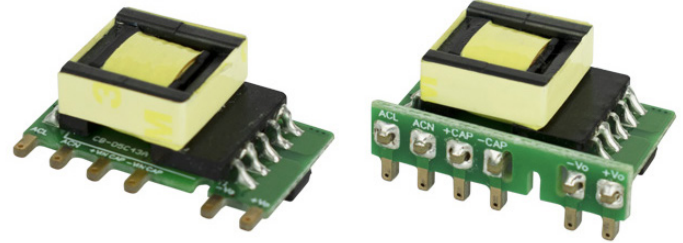


SERIES: PBO-5F | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

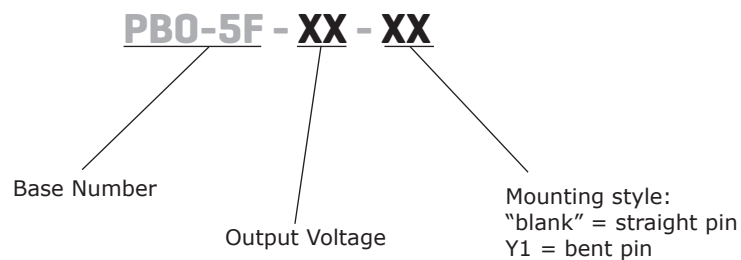
- compact size, industrial design
- available in straight and bent pin formats
- IEC/EN/UL 62368-1 certified
- wide operating temperature -40°C ~ 85°C (with derating)
- wide input voltage range 85~305 Vac / 70~430 Vdc
- high efficiency, up to 81 %
- short-circuit and over current protection
- no-load power consumption (<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	output voltage	output current	output power	ripple and noise ¹	efficiency
	(Vdc)	max (mA)	max (W)	max (mVp-p)	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



INPUT

parameter	conditions/description	min	typ	max	units
voltage	AC input	85	100~277	305	Vac
	DC input	70		430	Vdc
frequency		47	50~60	63	Hz
current	at 115 Vac			0.20	A
	at 230 Vac			0.10	A
inrush current	at 115 Vac		20		A
	at 230 Vac		40		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			2,200	μF
	5 Vdc output model			1,500	μF
	9 Vdc output model			680	μF
	12 Vdc output model			470	μF
	15 Vdc output model			330	μF
	24 Vdc output model			100	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

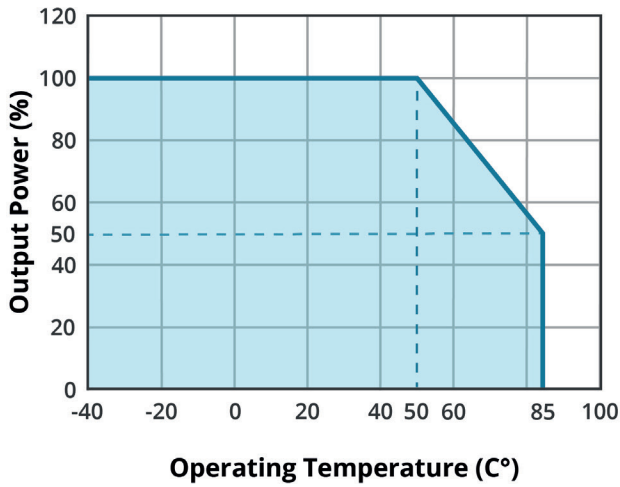
parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 5 seconds, 5mA max	3,600 5,000			Vac Vdc
safety approvals	certified to 62368-1: IEC, EN, UL				
conducted emissions	EN55032, CLASS B (see Fig. 2 for recommended circuit)				
radiated emissions	EN55032, CLASS B (see 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	%

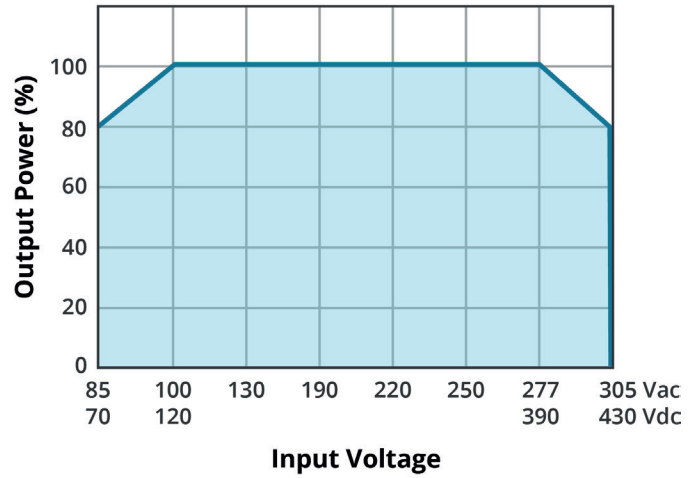
DERATING CURVES

TEMPERATURE DERATING CURVE



Key
 Input voltage:
 85 ~ 305 Vac
 70 ~ 430 Vdc

INPUT VOLTAGE DERATING CURVE (25°C)



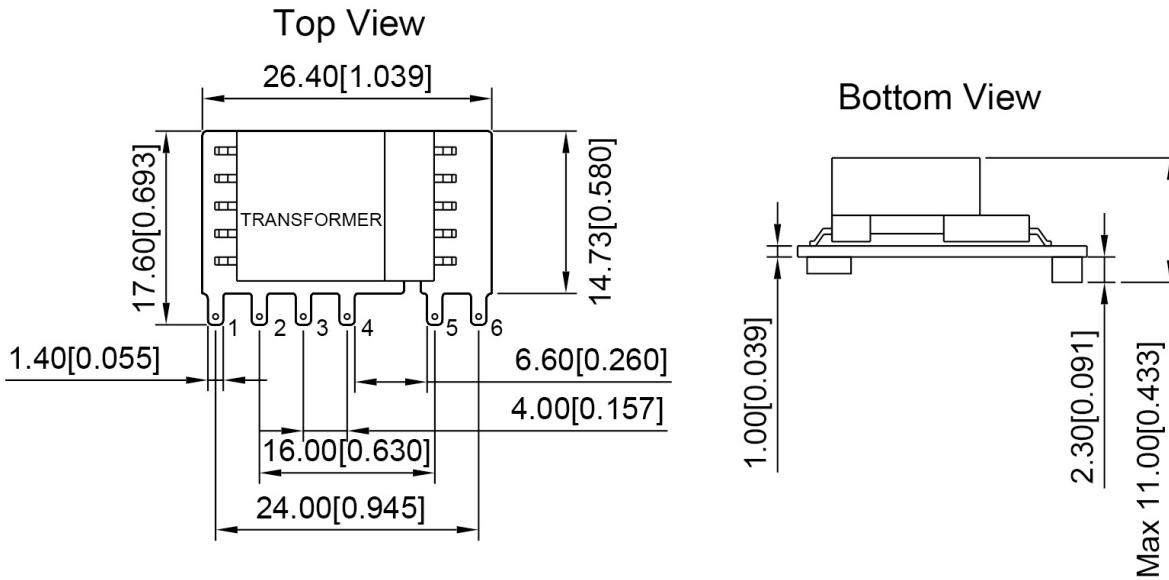
MECHANICAL

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
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)

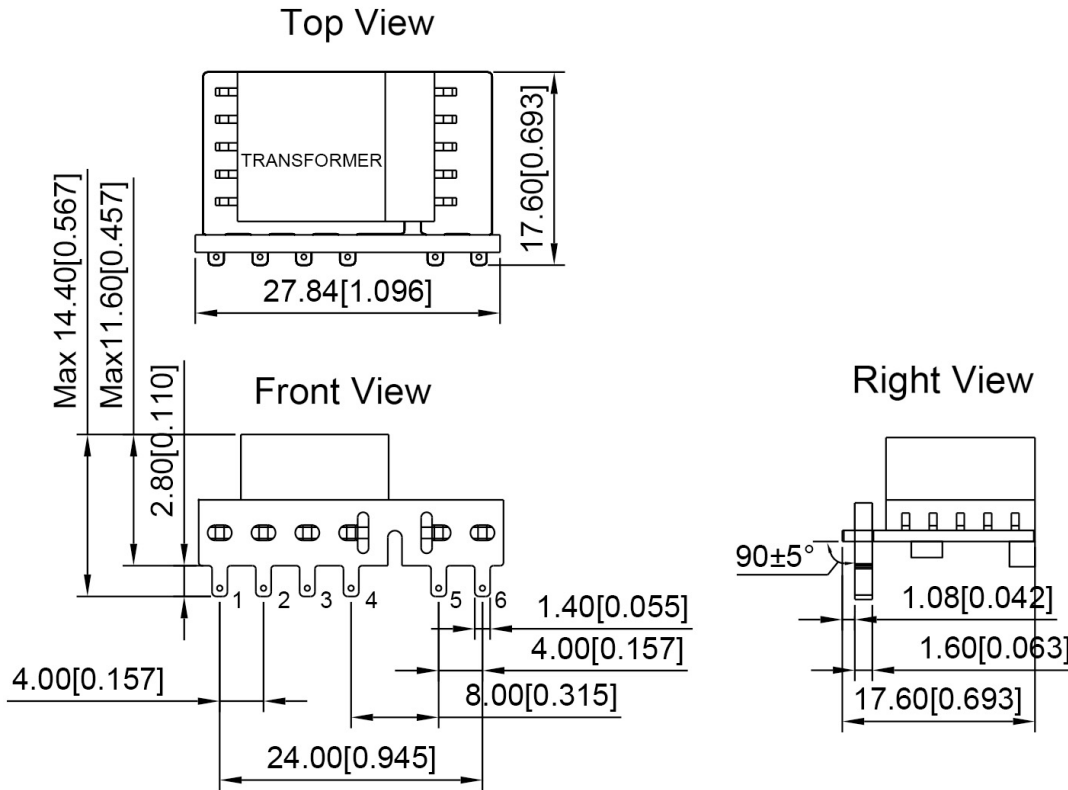
Bent pin

units: mm [inch]

pin section tolerance: $\pm 0.15[\pm 0.006]$

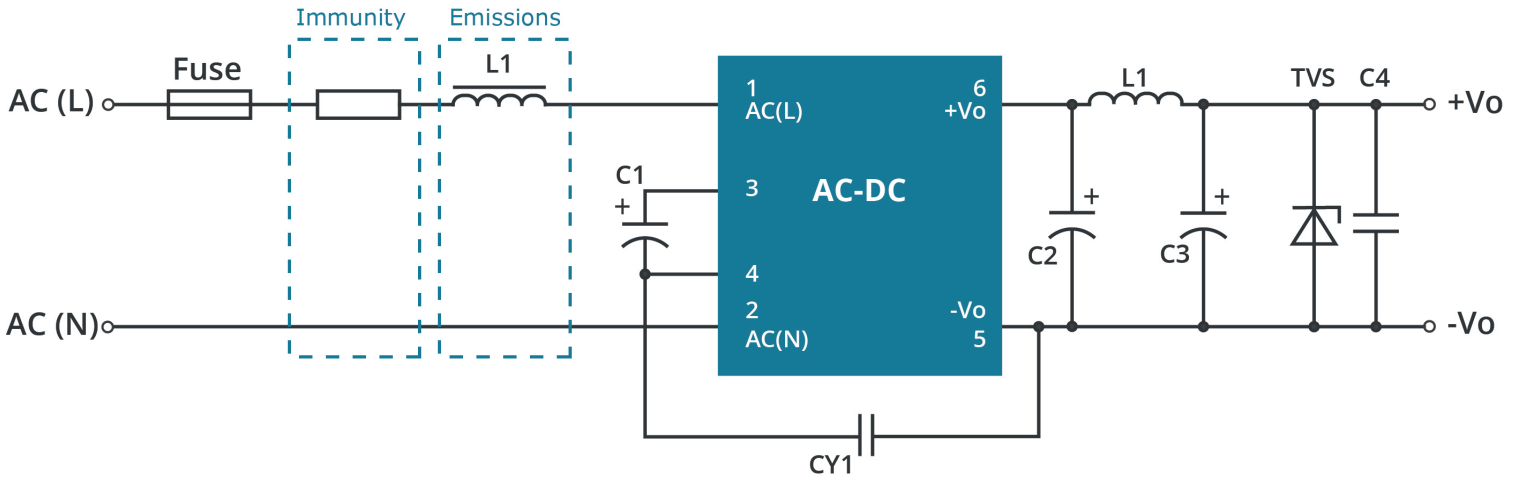
tolerance: $\pm 1.0[\pm 0.040]$

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

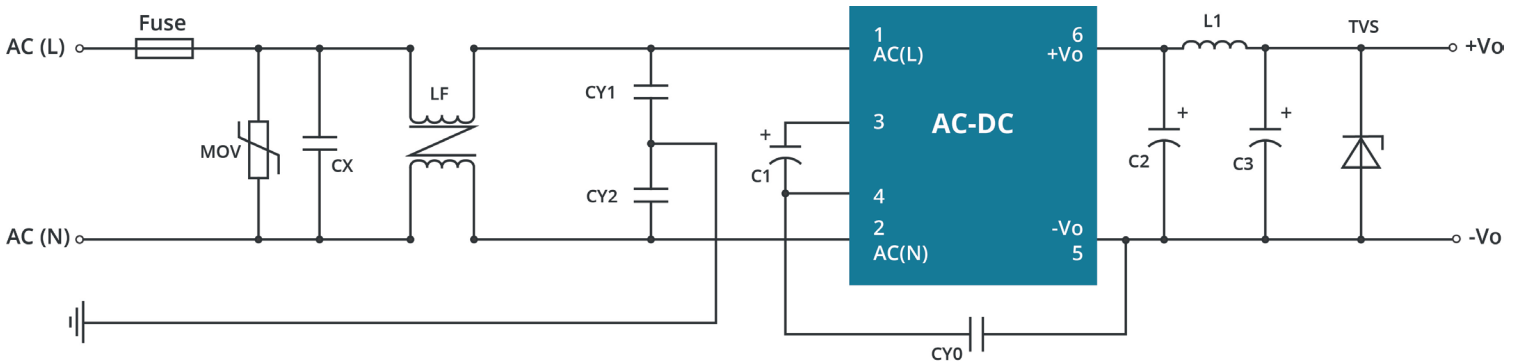


Table 1

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