

date 06/29/2020

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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	output voltage	output current	output power	ripple and noise	efficiency
	(Vdc)	max (A)	max (W)	typ (mVp-p)	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

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

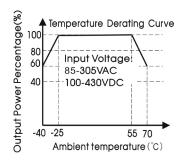
PROTECTIONS

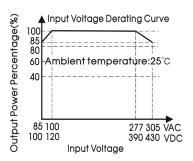
parameter	conditions/description	min	typ	max	units
	3.3 / 5 Vdc output models			9	
	9 Vdc output models			15	
over voltage protection	12 Vdc output models			20	V
	15 Vdc output models			25	
	24 Vdc output models			35	
over current protection	self recovery	110		300	%
short circuit protection	hiccup, continuous,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

SAFETY & COMPLIANCE

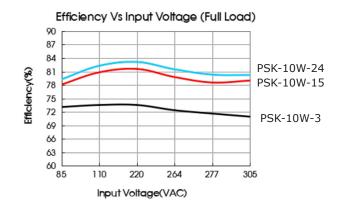
parameter	conditions/description	min	typ	max	units		
isolation voltage	input to output	4,000			Vac		
safety approvals	IEC 62368/EN 62368/UL 62368						
safety class	Class II						
EMI/EMC	CISPR 32/EN 55032: 2015 Class B						
ESD	IEC/EN 61000-4-2: Contact ±6KV/ Air ±8k	IEC/EN 61000-4-2: Contact ±6KV/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

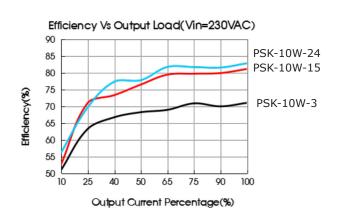
DERATING CURVE





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-re	esistant (UL94V-0)			

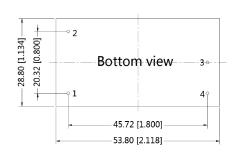
MECHANICAL DRAWING (BOARD MOUNT)

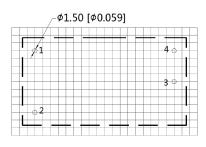
units: mm [inch] tolerance: ±0.50 [±0.020]

pin diameter tolerances: ± 0.10 [± 0.004]

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





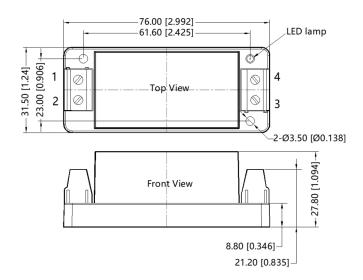


Note: Grid 2.54*2.54mm

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		

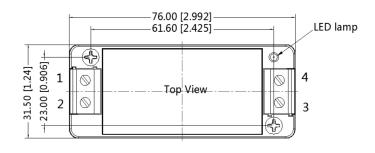


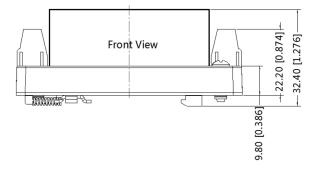
MECHANICAL DRAWING (DIN-RAIL MOUNT)

units: mm [inch]

tolerance: ±1.00 [±0.039] 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

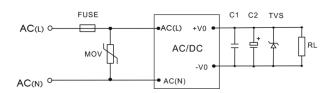


Table 1

	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	

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

EMC RECOMMENDED CIRCUIT

Figure 2

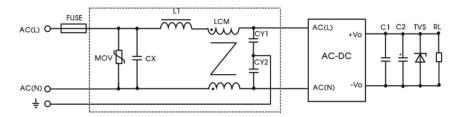


Table 2

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	

Also refer to Table 1. Note:

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).

Additional Resources: Product Page | 3D Model | PCB Footprint

CUI Inc | SERIES: PSK-10W | DESCRIPTION: AC-DC POWER SUPPLY date 06/29/2020 | page 7 of 7

REVISION HISTORY

rev.	description	date
1.0	initial release	06/29/2020

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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