

date 09/13/2022

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DESCRIPTION: INTERNAL AC-DC POWER SUPPLY SERIES: PSK-15W

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	output voltage	output current	output power	ripple and noise	efficiency
	(Vdc)	max (A)	max (W)	typ (mVp-p)	typ (%)
PSK-15W-3 ^{1,2,3}	3.3	3.0	9.9	50	73
PSK-15W-5 ^{1,2,3}	5	2.8	14	50	76
PSK-15W-9 ^{1,2,3}	9	1.6	15	50	78
PSK-15W-12 ^{1,3}	12	1.25	15	50	80
PSK-15W-15 ^{2,3}	15	1.0	15	50	80
PSK-15W-24 ^{1,2,3}	24	0.625	15	50	83
PSK-15W-48 ^{1,2}	48	0.32	15	50	85

Notes:

Discontinued model - board mount version.
 Discontinued model - chassis mount version.
 Discontinued model - DIN-rail mount version.

PART NUMBER KEY

Base Number Output Voltage Mounting Style blank = board mount T = chassis mount DIN = DIN-rail mount

INPUT

parameter	conditions/description	min	typ	max	units
voltage		85 100		305 430	Vac Vdc
frequency		47		63	Hz
current	at 155 Vac at 230 Vac			.37 .22	A A
inrush current	at 155 Vac at 230 Vac		16 30		A
leakage current	277 Vac			0.25	mA
no load power consumption	at 230 Vac 3.3, 5, 9, 12,15, 24 output 48 output			0.5 0.55	W 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 48 Vdc output models			30,000 16,000 5,500 4,500 4,000 800 220	μF
output voltage accuracy	all load range 3.3 V output all other models		±3 ±2		% %
line regulation	rated load		±0.5		%
load regulation	0~100% load		±1.0		%
hold-up time	at 155 Vac at 230 Vac		5 40		ms ms
temperature coefficient			±0.02		%/°C

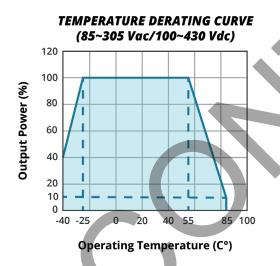
PROTECTIONS

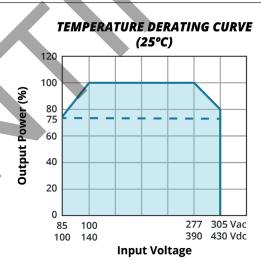
parameter	conditions/description	min	typ	max	units
	3.3 / 5 Vdc output models			7.5	
	9 Vdc output models			15	
over voltage protection	12 / 15 Vdc output models			20	Vdc
3 - F	24 Vdc output models			30	
	48 Vdc output models			60	
over current protection	self recovery	150		300	Io%
short circuit protection	hiccup, continuous, self recovery				

SAFETY & COMPLIANCE

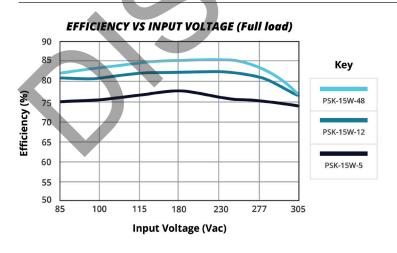
parameter	conditions/description	min	typ	max	units
isolation voltage	input to output	4,000			Vac
safety approvals	IEC 62368/EN 62368/UL 62368				
safety class	Class II				
EMI/EMC	CISPR 32/EN 55032: 2015 Class B				
ESD	IEC/EN 61000-4-2 Contact ±6KV/ Air ±8K	V, perf. Criteria B			
radiated immunity	EC/EN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

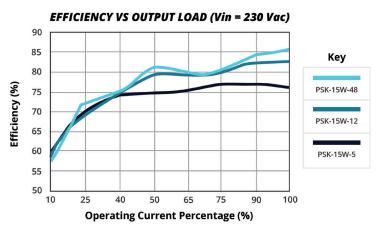
DERATING CURVE





EFFICIENCY CURVES





ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-40		85	°C
storage temperature		-40		105	°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
	62.00 x 45.00 x 22.50 (board mount)				mm
dimensions	96.10 x 54.00 x 31.00 (chassis mount)				mm
	96.10 x 54.00 x 35.60 (DIN-rail)				mm
	board mount		90		g
weight	chassis mount		140		g
	DIN-rail		180		g
cooling	free air convection				
case material	Black plastic, flame-retardant and heat-resista	nt (UL94V-0)			

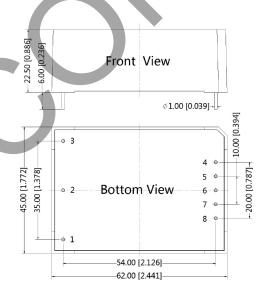
MECHANICAL DRAWING (BOARD MOUNT)

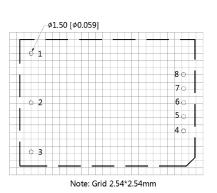
units: mm [inch]

tolerance: ± 0.50 [± 0.020]

pin diameter tolerances: ± 0.10 [± 0.004]

PIN CO	NNECTIONS		
PIN	Function		
1	no pin		
2	AC (N)		
3	AC (L)		
4	+Vo		
5	no pin		
6	no pin		
7	no pin		
8	-Vo		
3 4 5 6 7	AC (L) +Vo no pin no pin no pin		

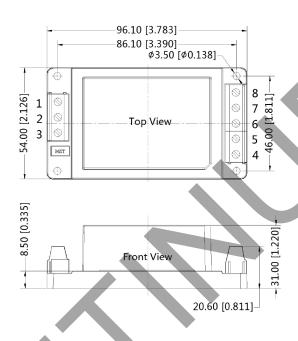




MECHANICAL DRAWING (CHASSIS MOUNT)

units: mm [inch] tolerance: ±1.0 [±0.040] wire range: 24~12 AWG tightening torque: max 0.4 N·m

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

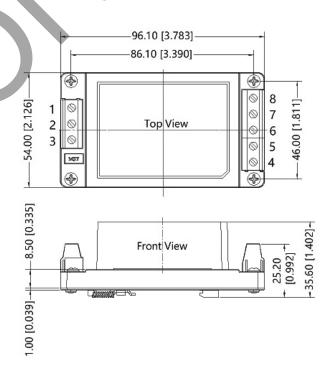


MECHANICAL DRAWING (DIN-RAIL MOUNT)

units: mm [inch]

tolerance: ±1.00 [±0.040] wire range: 24~12 AWG tightening torque: max 0.4 N·m

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



APPLICATION CIRCUIT

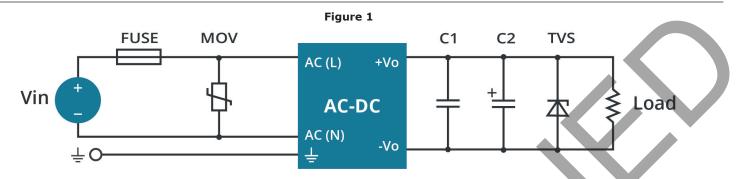


Table 1

	Recommended External Circuit Components						
Vo (Vdc)	FUSE ⁶	MOV ⁶	C1	C2	TVS		
3.3	2A/300V	S14K350	1 μF	680 µF	SMBJ7.0A		
5	2A/300V	S14K350	1 μF	680 µF	SMBJ7.0A		
9	2A/300V	S14K350	1 μF	470 µF	SMBJ12A		
12	2A/300V	S14K350	1 µF	220 µF	SMBJ20A		
15	2A/300V	S14K350	1 µF	220 μF	SMBJ20A		
24	2A/300V	S14K350	1 μF	68 µF	SMBJ30A		
48	2A/300V	S14K350	1 μF	33 µF	SMBJ64A		

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

EMC RECOMMENDED CIRCUIT

Figure 2 FUSE MOV LCM C1 C2 **TVS** AC(L) +Vo Vin Load **AC-DC** AC(N) -Vo

Table 2

Recommended External Circuit Components		
MOV	S14K350	
CY1/CY2	1000 pF/400 Vac	
CX	0.1 μF/310 Vac	
LCM	10 mH	
L1	4.7 μH/ 2 A	
FUSE	2 A/300 V, slow blow, required	

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).

rev.	description	date
1.0	initial release	06/30/2020
1.01	figure and circuit drawings updated	02/24/2021
1.02	din-rail mount mechanical drawing updated	04/28/2021
1.03	UKCA mark added	06/03/2022
1.04	discontinued model PSK-15W-3, PSK-15W-3-T, PSK-15W-3-DIN, PSK-15W-5, PSK-15W-5-T, PSK-15W-DIN, PSK-15W-9, PSK-15W-9-T, PSK-15W-9-DIN, PSK-15W-12, PSK-15W-12-DIN, PSK-15W-15-T, PSK-15W-15-DIN, PSK-15W-24, PSK-15W-24-T, PSK-15W-24-DIN, PSK-15W-48, PSK-15W-48-T	09/13/2022

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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