

37000 Series

100uH to 1.5mH, Up to 8A_{RMS} 3 Phase Winding Common Mode Choke

PICO
Electronics, Inc.

PRODUCT OVERVIEW

Pico 3 Phase Winding Common Mode Chokes are constructed to be highly effective in suppressing electromagnetic interference and radio frequency interference, where high-frequency noises are blocked to allow DC and low-frequency AC signals to pass through. These noise suppression devices offer overall stability of a system for balanced load handling, reduced harmonics, and distributed thermal output. They are extremely reliable in the performance of electronic systems where security of data and information are crucial, as well as mechanically durable to the integrity of mission systems.

Typical applications:

- DC-DC Converters
- Switching Power Supplies
- Communication Interfaces
- Aviation Power Systems
- Automotive & EVs
- Medical Equipment
- Lighting Systems

FEATURES

- Extreme resistance to impact, shock, and vibration
- Manufactured to MIL-PRF-27 Grade 5, Class S (Class V - 155°C available)
- High reliability for space and mission critical applications
- Ultra miniature in size and minimalistic design
- Terminal solderability per MIL-STD-202, Method 208

Contact Pico for part number of available options:

- Screening and qualification criteria to flight standard
- Fully RoHS compliant or with exemption 7(a)
- Modifications to mechanical design and electrical characteristics
- Custom new design and parameters



SPECIFICATIONS

Part Number	Inductance Per Winding [μH]	RMS Current [A]	DC Resistance Per Winding [mΩ]	Leakage Inductance [μH] typ.	Size Reference
37100	100	1.2	11	0.68	1
37200		3.25	6.4	1.1	2
37300		6.5	3.4	1.2	3
37400		8.2	3.4	1.52	4
37110	150	1	18	1.1	1
37210		2.04	12.6	1.38	2
37310		4.1	6	1.6	3
37410		6.5	4.8	2.06	4
37120	200	0.8	25	1.4	1
37220		1.61	16.5	2.1	2
37320		3.25	10	2.35	3
37420		5.2	6.8	2.5	4
37130	300	0.63	38	2.15	1
37230		1.28	23	2.9	2
37330		2.56	13.5	2.9	3
37430		4.1	10.1	3.1	4
37140	400	0.5	55	2.75	1
37240		1	34	3	2
37340		2.04	20	3.9	3
37440		3.24	13.4	4.52	4
37150	500	0.4	79	3.62	1
37250		0.8	45	3.52	2
37350		1.62	27.6	4.3	3
37450		2.56	20	5.7	4
37160	1000	0.26	160	5.79	1
37260		0.63	76	6.2	2
37360		0.8	94.2	5.3	3
37460		2.04	27.2	8.5	4
37170	1500	0.16	305	6.5	1
37270		0.4	145	7.1	2
37370		0.51	146	6.7	3
37470		1.61	54	9.3	4

Note 1: Inductance measured at 0.1VRMS and 10kHz.

Note 2: Maximum ambient plus temperature rise is limited 130°C.

Note 3: Minimum inductance is 80% of listed value with no maximum value.

Note 4: Winding balance at ±1%.

SPECIFICATIONS

GENERAL

Parameter	Condition	Min.	Typ.	Max.	Units
Dielectric Withstanding Voltage	60Hz	-	1500	-	V _{RMS}
Insulation Resistance	300VDC	10	-	-	GΩ
Operating Temperature Range	Class S, Ambient with temperature rise	-55	-	+130	°C
Storage Temperature Range	Ambient	-55	-	+130	°C
Size	See mechanical drawings				
Weight	See mechanical drawings				
Case	Glass Reinforced Polymer				
Potting	Vacuum Impregnated Epoxy				
Tube Packaging (W x H x L)	Size 1	1.03 x 0.52 x 20.0 (26.264 x 13.081 x 508)			inches (mm)
	Size 2	1.24 x 0.61 x 20.0 (31.496 x 15.494 x 508)			
	Size 3	1.24 x 0.61 x 20.0 (31.496 x 15.494 x 508)			
	Size 4	1.65 x 0.74 x 20.0 (41.783 x 18.796 x 508)			
Tape & Reel Packaging	Upon request				
Moisture Sensitivity Level	Surface Mount only	Level 3			

OPTIONAL DESIGN CRITERIA

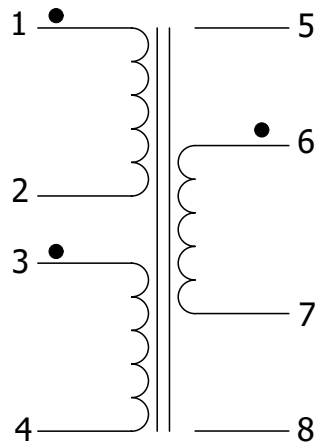
Test	Standard	Description
Vibration	MIL-STD-202	Method 204, Vibration, High Frequency
Shock	MIL-STD-202	Method 213, Shock (Specified Pulse)
Immersion	MIL-STD-202	Method 104, Immersion
Moisture Resistance	MIL-STD-202	Method 106, Moisture Resistance
Flammability	MIL-STD-202	Method 111, Flammability (External Flame)
Thermal Shock	MIL-STD-202	Method 107, Thermal Shock

OPTIONAL SCREENING AND QUALIFICATION

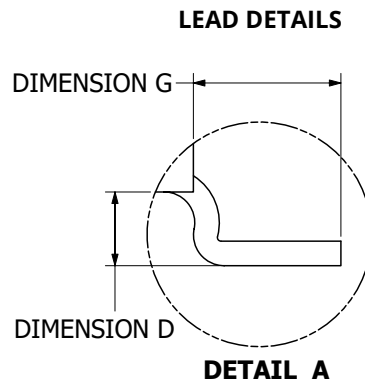
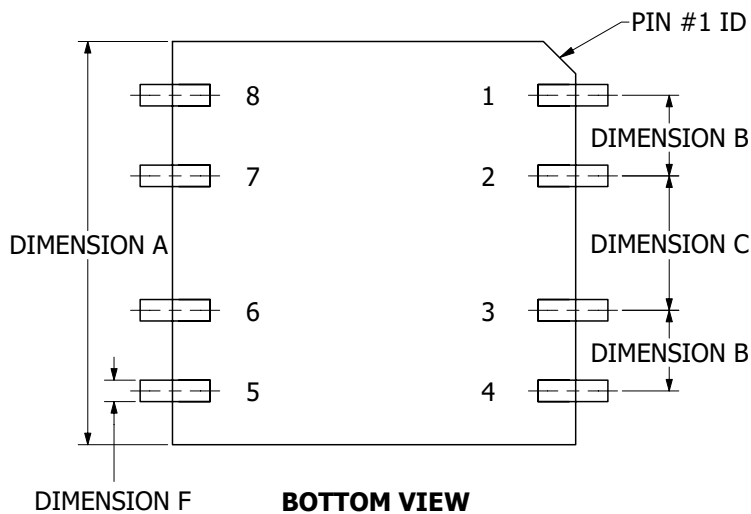
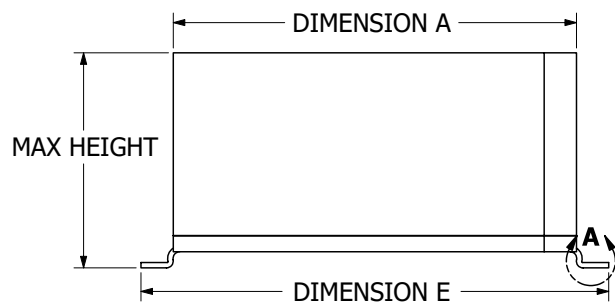
Standard	Screening & Qualification	Test ⁽⁵⁾
MIL-PRF-27	a.) Group A inspection Level-T - Table VII b.) Qualification inspection, Grade 5 - Table V	I. Thermal Shock II. Vibration III. Burn-in IV. Induced Voltage V. Shock VI. Dielectric Withstanding Voltage (at reduced pressure) VII. Insulation Resistance VIII. Electrical Characteristics IX. Visual and Mechanical Examination (External) X. Life XI. Radiographic Inspection
MIL-STD-981	a.) Group A screening tests - Table VI b.) Group B tests - Table XII, Class S	
EEE-INST-002, Section M1	a.) Magnetics Screening Req. - Table 2 b.) Magnetics Part Qual. - Table 3	

Note 5: Screening and qualification tests are not limited to the options in the chart above. Each standard may also be stringent or exclude certain tests from one another. Please contact Pico for specific application needs and for Pico part number.

ELECTRICAL SCHEMATIC



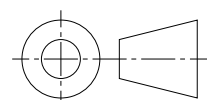
MECHANICAL DRAWINGS



Size	Max Height	Dimension								Typ. Weight (grams)
		A	B	C	D	E	F	G		
1	.280 (7.11)	.625 (15.87)	.100 (2.54)	.200 (5.08)	.030 (0.76)	.745 (18.92)	.025 (0.64)	.060 (1.52)	3.5	
2	.400 (10.16)	.750 (19.05)	.150 (3.81)	.250 (6.35)	.030 (0.76)	.870 (22.10)	.040 (1.02)	.060 (1.52)	7.7	
3	.475 (12.06)	.850 (21.59)	.150 (3.81)	.350 (8.89)	.030 (0.76)	1.050 (26.67)	.040 (1.02)	.100 (2.54)	11.3	
4	.550 (13.97)	1.125 (28.57)	.200 (5.08)	.525 (13.33)	.030 (0.76)	1.425 (36.20)	.055 (1.40)	.150 (3.81)	24.2	

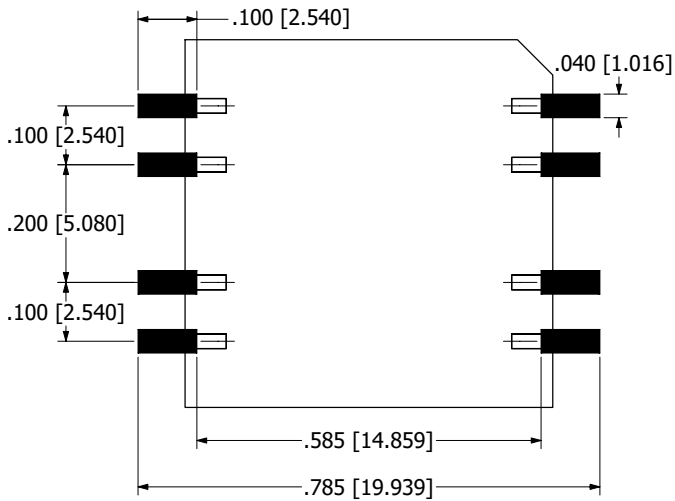
NOTES

- a. ALL DIMENSIONS ARE IN INCHES, [] = MM
- b. TERMINALS ARE CLOCKWISE FROM PIN #1
- c. PINS # 5 & #8 HAVE NO CONNECTION

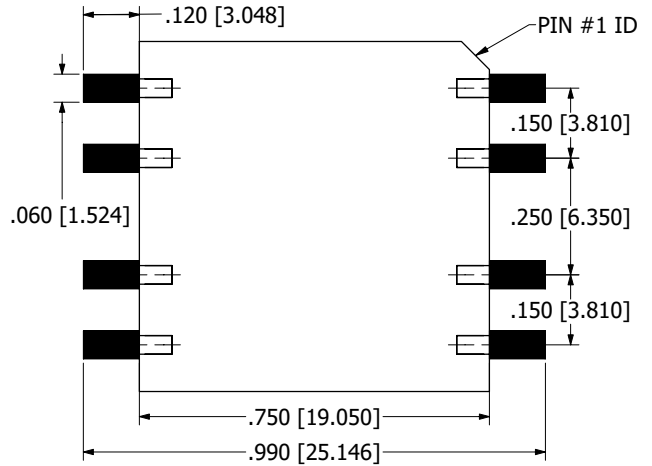


RECOMMENDED LAND PATTERN DIMENSIONS

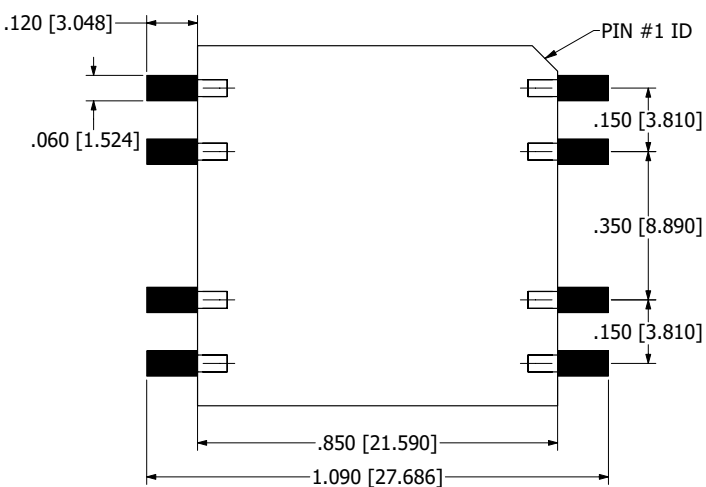
SIZE 1



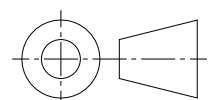
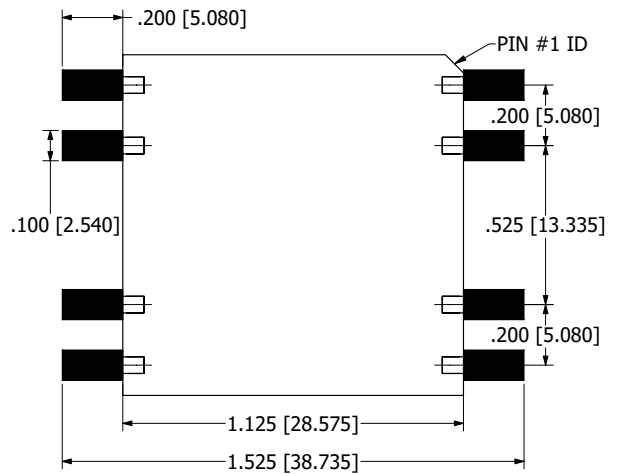
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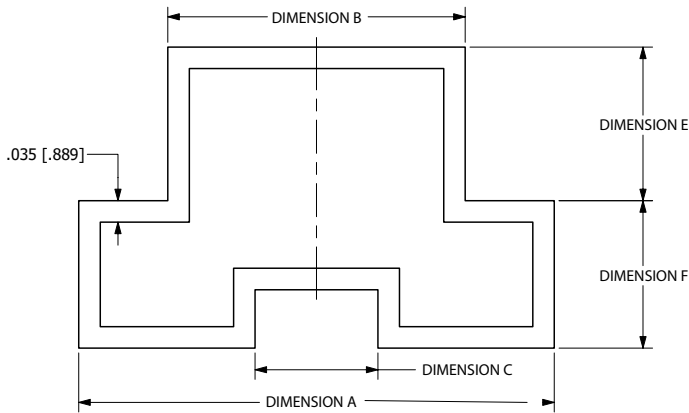
SIZE 3



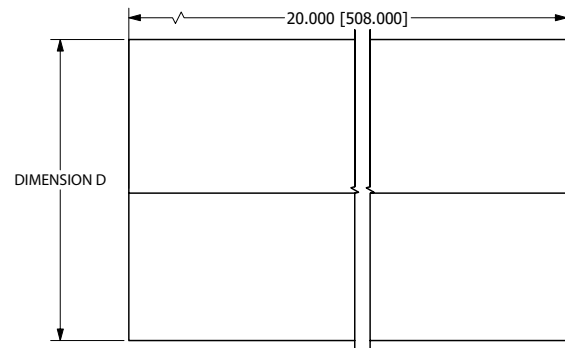
SIZE 4



TUBE PACKAGING

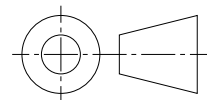
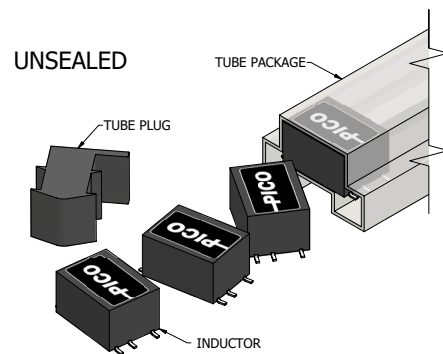
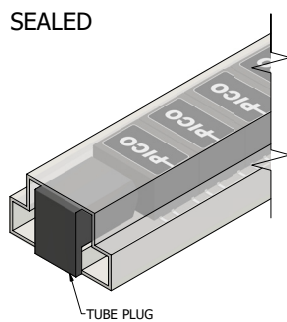


PLAN VIEW



ELEVATION VIEW

Size	Dimension					
	A	B	C	D	E	F
1	1.034 [26.264]	.744 [18.898]	.340 [8.636]	.515 [13.081]	.275 [6.985]	.240 [6.096]
2 & 3	1.240 [31.496]	.950 [24.130]	.480 [12.192]	.610 [15.494]	.390 [9.906]	.220 [2.558]
4	1.645 [41.783]	1.355 [34.417]	.645 [13.383]	.740 [18.796]	.200 [5.080]	.540 [13.716]



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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