


CUI INC

a bel group

date 12/14/2022

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SERIES: PSK-S2C | DESCRIPTION: AC-DC POWER SUPPLY
FEATURES

- wide input range (85~305 Vac)
- -40~70°C operating range
- over current/short circuit protection
- 4,000 Vac input/output isolation voltage
- CISPR32/EN55032 Class B
- UL/EN/IEC 62368-1 certified



MODEL	output voltage (Vdc)	output current		output power max (W)	ripple and noise ¹ max (mVp-p)	efficiency ² typ (%)
		min (mA)	max (mA)			
PSK-S2C-3	3.3	60	600	2	200	65
PSK-S2C-5*	5	40	400	2	200	70
PSK-S2C-9*	9	22.2	222	2	200	72
PSK-S2C-12	12	16.7	167	2	200	76
PSK-S2C-15	15	13.3	133	2	200	76
PSK-S2C-24	24	8.3	83	2	200	78

Notes:

1. At full load, nominal input, 20 MHz bandwidth oscilloscope, with 1 μ F ceramic and 10 μ F electrolytic capacitors on the output.
2. At 230 Vac input.
3. All specifications are measured at Ta=25°C, humidity <75%, nominal input voltage, and rated output load unless otherwise specified.
4. * Discontinued model.

PART NUMBER KEY
PSK-S2C - XX

Base Number

Output Voltage

INPUT

parameter	conditions/description	min	typ	max	units
voltage		85 120		305 430	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			110 31	mA mA
inrush current	at 115 Vac at 230 Vac		7 14		A A
leakage current				0.25	mA
no load power consumption				0.2	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	3.3, 5 Vdc output models 9, 12 Vdc output models 15 Vdc output models 24 Vdc output models			4,000 2,200 1,000 680	μ F μ F μ F μ F
initial set point accuracy	3.3 Vdc output models all other models		± 6 ± 5		% %
line regulation	at full load		± 2		%
load regulation	from 10~100% load		± 5		%
hold-up time	at 230 Vac		50		ms
temperature coefficient			± 0.04		%/ $^{\circ}$ C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over current protection	auto recovery	120		450	%
short circuit protection	hiccup, continuous, auto recovery				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute, 5 mA	4,000			Vac
safety approvals	UL 62368-1, EN 62368-1, IEC 62368-1				
safety class	Class II				
conducted emissions	CISPR32/EN55032, Class B				
radiated emissions	CISPR32/EN55032, Class B				
ESD	IEC/EN61000-4-2, contact ± 6 kV/ air ± 8 kV, Class B				
radiated immunity	IEC/EN61000-4-3, 10 V/m, Class A				

SAFETY & COMPLIANCE (CONTINUED)

parameter	conditions/description	min	typ	max	units
EFT/burst	IEC/EN61000-4-4, ± 2 kV, Class B (external circuit required, see Figure 2)				
surge	IEC/EN61000-4-5, line to line ± 1 kV/ line to ground ± 2 kV, Class B (external circuit required, see Figure 2)				
conducted immunity	IEC/EN61000-4-6, 10 Vrms, Class A				
voltage dips & interruptions	IEC/EN61000-4-11 Class B, 0%-70%				
MTBF	as per MIL-HDBK-217F at 25°C	300,000			hours
RoHS	yes				

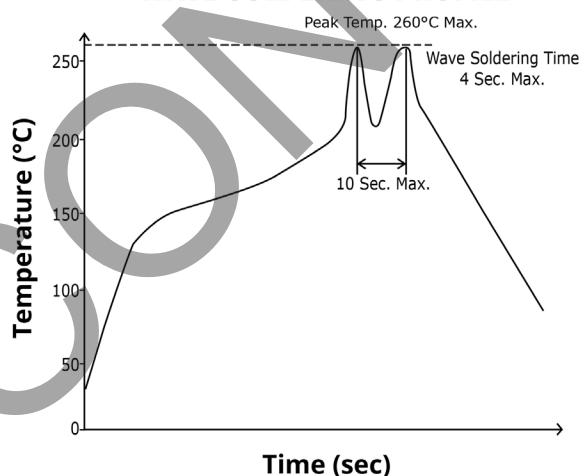
Notes: 4. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

ENVIRONMENTAL

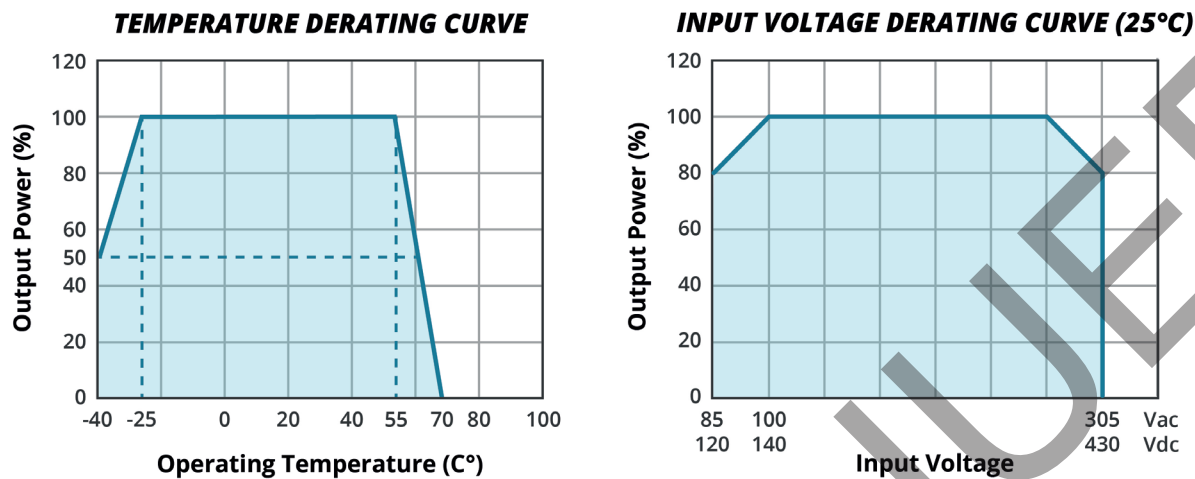
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-40		70	°C
storage temperature		-40		105	°C
storage humidity	non-condensing			95	%

SOLDERABILITY

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

WAVE SOLDERING PROFILE

DERATING CURVES



MECHANICAL

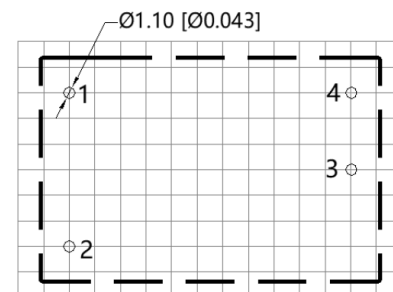
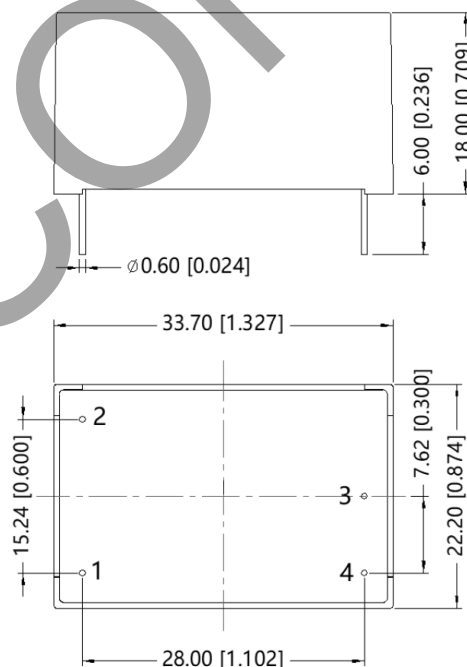
parameter	conditions/description	min	typ	max	units
dimensions	33.70 x 22.20 x 18.00 (1.327 x 0.874 x 0.709 inch)				mm
case material	black flame-retardant and heat-resistant plastic (UL94V-0)				
weight			20		g

MECHANICAL DRAWING

units: mm[inch]

tolerance: ± 0.50 [± 0.020]pin diameter tolerance: ± 0.10 [± 0.004]

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



Note : Grid 2.54*2.54mm

Recommended PCB Layout
Top View

APPLICATION CIRCUIT

Figure 1

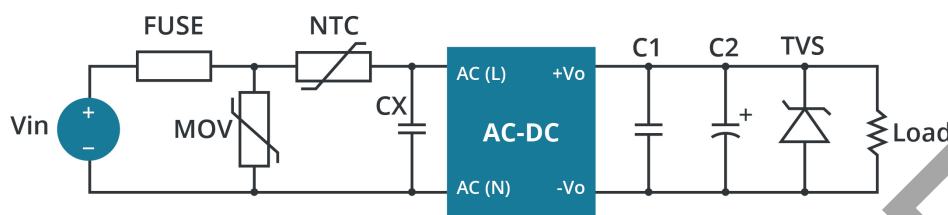


Table 1

Recommended External Circuit Components							
Vo (Vdc)	FUSE	MOV	NTC	CX	C1	C2	TVS
3.3	1A/300V	S14K350	10D-11	0.47 μ F/305 Vac	1 μ F	330 μ F	SMBJ7.0A
5	1A/300V	S14K350	10D-11	0.47 μ F/305 Vac	1 μ F	220 μ F	SMBJ7.0A
9	1A/300V	S14K350	10D-11	0.47 μ F/305 Vac	1 μ F	100 μ F	SMBJ12A
12	1A/300V	S14K350	10D-11	0.47 μ F/305 Vac	1 μ F	100 μ F	SMBJ20A
15	1A/300V	S14K350	10D-11	0.47 μ F/305 Vac	1 μ F	100 μ F	SMBJ20A
24	1A/300V	S14K350	10D-11	0.47 μ F/305 Vac	1 μ F	100 μ F	SMBJ30A

EMC RECOMMENDED CIRCUIT

Figure 2

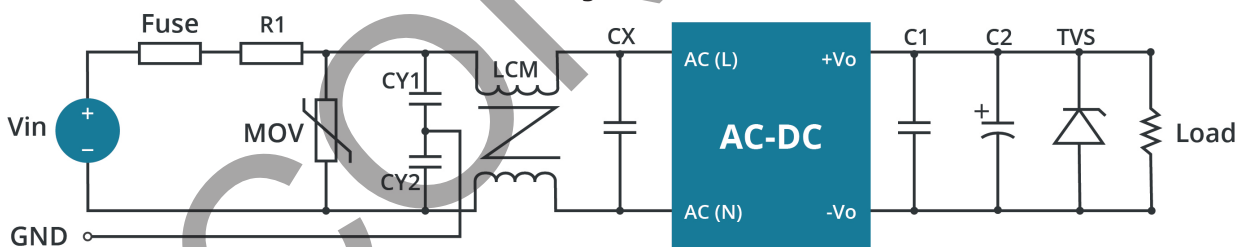


Table 2

Recommended External Circuit Components	
FUSE	1 A/300 V, slow fusing
MOV	S14K350
LCM	10 mH
CX	0.47 μ F/305 Vac
CY1, CY2	2.2 nF/400 Vac
R1	47 Ω /3 W

Note: Also refer to Table 1.

- Notes:
5. C1 is a ceramic capacitor used to filter high frequency noise.
 6. 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%.
 7. TVS is a recommended component to protect post-circuits (if converter fails).

REVISION HISTORY

rev.	description	date
1.0	initial release	03/07/2019
1.01	derating curves and circuit figures updated	01/19/2021
1.02	derating curves updated	01/18/2022
1.03	UKCA mark added	05/27/2022
1.04	discontinued model PSK-S2C-9	09/13/2022
1.05	discontinued model PSK-S2C-5	12/14/2022

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.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.