SERIES: PSK-25G | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

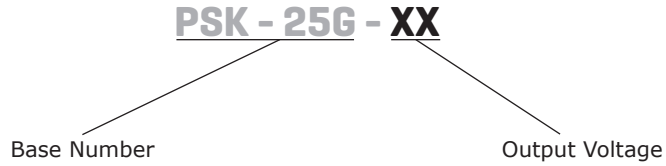
FEATURES

- universal input 85~305 Vac & 100~430 Vdc
- wide operating temperature range (-40~85°C)
- isolation voltage 4,200 Vac
- certified to IEC/EN/UL 62368-1
- Class B emissions (EN55032/CISPR) with application circuit
- Class I
- short circuit, over voltage, and over current protection
- high efficiency up to 88%
- low stand-by power consumption (<0.1 W)
- operating altitude up to 5,000 m
- OVC III (operating altitude 3,000 m)

MODEL	output voltage	output current	output power	ripple and noise[1]	efficiency
	nom (Vdc)	max (A)	max (W)	max (mVp-p)	typ (%)
PSK-25G-3	3.3	4.1	13.5	150	79
PSK-25G-5	5	4.1	20.5	150	83
PSK-25G-9	9	2.5	22.5	150	84
PSK-25G-12	12	2.1	25.2	150	86
PSK-25G-15	15	1.7	25.5	150	86
PSK-25G-24	24	1.1	26.4	150	87
PSK-25G-36	36	0.733	26.4	150	88
PSK-25G-48	48	0.55	26.4	150	88

Notes: 1. Ripple & noise are measured at 20 MHz BW with 47 µF paralleled with a high-frequency 0.47 capacitor across each output, at full load.
2. Unless otherwise specified, all indicators in this manual are measured at Ta=25 °C, humidity<75% RH, nominal input voltage, and output rated load.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage	AC input DC input	85 100	100~277	305 430	Vac Vdc
frequency		47	50~60	63	Hz
current	at 115 Vac at 230 Vac			0.6 0.34	A A
inrush current	at 115 Vac at 230 Vac		20 40		A A
no load power consumption	3.3, 5, 9, 12, 15, 24 Vdc output models all other output models			0.1 0.15	W W
recommended external input fuse	3.15A/300V, slow-blow, required				

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	3.3 Vdc output model 5 Vdc output model 9 Vdc output model 12 Vdc output model 15 Vdc output model 24 Vdc output model 36 Vdc output model 48 Vdc output model			8,000 6,000 4,000 3,000 2,200 1,200 800 500	µF µF µF µF µF µF µF µF
output voltage accuracy	3.3 Vdc output model all other output models		±3 ±2		% %
line regulation	low line to high line		±0.5		%
load regulation	0% ~ 100% load		±1		%
hold-up time	at 115 Vac at 230 Vac		10 60		ms ms
switching frequency			65		kHz
adjustable	via trim		±10		%

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over current protection	auto recovery	110			%
over voltage protection	hiccup			150	%
short circuit protection	auto recovery, hiccup				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, for 5 seconds, 5 mA max			4,200	Vac
safety approvals	certified to 62368-1: IEC, EN, UL				
safety class	Class I				
conducted disturbance	EN55032,CLASS B(See Fig. 2 for recommended circuit)				
radiated disturbances	EN55032,CLASS B(See Fig. 2 for recommended circuit)				
EMC immunity	EN55035 (See Fig. 2 for recommended circuit)				
over voltage category	OVC III				
MTBF	MIL-HDBK-217F at 25°C	300,000			hours
RoHS	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-40		85	°C
storage temperature		-40		105	°C
storage humidity	non-condensing	0		95	%
operating altitude	OVC III			5,000 3,000	m m

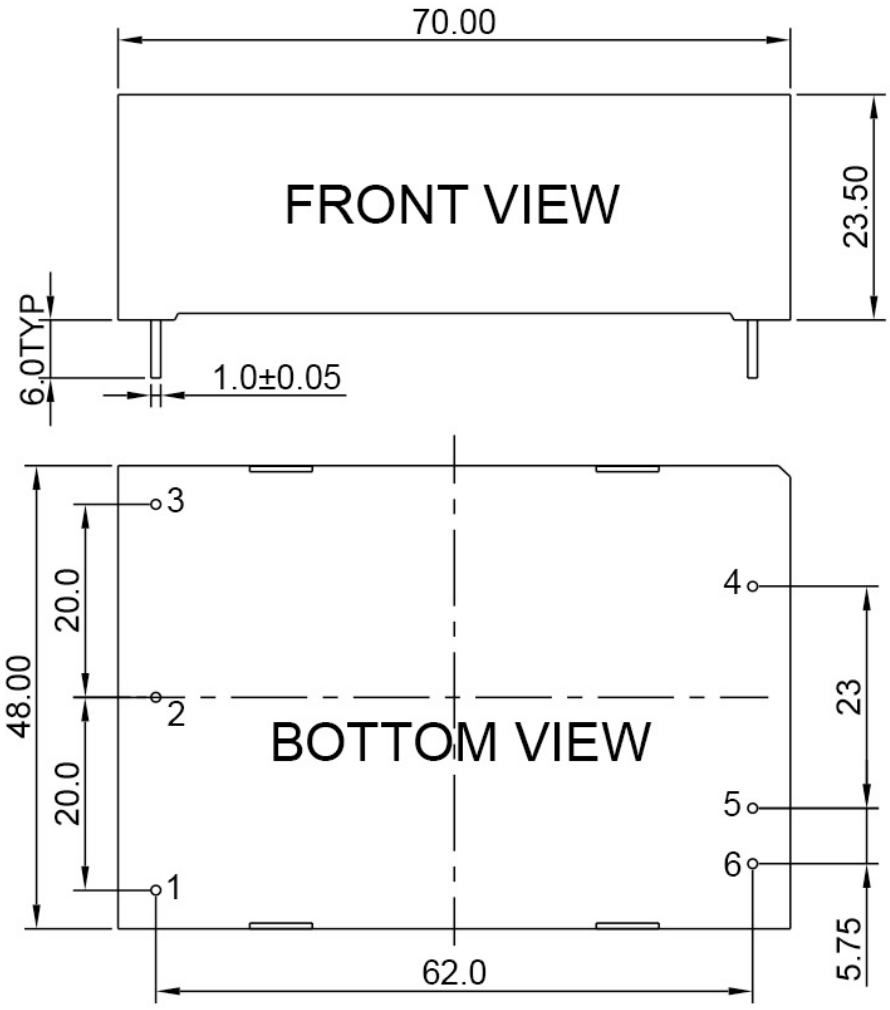
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	70.0 x 48.0 x 23.5 [2.756 x 1.890 x 0.925 inch]				mm
weight			113		g

MECHANICAL DRAWING

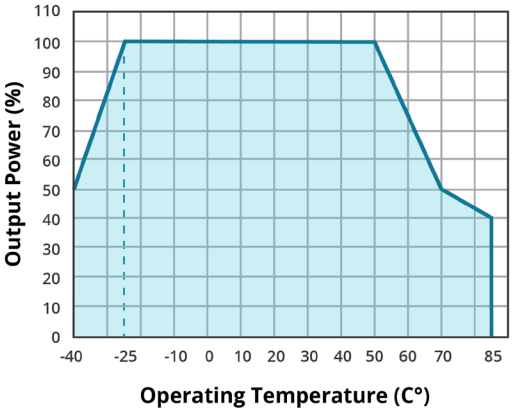
units: inch [mm]
tolerance: ±0.50 mm

PIN CONNECTIONS	
PIN	Function
1	GND
2	AC(N)
3	AC(L)
4	+Vo
5	-Vo
6	Trim

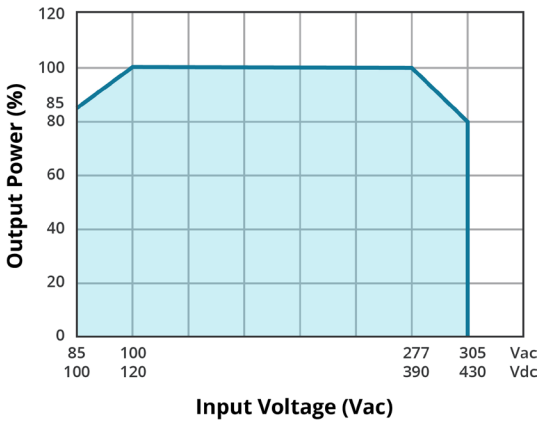


DERATING CURVE

TEMPERATURE DERATING CURVE (natural convection)

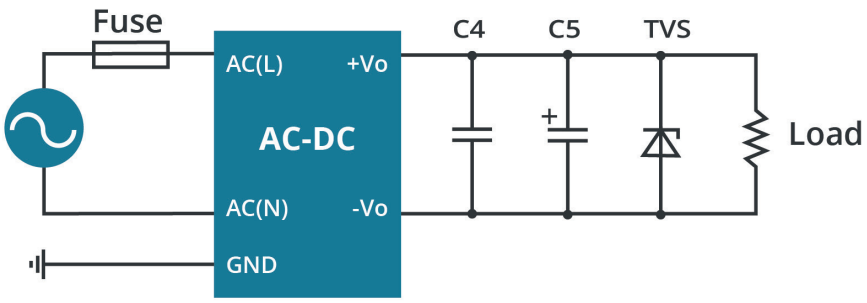


INPUT VOLTAGE DERATING CURVE (25 °C)



APPLICATION DESIGN REFERENCE

Figure 1



EMC RECOMMENDED CIRCUIT

Figure 2

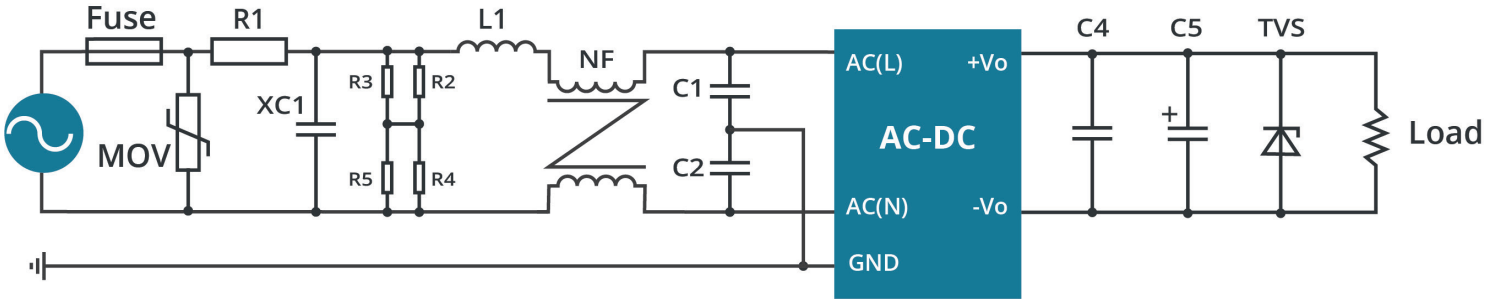


Table 1

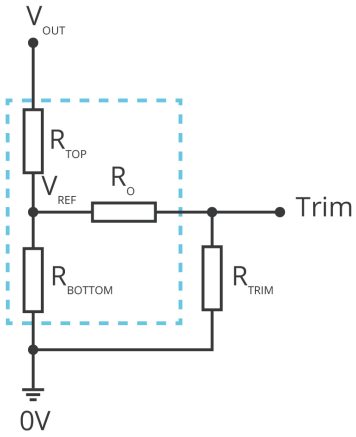
Components	Recommended Value
FUSE	3.15A/300V, slow-blow
MOV	14D561K
XC1	0.33 μF/300 Vac, X2
NF	UU10.5, 15mH
C1	2,200pF/400, Y1
R1	3Ω/3W (wire wound resistor)

Note: R2~R5 is the bleeder resistance of XC1, and the recommended resistance value is 1.5MΩ.

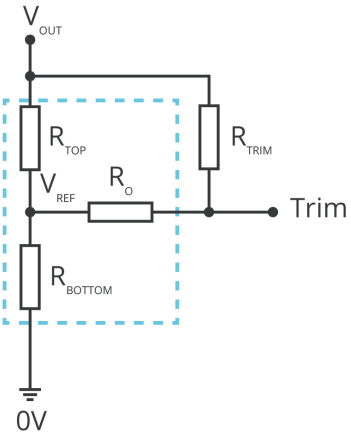
APPLICATION NOTES

Figure 3

Trim up



Trim down



$$R_{TRIM} = \frac{a \cdot R_{BOTTOM}}{R_{BOTTOM} - a} - R_O \qquad a = \frac{V_{REF}}{V_{OUT} - V_{REF}} \cdot R_{TOP}$$

Formula for Trim up

$$R_{TRIM} = \frac{a \cdot R_{TOP}}{R_{TOP} - a} - R_O \qquad a = \frac{V_{OUT} - V_{REF}}{V_{REF}} \cdot R_{BOTTOM}$$

Formula for Trim down

Table 2

V_{OUT}	R_{TOP}	R_{BOTTOM}	R_O	V_{REF}	V_{OT}
(Vdc)	(kΩ)	(kΩ)	(kΩ)	(V)	(V)
3.3	7.5	4.42	1	1.24	Output voltage after regulation, variation ≤±10%
5	10.2	10.0	1	2.5	
9	17.8	6.8	1	2.5	
12	24.0	6.28	1	2.5	
15	24.0	4.75	1	2.5	
24	24.0	2.76	1	2.5	
36	36.0	2.67	1	2.5	
48	36.0	1.96	1	2.5	

Note: Value for R_{TOP}, R_{BOTTOM}, R_O, and V_{REF} refer to Table 2 (fixed internal values).
R_{TRIM}: Trim resistance
a: User-defined parameter, no actual meanings
V_{NOM}: Nominal output voltage
V_{OUT}: Target output voltage

REVISION HISTORY

rev.	description	date
1.0	initial release	01/27/2026

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

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