

# Series 5AC

5W Isolated Regulated AC-DC Power Supply



## PRODUCT OVERVIEW

The 5AC series is a switching AC-DC power supply available in a low profile 0.500" height and in single and dual outputs. They offer excellent line and load regulation and is continuously protected against short circuits. The highly reliable module is capable of up to 5W power in a wide ambient temperature range -25°C to +70°C. These modules are the perfect design choice for your most stringent industrial applications.



## FEATURES

- Up to 5W output power
- Single, dual and triple outputs
- Low profile size - 2.3" x 2.2" x 0.5"
- 1200V input/output isolation
- Through hole mounting
- Continuous short-circuit protection
- Two input voltage ranges
- Fixed operating frequency
- No external components required

Contact Pico for part number of available options:

- Expanded operating temp: -55°C to +85°C
- Select screening per MIL-STD-883:
  - Stabilization Bake
  - Temperature Cycle
  - Burn-In
- Special Input Voltage, Output Voltage, or Output Power
- Low Isolation Capacitance

H	5AC	24	S
INPUT VOLTAGE RANGE	SERIES NAME	NOM. OUTPUT VOLTAGE	NUMBER OF OUTPUTS
BLANK = 90 - 130VAC H = 170 - 240 VAC	5AC	5 = 5V 12 = 12V 15 = 15V 24 = 24V	S = SINGLE D = DUAL

**MODEL LIST****SINGLE OUTPUT**

Pico Part Number		Output Voltage [VDC]	Output Current		Output Power [W]	Load Regulation 10-100% <sup>(1)</sup> [%] max	Output Voltage Tolerance <sup>(2)</sup> [±%]	Efficiency <sup>(2)</sup> [%] typ.
90-130 VAC Input	170-240 VAC Input		Min. <sup>(1)</sup> [A]	Max. [A]				
5AC5S	H5AC5S	5	100	1000	5	0.5	0.5	72
5AC12S	H5AC12S	12	41.7	417	5	0.5	0.5	75
5AC15S	H5AC15S	15	33.3	333	5	0.5	0.5	75
5AC24S	H5AC24S	24	20.8	208	5	0.5	0.5	76

Note 1: Maintain minimum 10% of rated load to prevent a voltage surge.

Note 2: Tested at nominal input voltage and full output load.

**DUAL OUTPUT**

Pico Part Number		Output Voltage [±VDC]	Output Current Per Output		Output Power Per Output [±W]	Load Regulation 10-100% <sup>(1)</sup> [%] max	Output Voltage Tolerance <sup>(2)</sup> [±%]	Efficiency <sup>(2)</sup> [%] typ.
90-130 VAC Input	170-240 VAC Input		Min. <sup>(1)</sup> [±A]	Max. [±A]				
5AC5D	H5AC5D	5	50	500	2.5	0.5	0.5	72
5AC12D	H5AC12D	12	20.9	209	2.5	0.5	0.5	75
5AC15D	H5AC15D	15	16.7	167	2.5	0.5	0.5	75

Note 1: Maintain minimum 10% of rated load to prevent a voltage surge.

Note 2: Tested at nominal input voltage and full output load.

Note 3: Dual output loads must be balanced.

**SPECIFICATIONS ( $V_{IN}$ , Full Load,  $T_A = +25^{\circ}\text{C}$ , 1 hour warm up unless otherwise specified)****INPUT**

Parameter	Condition	Min.	Typ.	Max.	Units
Input Voltage Range	5AC models	90	115	130	VAC
	H5AC models	170	220	240	
Input Frequency		47	60	440	Hz
Input Fuse Recommendation	5AC models with external 5Ω inrush thermistor	0.25A, Rated Voltage ≥ Input Voltage			
	H5AC models with external 10Ω inrush thermistor	0.125A, Rated Voltage ≥ Input Voltage			
Input Thermistor Recommendation	5AC models	-	5	-	Ω
	H5AC models	-	10	-	

**OUTPUT**

Parameter	Condition	Min.	Typ.	Max.	Units
Line Regulation		-	-	0.2	±%
Output Ripple	1MHz bandwidth	-	-	50	mVp-p

**ENVIRONMENTAL**

Parameter	Condition	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient without derating	-25	-	+70	°C
Storage Temperature Range	Ambient	-55	-	+125	°C
Temperature Coefficient		-	0.02	-	%/°C
Cooling	Free Air Convection				

**SPECIFICATIONS ( $V_{IN}$ , Full Load,  $T_A = +25^{\circ}\text{C}$ , 1 hour warm up unless otherwise specified)****GENERAL**

Parameter	Condition	Min.	Typ.	Max.	Units
Operating Frequency		25	-	35	kHz
Isolation Voltage	Input to output	1200	-	-	$V_{RMS}$
Size	L x W x H	2.3 x 2.2 x 0.5 (58.42 x 55.88 x 12.7)			inches (mm)
Weight		-	145	-	grams
Case	6-Sided Epoxy Insulated Metal				
Potting	Vacuum Impregnated Epoxy				
Box Packaging	8 x 7.5 x 1.5 (203.2 x 190.5 x 38.1) or 12 x 9 x 1.5 (304.8 x 228.6 x 38.1)				inches (mm)

**PROTECTIONS & FEATURES**

Parameter	Condition	Min.	Typ.	Max.	Units
Short circuit	Continuous, auto-recovery				

**DESIGNED TO MEET**

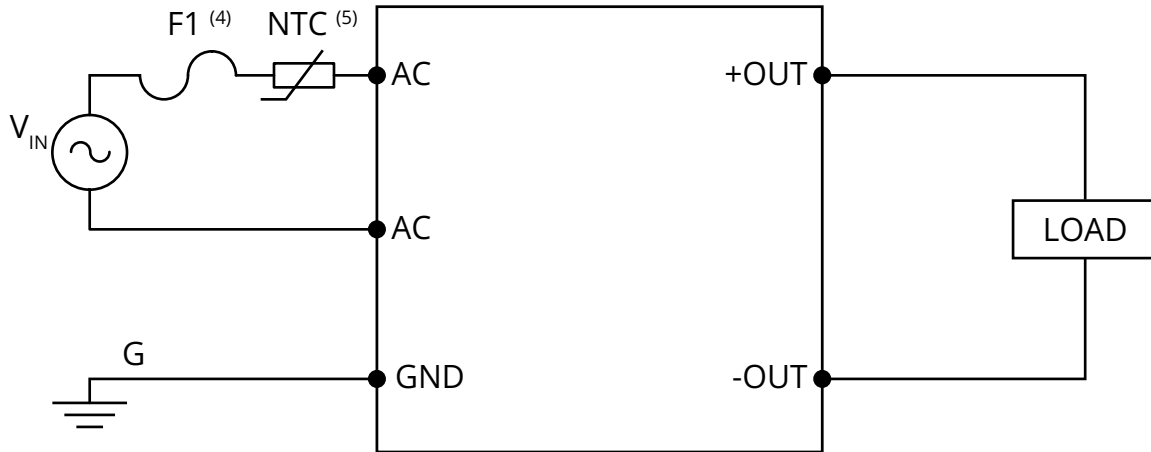
Test	Referenced Standard	Description
Vibration	MIL-STD-202	Method 204, Vibration, High Frequency, Condition D
Shock	MIL-STD-202	Method 213, Shock (Specified Pulse), Condition I
Humidity	MIL-STD-202	Method 106, Moisture Resistance
Altitude	MIL-STD-202	Method 105, Barometric Pressure (Reduced), Condition D

**OPTIONS AVAILABLE – CONTACT PICO FOR PART NUMBER**

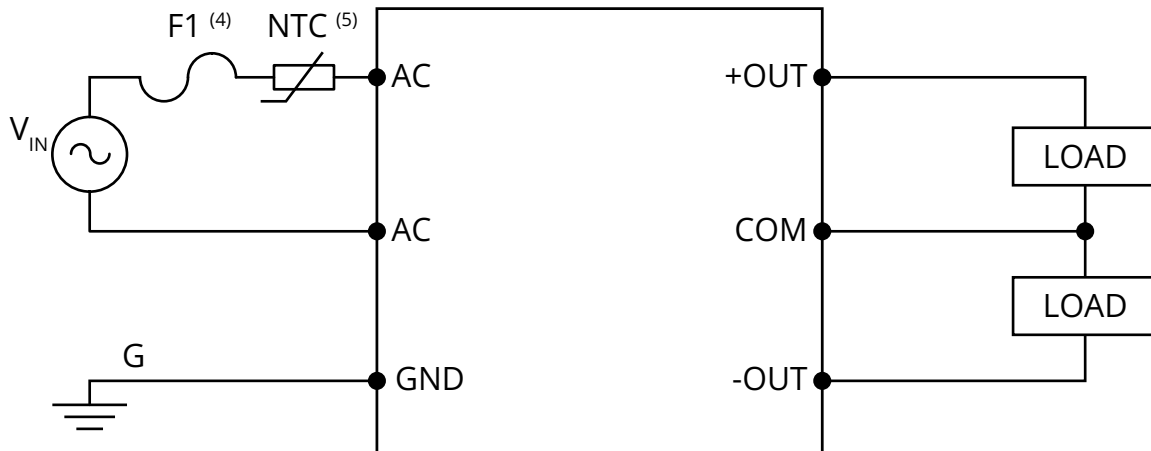
Parameter	Referenced Standard	Description
Stabilization Bake	MIL-STD-883	Referenced Method 1008 Non-operating maximum storage temperature for 24 hours
Temperature Cycle	MIL-STD-883	Referenced Method 1010 Non-operating at temperature extremes, 15 mins/temp, 10 cycles
Burn-In	MIL-STD-883	Referenced Method 1015 Max operating temperature for 160 hours
Expanded Operating Temperature Range	-55°C to +85°C	

**TYPICAL CONNECTION CIRCUIT**

**SINGLE OUTPUT**



**DUAL OUTPUT**



Note 3: Dual output loads must be balanced.

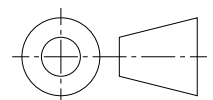
Note 4: For 5AC models, a 0.25A fuse is required on the input. For H5AC models, a 0.125A fuse is required on the input.

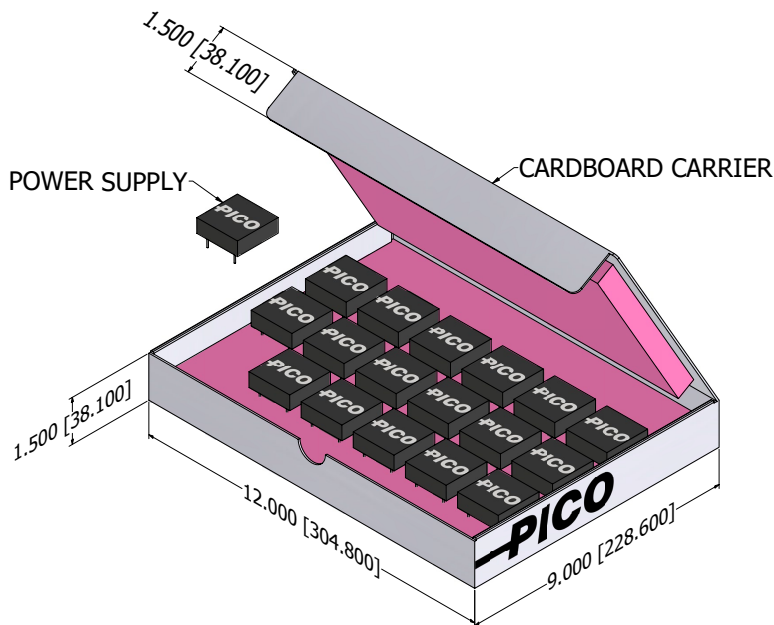
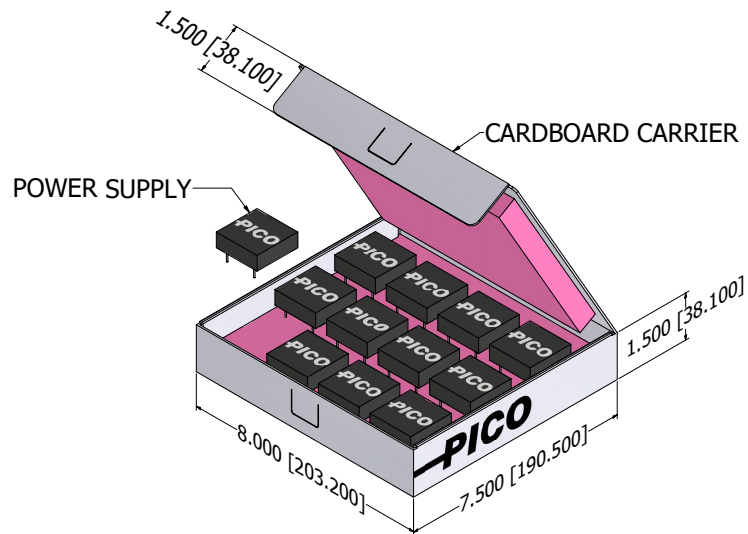
Note 5: For 5AC models, a 5 $\Omega$  inrush thermistor is required on the input. For H5AC models, a 10 $\Omega$  inrush thermistor is required on the input.

## SINGLE OUTPUTS



a. ALL DIMENSIONS ARE IN INCHES, [ ] = MM



**BOX PACKAGING - BULK**

Pico warrants each product manufactured by us and sold by us or an authorized representative, to be free from defects in material and workmanship. If properly used, it will perform within its applicable specifications for a period of one year after original shipment. Pico's obligation under this guarantee is limited to repairing or replacing our product to the original purchaser. This warranty is in lieu of all other warranties, express or implied and constitutes fulfillment of our obligations to the purchaser. We do not guarantee that the products can be used for a particular purpose other than those solely covered by the product's specifications. Pico must be notified if the product must meet particular certifications and/or standards. We assume no liability, in any event, for consequential damages, for anticipated or lost profits, incidental damages or loss of time or other losses incurred by the purchaser or any third party in connection with products covered by this warranty or otherwise. The purchaser will indemnify and hold Pico harmless for any damages, losses, costs, etc. from usage not within the product's specifications. Pico must be consulted before usage of its products in a nuclear, radioactive or space environment.

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