	C2	TVS
3.3	2A/300V	S14K350	1µF/50V	470µF/10V	SMBJ7.0A
5	2A/300V	S14K350	1µF/50V	470µF/10V	SMBJ7.0A
9	2A/300V	S14K350	1µF/50V	220µF/25V	SMBJ15A
12	2A/300V	S14K350	1µF/50V	220µF/25V	SMBJ20A
15	2A/300V	S14K350	1µF/50V	220µF/25V	SMBJ20A
24	2A/300V	S14K350	1µF/50V	100µF/35V	SMBJ30A

Notes: 6. Chassis Mount and DIN-Rail Mount versions include the fuse and MOV components.

EMC RECOMMENDED CIRCUIT

Figure 2

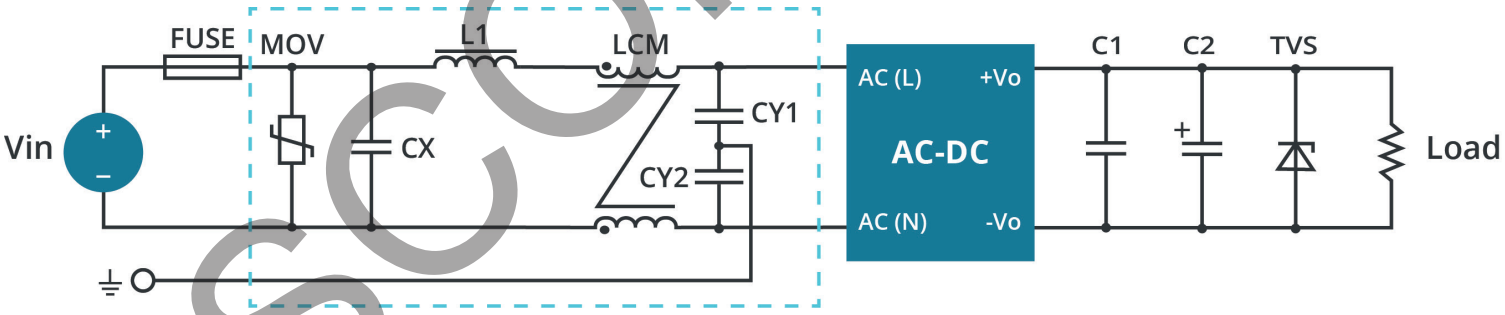


Table 2

Recommended External Circuit Components	
FUSE	3.15 A/300 V, slow fusing
MOV	S14K350
LCM	2.2 mH
CX	0.1 µF/310 Vac
L1	4.7 µH/ 2 A
CY1/CY2	1000 pF/400 Vac

Note: Also refer to Table 1.

Notes: 7. C1 is a ceramic capacitor used to filter high frequency noise.
8. C2 is an electrolytic capacitor and it is recommended to be high frequency and low impedance. For capacitance and current of capacitor, refer to the datasheet provided by the manufacturer. Voltage derating of capacitor should be at least 80%.
9. TVS is a recommended component to protect post-circuits (if converter fails).

REVISION HISTORY

rev.	description	date
1.0	initial release	06/29/2020
1.01	mechanical drawings updated	12/03/2020
1.02	figure and circuit drawings updated	02/24/2021
1.03	UKCA mark added	05/26/2022

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

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