SERIES: PBO-5F | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

- compact size, industrial design
- available in straight and bent pin formats
- IEC/EN/UL 62368-1 certified
- wide operating temperature -40°C ~ 85°C (with derating)
- wide input voltage range 85~305 Vac / 70~430 Vdc
- high efficiency, up to 81 %
- short-circuit and over current protection
- no-load power consumtion (<0.1W)
- open frame SIP design with bent pin option
- flexible implementations to power a wide array of applications
- MTBF >2,700,000 hours

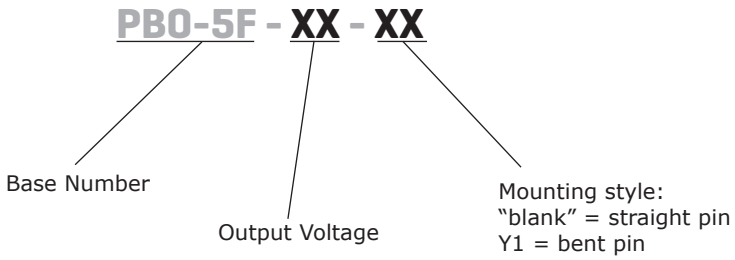


MODEL

MODEL	output voltage (Vdc)	output current max (mA)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency typ (%)
PBO-5F-3	3.3	1,000	3.3	150	69
PBO-5F-5	5	1,000	5.0	150	76
PBO-5F-9	9	560	5.0	150	77
PBO-5F-12	12	420	5.0	150	79
PBO-5F-15	15	340	5.0	150	79
PBO-5F-24	24	210	5.0	150	81

Notes: 1. Measured at nominal input with 20 MHz bandwidth oscilloscope.
2. 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 70	100~277	305 430	Vac Vdc
frequency		47	50~60	63	Hz
current	at 115 Vac at 230 Vac			0.20 0.10	A A
inrush current	at 115 Vac at 230 Vac		20 40		A A
no load power consumption	at 230 Vac		0.1	0.15	W

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			2,200 1,500 680 470 330 100	µF µF µF µF µF µF
initial set point accuracy	from 10~100% load 3.3 Vdc output model all other output models		 ±8 ±5		 % %
line regulation	at rated load		±1.5		%
load regulation	from 10~100% load		±3		%
switching frequency			65		kHz

PROTECTIONS

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

SAFETY & COMPLIANCE

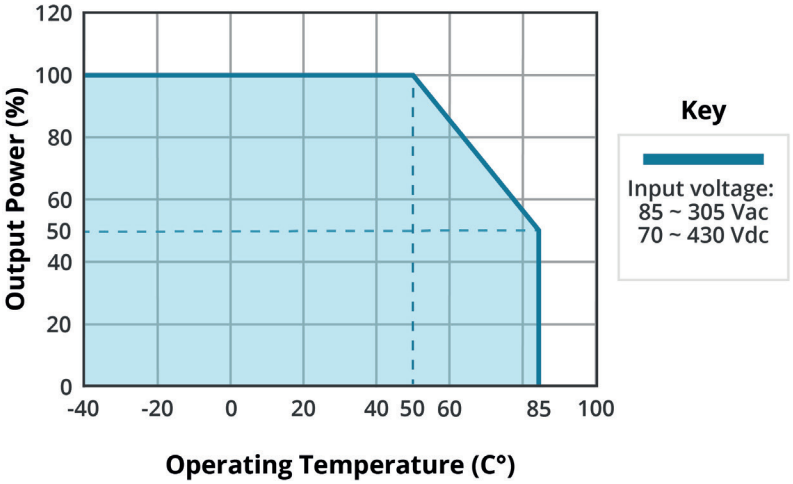
parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 5 seconds, 5mA max	3,600 5,000			Vac Vdc
safety approvals	certified to 62368-1: IEC, EN, UL				
conducted emissions	EN55032, CLASS B (see Fig. 2 for recommended circuit)				
radiated emissions	EN55032, CLASS B (see Fig. 2 for recommended circuit)				
EMC immunity	EN55035 (see Fig. 2 for recommended circuit)				
MTBF	as per MIL-HDBK-217F at 50°C ambient temperature	2,700,000			hours
RoHS	yes				

ENVIRONMENTAL

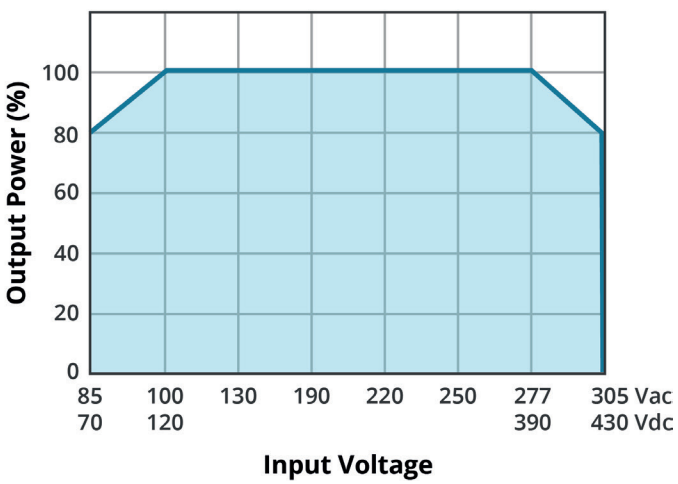
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-40		85	°C
storage temperature		-40		105	°C
operating humidity		-		95	%

DERATING CURVES

TEMPERATURE DERATING CURVE



INPUT VOLTAGE DERATING CURVE (25°C)

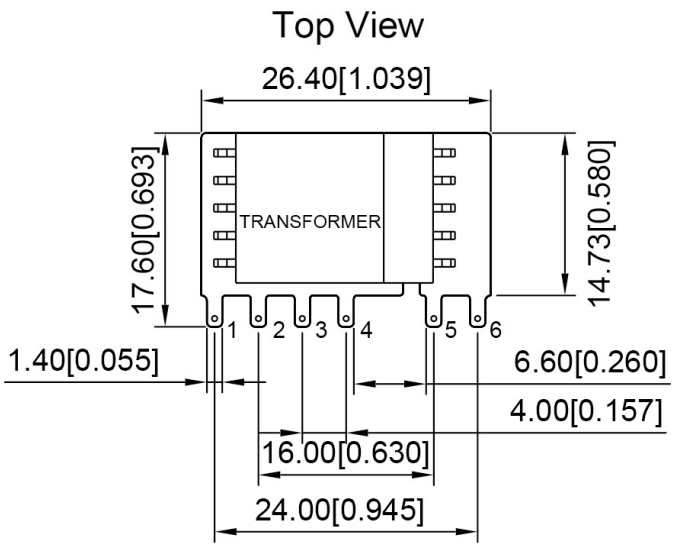


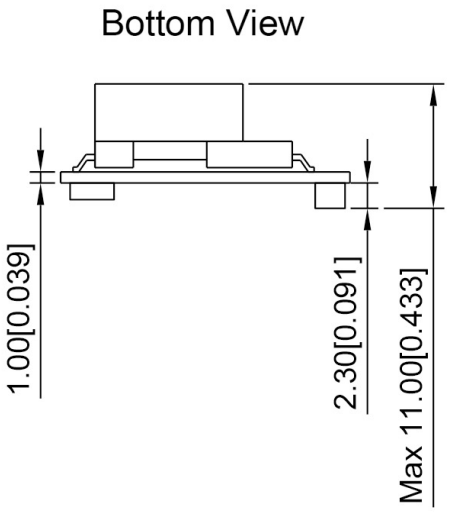
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	straight pin: 26.40 x 14.73 x 11.00 [1.039 x 0.578 x 0.433 inch] bent pin: 27.84 x 11.60 x 17.60 [1.096 x 0.457 x 0.693 inch]				mm mm
cooling	natural convection				

MECHANICAL DRAWING

Straight pin
units: mm [inch]
pin section tolerance: ±0.15[±0.006]
tolerance: ±1.0[±0.040]



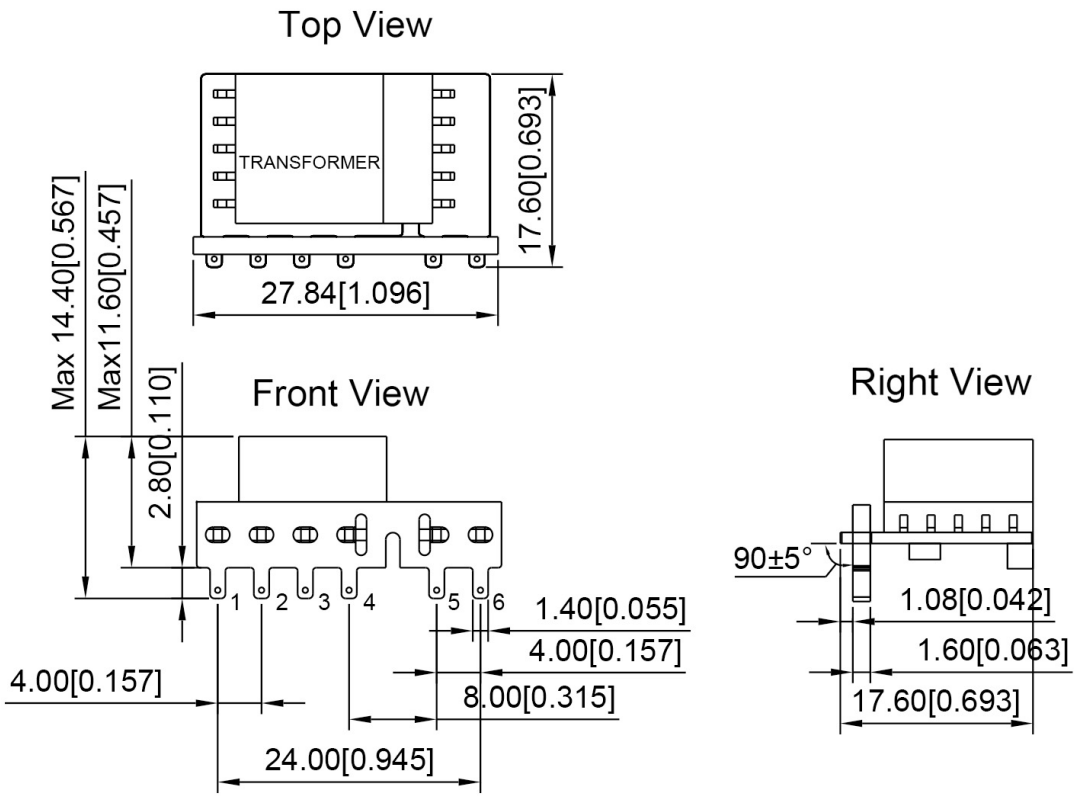


PIN CONNECTIONS	
PIN	Function
1	AC (L)
2	AC (N)
3	+V(CAP)
4	-V(CAP)
5	-Vo
6	+Vo

MECHANICAL DRAWING (CONTINUED)

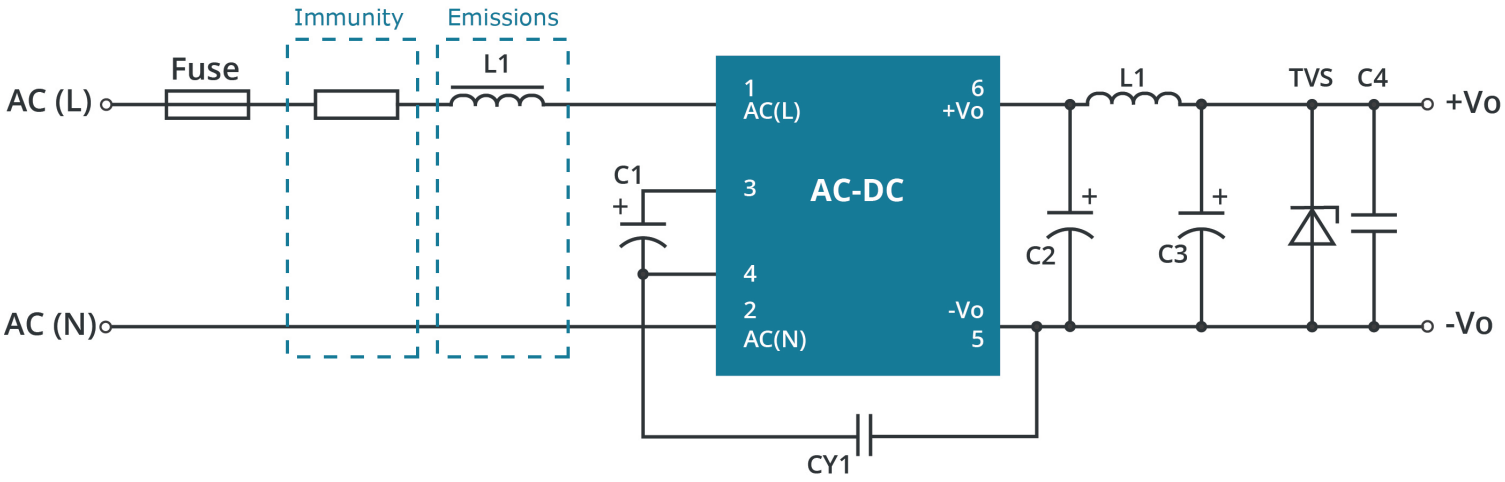
Bent pin
units: mm [inch]
pin section tolerance: ±0.15[±0.006]
tolerance: ±1.0[±0.040]

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



APPLICATION DESIGN REFERENCE

Figure 1



EMC RECOMMENDED CIRCUIT

Figure 2

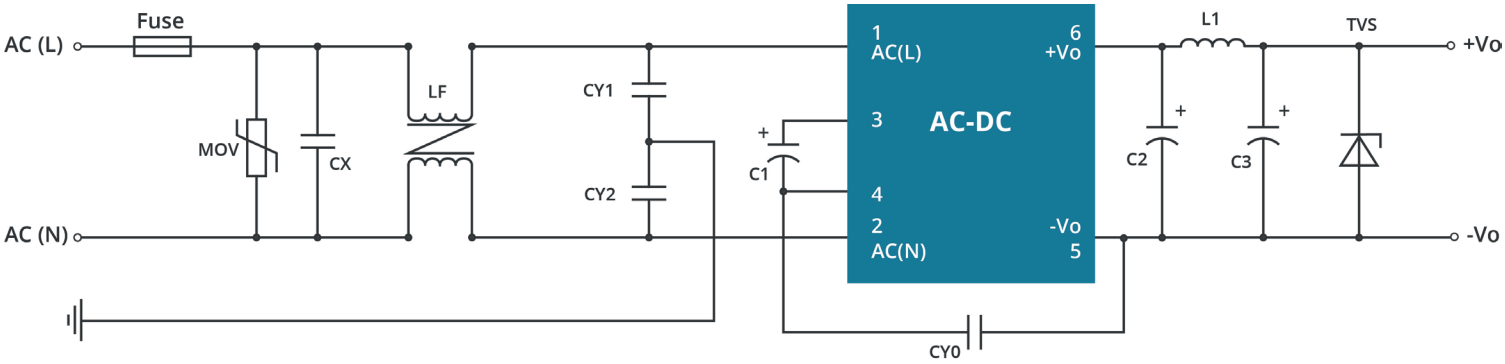


Table 1

Additional component selection guide						
	3.3	5	9	12	15	24
FUSE	300V/2A					
MOV	14D561K					
LF	UU9.8,30mH min					
CX	0.1μF/310V					
CY0	1000pF/400V					
CY1, CY2	470pF/250V					
C1	15μF/450V					
C2	820μF/10V (solid-state capacitor)		470μF/25V (solid-state capacitor)			330μF/35V (solid-state capacitor)
C3	470μF/10V		220μF/35V			
L1	2.2μH					
TVS	SMBJ7.0A	SMBJ7.0A	SMBJ12A	SMBJ20A	SMBJ20A	SMBJ30A

REVISION HISTORY

rev.	description	date
1.0	initial release	09/18/2025

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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