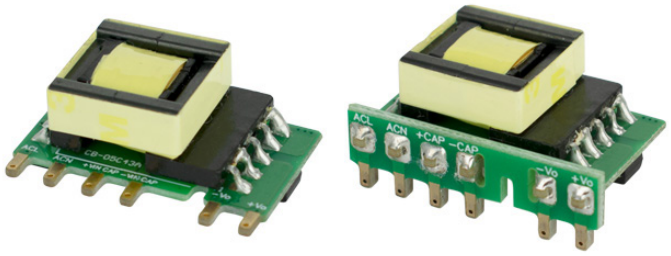
SERIES: PBO-3F | **DESCRIPTION:** AC-DC POWER SUPPLY

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 80 %
- 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

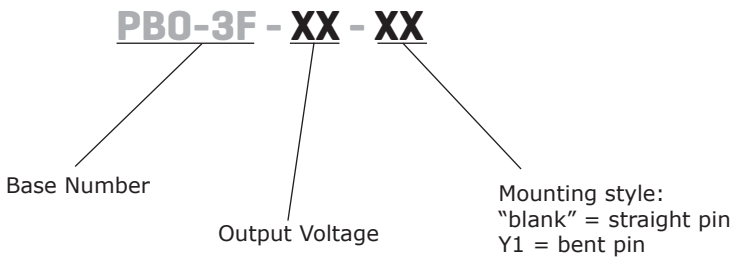


MODEL

MODEL	output voltage (Vdc)	output current max (mA)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency typ (%)
PBO-3F-3	3.3	600	1.98	150	67
PBO-3F-5	5	600	3.0	150	72
PBO-3F-9	9	333	3.0	150	76
PBO-3F-12	12	250	3.0	150	77
PBO-3F-15	15	200	3.0	150	78
PBO-3F-24	24	125	3.0	150	80

Notes: 1. Measured at nominal input with 20 MHz bandwidth oscilloscope.

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			0.12 0.06	A A
inrush current	at 115 Vac at 230 Vac		13 23		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 & 12 Vdc output model 15 Vdc output model 24 Vdc output model			820 680 470 330 220	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

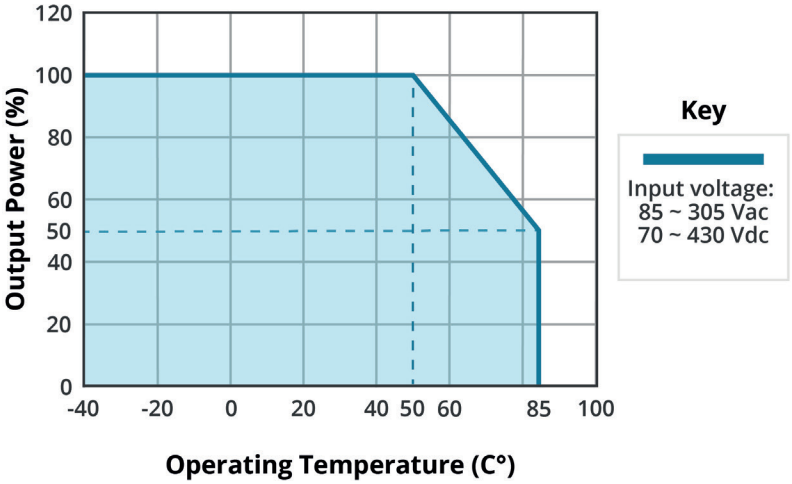
parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 5 seconds, 5mA max	3,600 5,000			Vac Vdc
safety approvals	certified to 62368-1: IEC, EN, UL				
conducted emissions	EN55032, CLASS B (see Fig. 2 for recommended circuit)				
radiated emissions	EN55032, CLASS B (see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

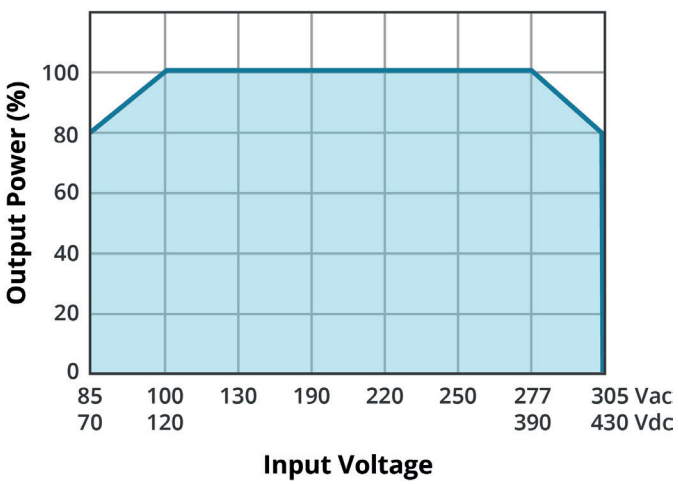
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-40		85	°C
storage temperature		-40		105	°C
operating humidity		-		95	%

DERATING CURVES

TEMPERATURE DERATING CURVE



INPUT VOLTAGE DERATING CURVE (25°C)

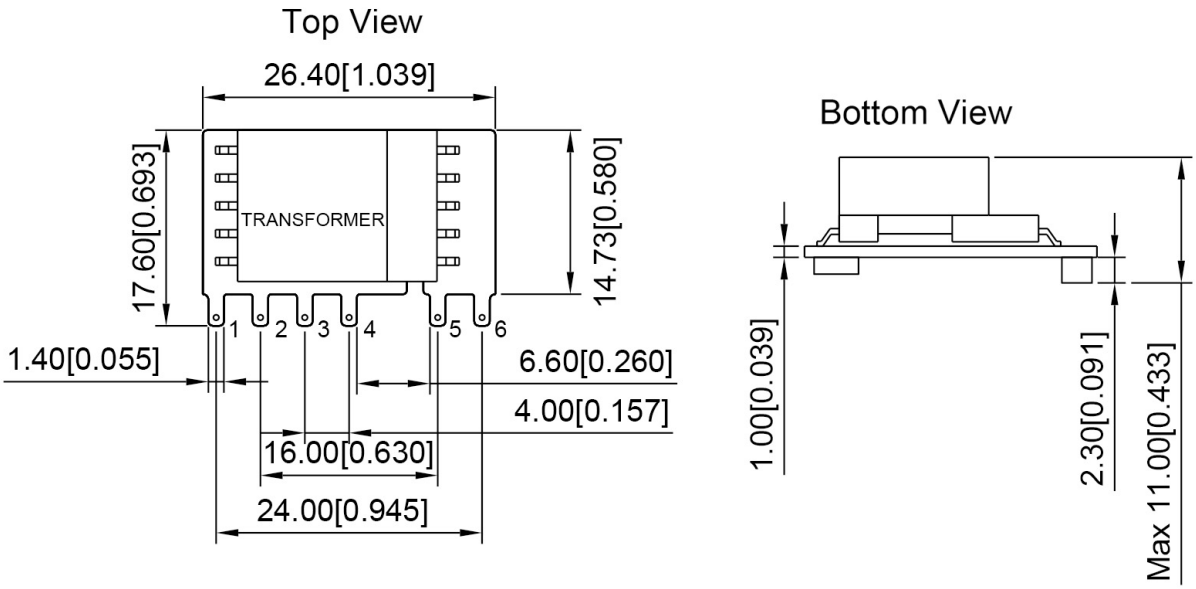


MECHANICAL

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
weight	straight pin bent pin		5.5 6.3		g g
cooling	natural convection				

MECHANICAL DRAWING

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

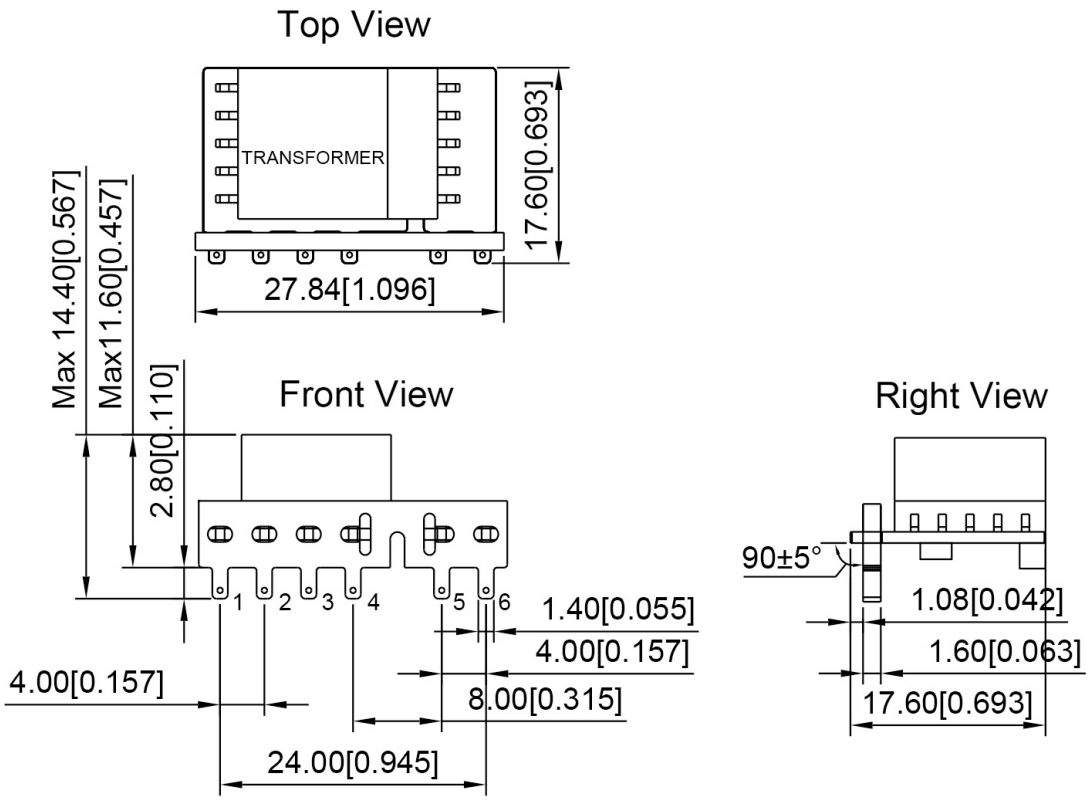


PIN CONNECTIONS	
PIN	Function
1	AC (L)
2	AC (N)
3	+V(CAP)
4	-V(CAP)
5	-Vo
6	+Vo

MECHANICAL DRAWING (CONTINUED)

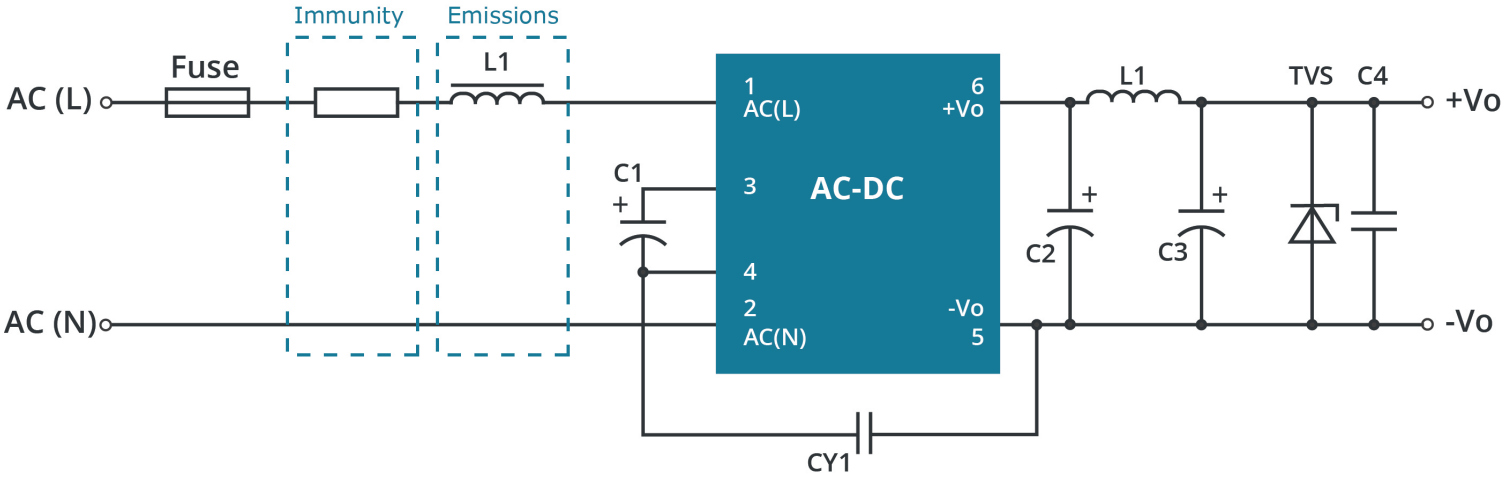
Bent pin
units: mm [inch]
pin section tolerance: ±0.15[±0.006]
tolerance: ±1.0[±0.040]

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

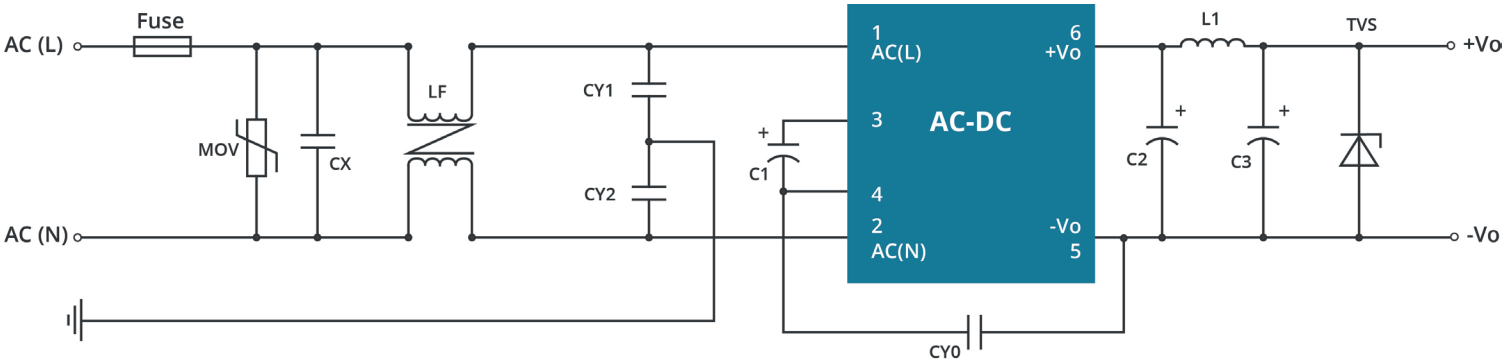


Table 1

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	10μF/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	10/24/2025

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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