SERIES: PSK-60D | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

FEATURES

- 50~60 W output power
- certified to IEC/UL/EN 62368
- designed to meet IEC/EN 60335, IEC/EN 62477 and EN61558
- meets Class B emissions and +/- 2kV surge without external circuits
- universal 85-305Vac or 100-430Vdc input voltage
- operating ambient temperature range: -40°C ~ 85°C with derating
- output short circuit, over-current, and over-voltage protection
- input OVC III protection
- 5,000m operating altitude



CE UKCA

MODEL

MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency[2] typ (%)
PSK-60D-5	5	10.0	50	150	89
PSK-60D-12	12	5.0	60	150	91
PSK-60D-15	15	4.0	60	150	90
PSK-60D-24	24	2.5	60	150	90
PSK-60D-48	48	1.25	60	150	91

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, with 1 µF ceramic and 47 µF 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.

PART NUMBER KEY



Please read our datasheet & drawing disclaimer here.

INPUT

parameter	conditions/description	min	typ	max	units
voltage	ac input dc input	85 100		305 430	Vac Vdc
frequency		47		63	Hz
current	115 Vac 230 Vac			1.8 1.0	A A
inrush current	115 Vac 230 Vac		30 60		A A
leakage current	277 Vac/50 Hz			0.25	mA
external input fuse	3.15A/300V, slow-blow, required				
no load power consumption			0.3	0.45	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output model 12 Vdc output model 15 Vdc output model 24 Vdc output model 48 Vdc output model			20,000 5,000 3,000 1,800 470	µF µF µF µF µF
output voltage accuracy			±2		%
line regulation	at full load		±1		%
load regulation	0~100% load		±1.5		%
hold-up time	115 Vac 230 Vac		8 65		ms ms
temperature coefficient			±0.02		%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	latch-off 5 Vdc output 12 Vdc output 15 Vdc output 24 Vdc output 48 Vdc output			 9 16 25 35 60	 Vdc Vdc Vdc Vdc Vdc
over current protection	auto recovery	140			%
short circuit protection	continuous, auto recovery, hiccup				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 min., 5mA max	4,200			Vac
insulation resistance	input to output at 500 Vdc	100			MΩ
safety approvals	certified to 62368: UL, IEC, EN				
safety class	Class II				
conducted emissions	CISPR32/EN55032 Class B				
radiated emissions	CISPR32/EN55032 Class B				
ESD	IEC/EN61000-4-2 Contact ±6KV/Air ±8KV, perf. Criteria A				
radiated immunity	IEC/EN61000-4-3 10V/m, perf. Criteria A				
EFT/burst	IEC/EN61000-4-4 ±2KV, perf. Criteria A IEC/EN61000-4-4 ±4KV (See recommended circuit), perf. Criteria A				
surge	IEC/EN61000-4-5 line to line ±2KV, perf. Criteria A IEC/EN61000-4-5 line to line ±2KV/line to PE ±4KV (See recommended circuit), perf. Criteria A				
conducted immunity	IEC/EN61000-4-6 10Vrms, perf. Criteria A				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
voltage dips and interruption	IEC/EN61000-4-11 0%, 70% perf. Criteria B				
MTBF	MIL-HDBK-217F at 25°C	500,000			hours
RoHS	yes				

ENVIRONMENTAL

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

SOLDERABILITY

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

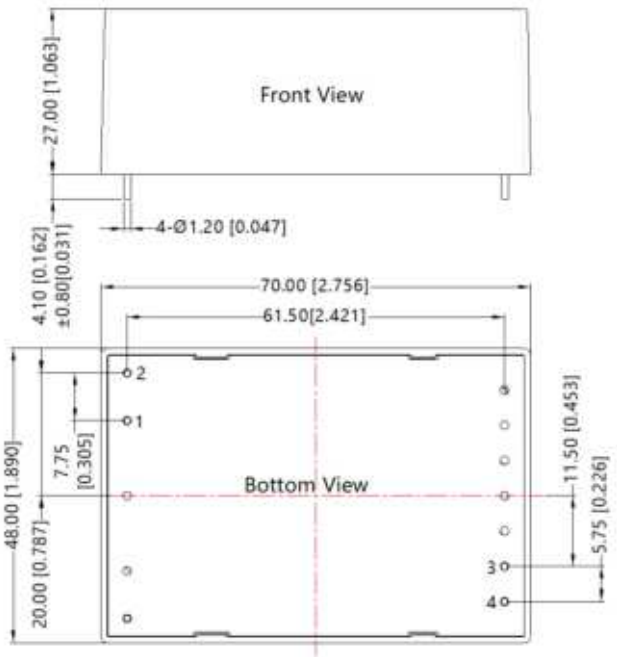
MECHANICAL

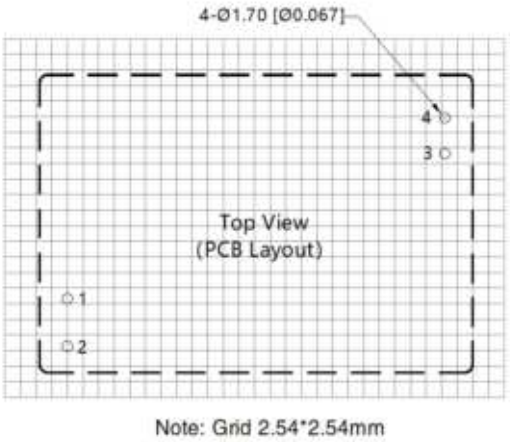
parameter	conditions/description	min	typ	max	units
dimensions	70.00 x 48.00 x 27.00				mm
weight			130		g
case material	black plastic, flame-retardant and heat-resistant (UL94V-0)				
cooling method	natural convection				

MECHANICAL DRAWING

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

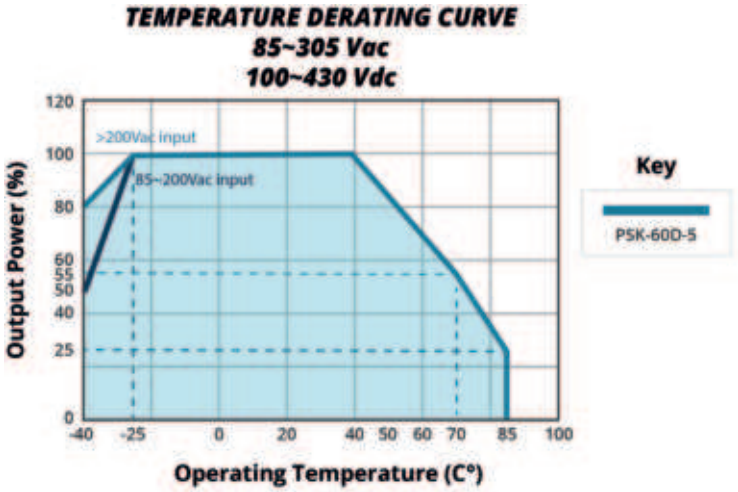
PIN CONNECTIONS	
PIN	Function
1	AC(N)
2	AC(L)
3	-Vo
4	+Vo

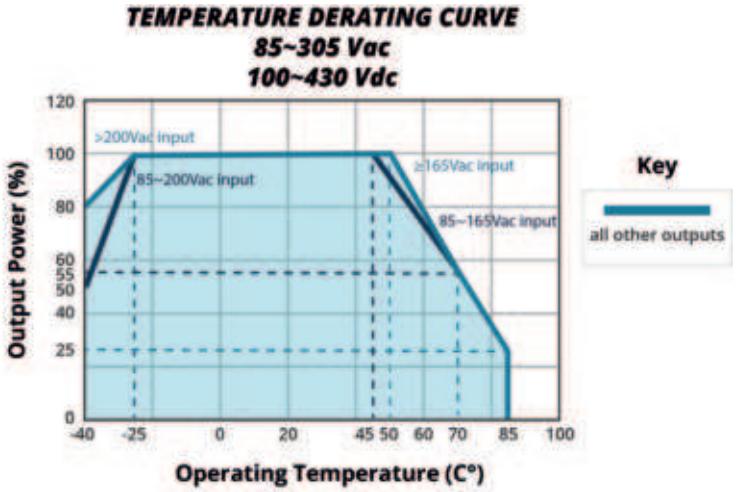


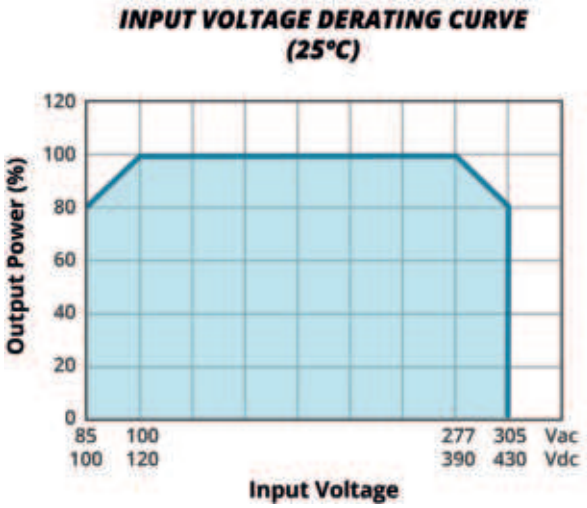


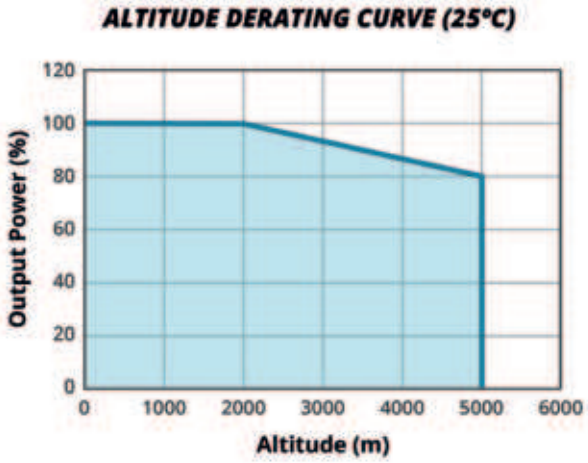
Note: Grid 2.54*2.54mm

DERATING CURVE



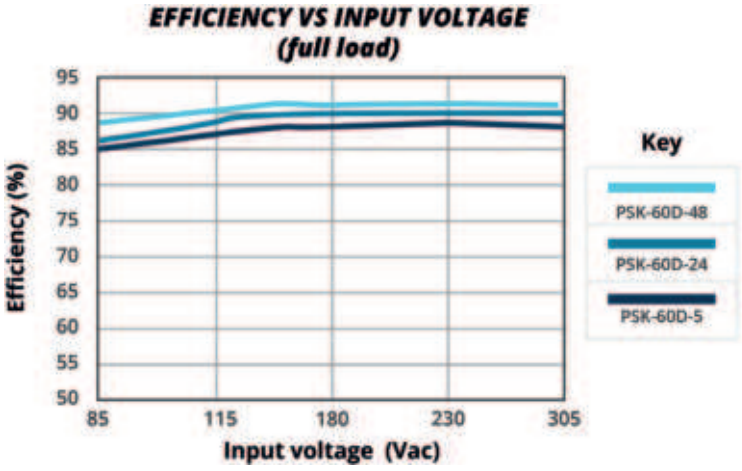


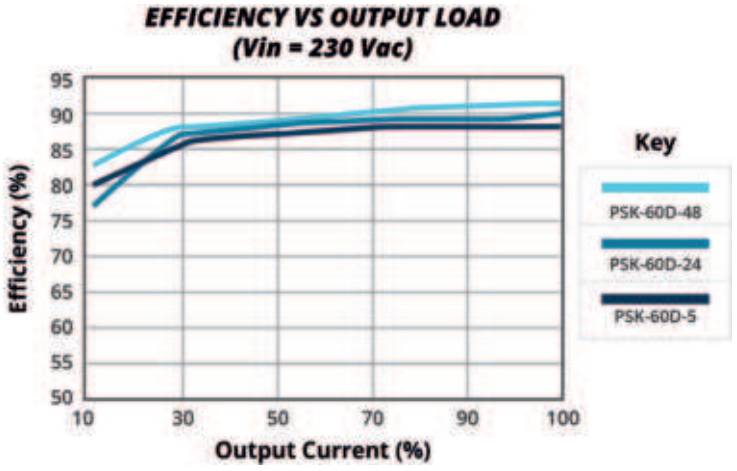




Note: 1. With an AC input between 85~100V/277~305Vac and a DC input between 100~120V/390~430Vdc, the output power must be derated as per temperature derating curves.
2. This product is suitable for applications using natural air cooling; for applications in closed enviroment please consult with CUI.

EFFICIENCY CURVES





APPLICATION DESIGN REFERENCE

Output Filtering Components:
We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2 (refer to manufacture's datasheet). Choose a Capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode to protect the application in case of a converter failure.

Figure 1

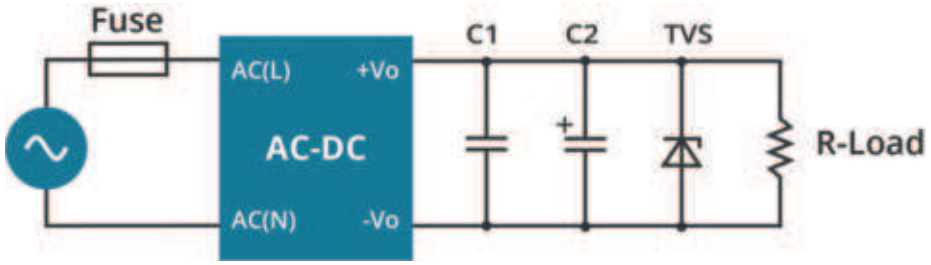
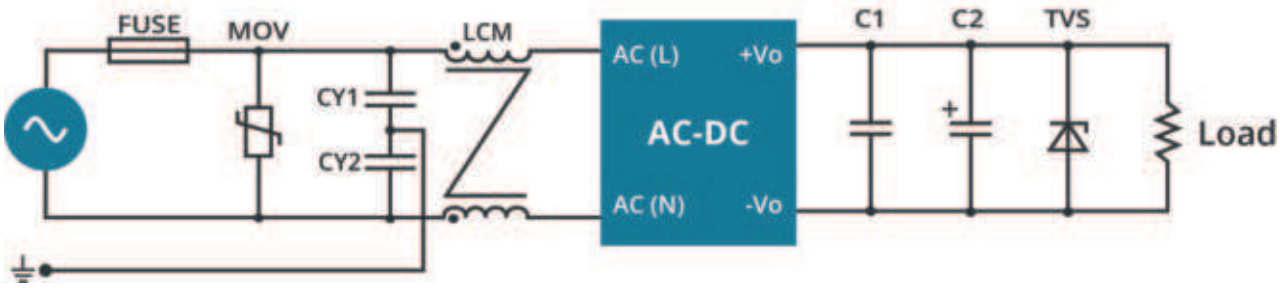


Table 1

Part No.	FUSE	C1	C2	TVS
PSK-60D-5	3.15A/300V slow-blow required	1μF/50V	470μF/16V	SMBJ10A
PSK-60D-12			330μF/25V	SMBJ20A
PSK-60D-15			330μF/25V	SMBJ30A
PSK-60D-24			220μF/35V	SMBJ40A
PSK-60D-48		1μF/100V	100μF/63V	SMBJ60A

EMC RECOMMENDED CIRCUIT

Figure 2



Note: EMC application circuit with higher requirements.

Table 2

Components	Recommended Value
FUSE	3.15A/300V, slow-blow, required
MOV	S14K350
CY1/CY2	1nF/400Vac
LCM	20mH

REVISION HISTORY

rev.	description	date
1.0	initial release	02/06/2023

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

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