CUI INC
a bel group

SERIES: PSK-45 | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

FEATURES

- universal input voltage range (85~264 VAC)
- IEC/EN/UL 62368 certified
- meets CISPR32/EN 55032 Class B without external components
- 4,000 VAC isolation rating
- short-circuit, over-current, over-voltage protections



RoHS CE cULus

MODEL

MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise max (mVp-p)	efficiency typ (%)
PSK-45-5	5	8.0	40	120	81
PSK-45-12	12	3.8	45	120	84
PSK-45-15	15	3.0	45	120	85
PSK-45-24	24	1.9	45	120	86
PSK-45-48	48	0.94	45	120	87

PART NUMBER KEY

PSK-45 - XX- X

- PSK-45 — 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		264 370	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			1.5 0.75	A
inrush current	at 115 Vac at 230 Vac		50 70		A
no load power consumption	at 230 Vac			0.5	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output 12 Vdc output 15 Vdc output 24 Vdc output 48 Vdc output			30,000 6,400 5,600 2,000 600	µF
initial set point accuracy	at full load		±2		%
line regulation	rated load		±0.5		%
load regulation	0%~100% load		±1.0		%
hold-up time	at 115 Vac at 230 Vac		8 50		ms
temperature coefficient			±0.02		%/°C

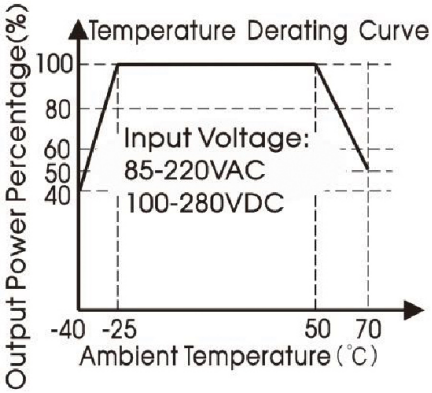
PROTECTIONS

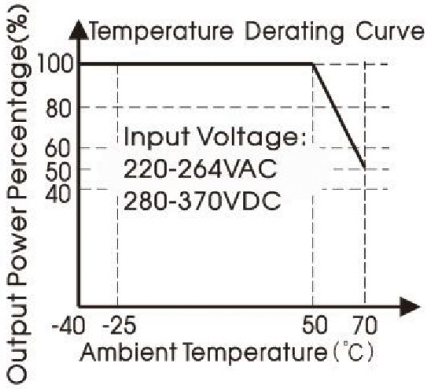
parameter	conditions/description	min	typ	max	units
over voltage protection	5 Vdc output, clamp or hiccup 12 Vdc output, clamp or hiccup 15 Vdc output, clamp or hiccup 24 Vdc output, clamp or hiccup 48 Vdc output, clamp or hiccup			9 16 24 35 56	V
over current protection	auto recovery	110			%
short circuit protection	hiccup, continuous, auto recovery				

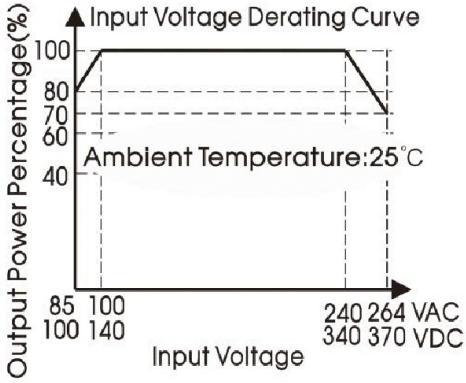
SAFETY & COMPLIANCE

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

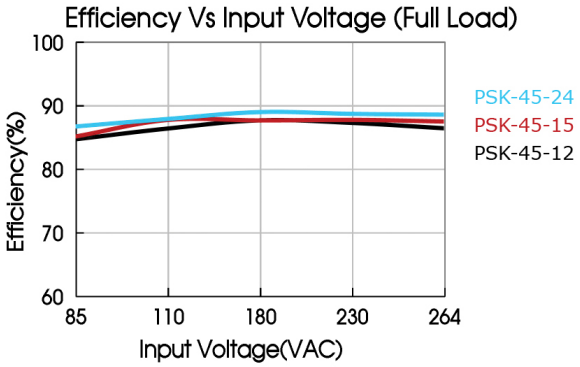
DERATING CURVE

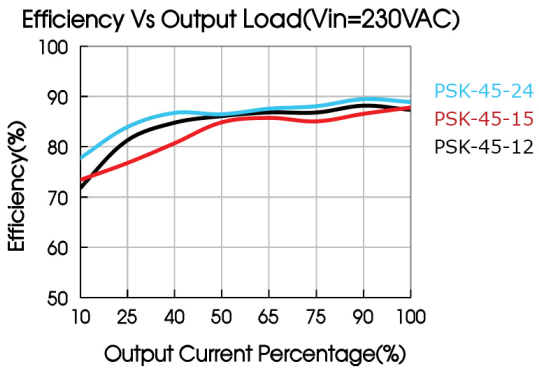






EFFICIENCY CURVES





ENVIRONMENTAL

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

SOLDERABILITY

parameter	conditions/description	min	typ	max	units
wave soldering	5~10 seconds (± 5 °C)			260	°C
manual welding	3~5 seconds (± 10 °C)			360	°C

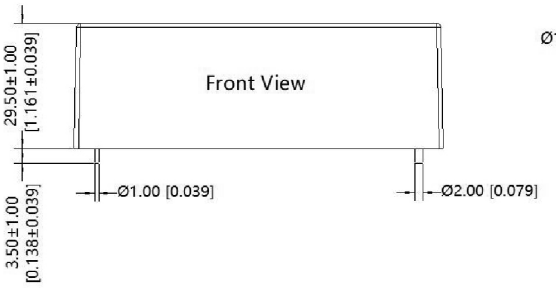
MECHANICAL

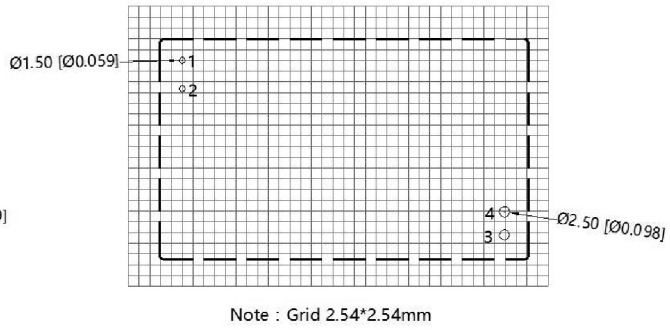
parameter	conditions/description	min	typ	max	units
dimensions	87.00 x 52.00 x 29.50 (board mount) 135.00 x 70.00 x 37.90 (chassis mount) 137.00 x 70.00 x 42.40 (DIN-rail)				mm mm mm
weight	board mount chassis mount DIN-rail		205 290 360		g g g
cooling	free air convection				
case material	black plastic, flame-retardant and heat-resistant (UL94V-0)				

MECHANICAL DRAWING (BOARD MOUNT)

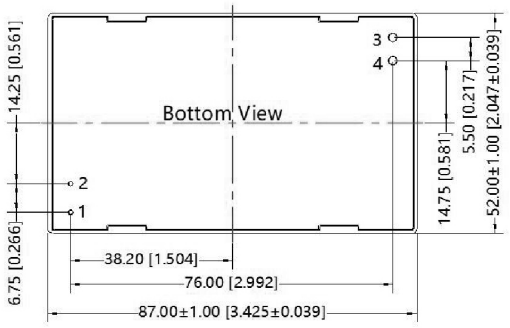
units: mm [inch]
pin diameter tolerance: ± 0.1 [±0.004]

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





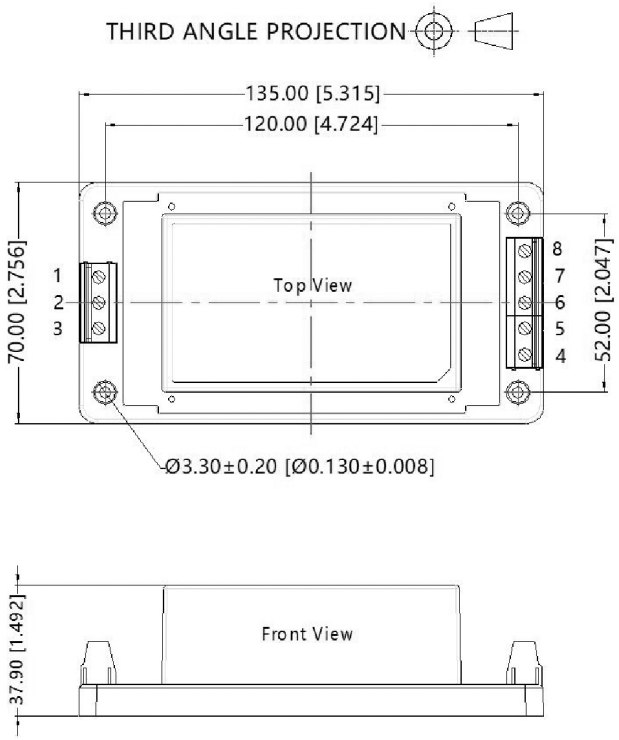
Note : Grid 2.54*2.54mm



MECHANICAL DRAWING (CHASSIS MOUNT)

units: mm [inch]
tolerance: ± 1.00 [±0.040]
wire range: 24 - 12 AWG
tightening torque: 0.4 N·m

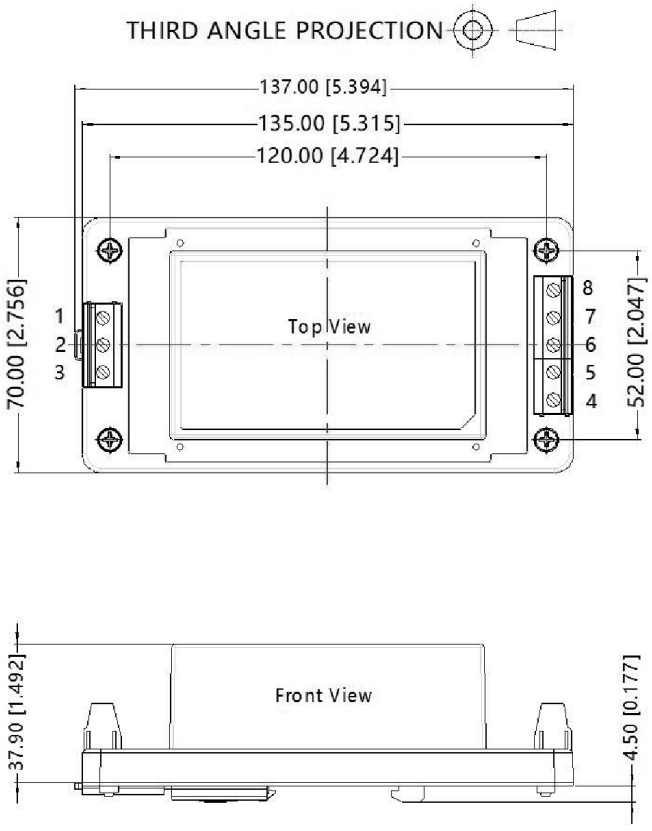
PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	NC
3	AC(N)
4	+Vo
5	-Vo
6	NC
7	NC
8	NC



MECHANICAL DRAWING (DIN-RAIL MOUNT)

units: mm [inch]
tolerance: ± 1.00 [±0.040]
wire range: 24 - 12 AWG
tightening torque: 0.4 N·m
installed on DIN-RAIL TS35

PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	NC
3	AC(N)
4	+Vo
5	-Vo
6	NC
7	NC
8	NC



APPLICATION CIRCUIT

Figure 1

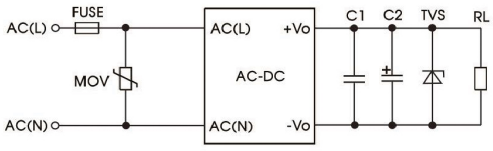


Table 1

Recommended External Circuit Components					
Part no.	C1	C2	FUSE	MOV	TVS
PSK-45-5	1 µF	680 µF	3.15A/250V, slow-blow	S14K350	SMBJ7.0A
PSK-45-12		220 µF			SMBJ20A
PSK-45-15		220 µF			SMBJ20A
PSK-45-24		120 µF			SMBJ30A
PSK-45-48		100 µF			SMBJ64A

EMC RECOMMENDED CIRCUIT

Figure 2

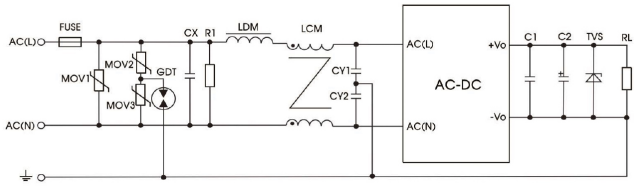


Table 2

Component	Reccomended value
FUSE	3.15A/250V, slow-blow, required
MOV1	S20K300
MOV2/MOV3	S10K300
GDT	EM3600XS
CX	0.22 µF/ 275 Vac
CY1, CY2	1 nF / 400 Vac
R1	1 MΩ / 1 W
LDM	4.7 uH
LCM	2 mH

REVISION HISTORY

rev.	description	date
1.0	initial release	07/13/2020

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

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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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