

# 73000 Series

0.05-5mH, Up to 28.4A, High DC & Low Profile Power Inductors

**PICO**  
Electronics, Inc.

## PRODUCT OVERVIEW

Pico power inductors are built to smoothly transmit direct current across various DC-DC converters and switching regulators. They can provide low core losses and are used to store energy, which the electromotive force can filter out frequency noise and reduce signal loss. Energy storage can also allow higher power consumption in system designs. These power inductors are ideal for filtering out noise and ripple spikes in many applications. Pico has a diverse portfolio of power inductors ranging in mechanical size, mounting options, current rating, and inductance rating.

Typical applications:

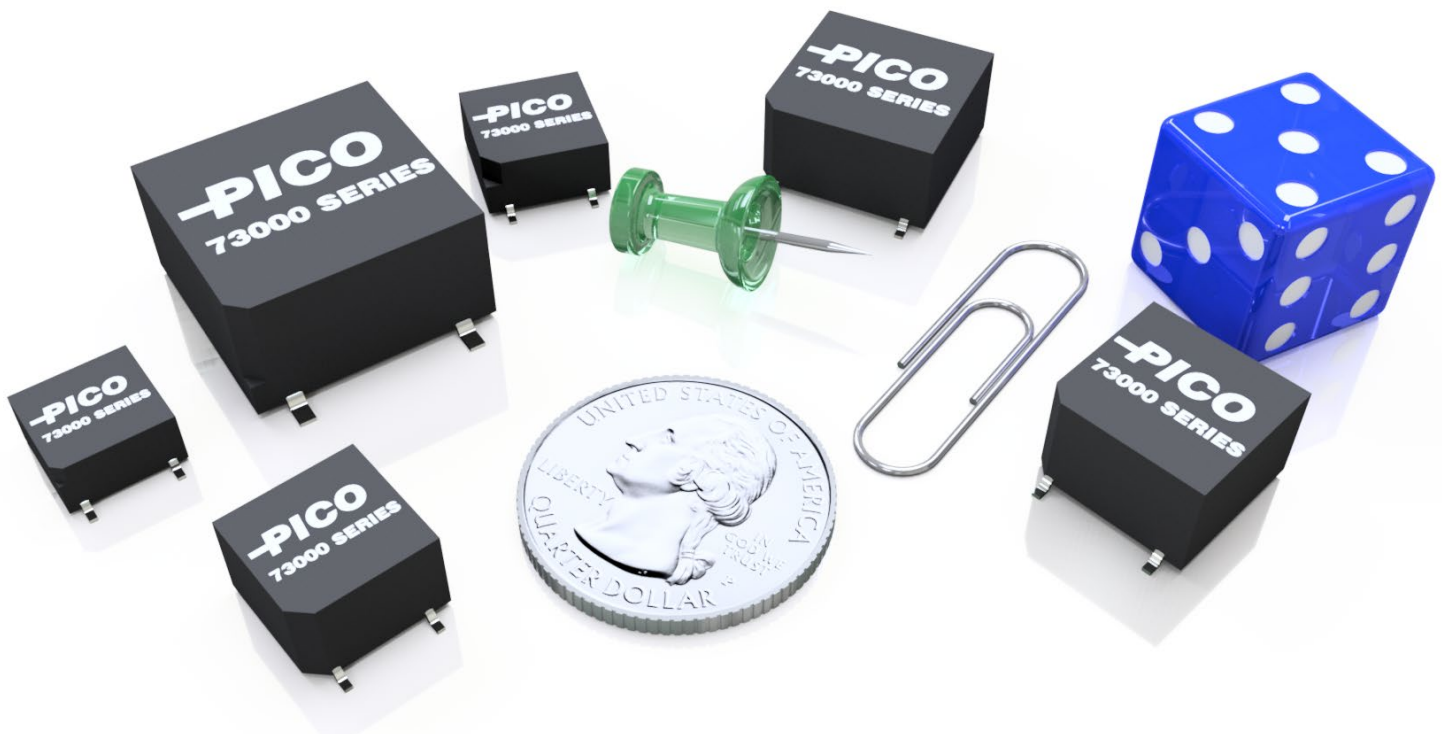
- DC-DC Converters
- Switching Regulators
- Radar & Communication Systems
- Step-up or Step-down Transformers
- Aviation Power Systems
- Automotive & EVs
- Medical Equipment

## FEATURES

- Extreme resistance to impact, shock, and vibration
- Manufactured to MIL-PRF-27 Grade 5, Class S
- High reliability for space and mission critical applications
- Miniature in size and minimalistic design
- Handle large transient direct currents

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

### SIZE 00

Part Number	Inductance [μH]	DC Current			DC Resistance [Ω]	Self Resonant Frequency [MHz]
		10% drop in L [A]	20% drop in L [A]	30% drop in L [A]		
73905	2	3.84	5.56	7	0.005	24.7
73910	3.5	2.9	4.2	5.3	0.009	18.7
73915	5	2.43	3.5	4.43	0.013	15.7
73920	8	1.92	2.78	3.5	0.021	12.4
73925	10	1.72	2.49	3.13	0.026	11.1
73930	15	1.4	2.03	2.56	0.039	9.04
73935	20	1.22	1.76	2.21	0.051	7.83
73940	25	1.09	1.57	1.98	0.064	7
73945	30	0.99	1.44	1.81	0.077	6.4
73950	35	0.92	1.33	1.67	0.09	5.92
73955	40	0.86	1.24	1.57	0.103	5.53
73960	45	0.81	1.17	1.48	0.116	5.22
73965	50	0.77	1.11	1.4	0.129	4.95

### SIZE 0

Part Number	Inductance [μH]	DC Current			DC Resistance [Ω]	Self Resonant Frequency [MHz]
		10% drop in L [A]	20% drop in L [A]	30% drop in L [A]		
73796	5	3.35	4.47	5.59	0.012	10
73797	10	2.37	3.16	3.95	0.024	7.07
73798	15	1.93	2.58	3.23	0.036	5.77
73799	20	1.68	2.24	2.8	0.048	5
73800	25	1.5	2	2.5	0.06	4.5
73805	50	1.06	1.4	1.7	0.12	3.3
73810	75	0.85	1.1	1.4	0.18	2.7
73815	100	0.75	1	1.2	0.24	2.3
73820	150	0.61	0.81	0.97	0.36	2
73825	200	0.53	0.7	0.84	0.48	1.7
73830	250	0.47	0.6	0.79	0.6	1.5
73832	500	0.33	0.42	0.55	1.2	1
73835	750	0.27	0.36	0.45	1.8	0.8
73840	1000	0.23	0.31	0.39	2.4	0.7
73845	1500	0.19	0.25	0.32	3.6	0.6
73850	2000	0.16	0.22	0.26	4.8	0.55
73855	2500	0.15	0.2	0.25	6	0.5
73860	5000	0.1	0.14	0.17	12	0.3

## SPECIFICATIONS

### SIZE 1

Part Number	Inductance [μH]	DC Current			DC Resistance [Ω]	Self Resonant Frequency [MHz]
		10% drop in L [A]	20% drop in L [A]	30% drop in L [A]		
73001	5	4.25	5.8	7.38	0.006	10
73002	10	3	4.1	5.22	0.013	7.07
73003	15	2.45	3.35	4.26	0.019	5.77
73004	20	2.13	2.9	3.69	0.026	5
73005	25	1.9	2.6	3.3	0.032	4.5
73010	50	1.34	1.84	2.33	0.064	3.3
73015	75	1.1	1.5	1.91	0.098	2.7
73020	100	0.95	1.3	1.65	0.128	2.25
73022	150	0.77	1	1.3	0.192	1.9
73023	200	0.67	0.91	1.1	0.256	1.3
73025	250	0.6	0.82	1.04	0.32	1.5
73027	500	0.42	0.57	0.73	0.64	1
73030	750	0.35	0.47	0.6	0.96	0.85
73035	1000	0.3	0.41	0.52	1.28	0.73
73040	1500	0.25	0.34	0.43	1.92	0.6
73042	2000	0.21	0.29	0.36	2.56	0.52
73045	2500	0.19	0.26	0.33	3.2	0.45
73050	5000	0.13	0.18	0.23	6.4	0.33

### SIZE 2

Part Number	Inductance [μH]	DC Current			DC Resistance [Ω]	Self Resonant Frequency [MHz]
		10% drop in L [A]	20% drop in L [A]	30% drop in L [A]		
73111	5	5.6	8.27	10.5	0.004	10
73112	10	3.96	5.86	7.42	0.008	7.07
73113	15	3.23	4.77	6.06	0.012	5.77
73114	20	2.8	4.14	5.25	0.016	5
73115	25	2.5	3.7	4.7	0.02	4.5
73120	50	1.77	2.61	3.3	0.04	3.3
73125	75	1.44	2.14	2.71	0.06	2.7
73130	100	1.25	1.85	2.35	0.08	2.25
73132	150	1	1.5	1.9	0.12	1.9
73133	200	0.88	1.3	1.6	0.16	1.3
73135	250	0.79	1.17	1.49	0.2	1.5
73137	500	0.55	0.82	1	0.4	1
73140	750	0.46	0.68	0.86	0.6	0.85
73145	1000	0.4	0.59	0.74	0.8	0.73
73150	1500	0.32	0.48	0.61	1.2	0.6
73152	2000	0.28	0.41	0.5	1.6	0.52
73155	2500	0.25	0.37	0.47	2	0.45
73160	5000	0.18	0.26	0.33	4	0.33

## SPECIFICATIONS

### SIZE 3

Part Number	Inductance [ $\mu$ H]	DC Current			DC Resistance [ $\Omega$ ]	Self Resonant Frequency [MHz]
		10% drop in L [A]	20% drop in L [A]	30% drop in L [A]		
73201	5	6.7	9.84	12.5	0.003	8.9
73202	10	4.74	6.96	8.84	0.006	6.29
73203	15	3.87	5.68	7.22	0.009	5.14
73204	20	3.35	4.92	6.25	0.012	4.45
73205	25	3	4.4	5.6	0.015	4
73210	50	2.12	3.11	4	0.03	3
73215	75	1.73	2.54	3.23	0.05	2.4
73220	100	1.5	2.2	2.8	0.06	2
73222	150	1.2	1.7	2.2	0.09	1.5
73223	200	1	1.5	1.9	0.12	1
73225	250	0.95	1.39	1.77	0.15	1.3
73227	500	0.67	0.98	1.25	0.3	1
73230	750	0.55	0.8	1.02	0.45	0.75
73235	1000	0.47	0.7	0.89	0.6	0.65
73240	1500	0.39	0.57	0.72	0.9	0.55
73242	2000	0.33	0.49	0.62	1.2	0.46
73245	2500	0.3	0.44	0.56	1.5	0.4
73250	5000	0.21	0.31	0.4	3	0.3

### SIZE 4

Part Number	Inductance [ $\mu$ H]	DC Current			DC Resistance [ $\Omega$ ]	Self Resonant Frequency [MHz]
		10% drop in L [A]	20% drop in L [A]	30% drop in L [A]		
73301	5	14	22	28.4	0.006	8.9
73302	10	9.9	15.56	20	0.005	6.29
73303	15	8.1	12.7	16.4	0.016	5.14
73304	20	7	11	14.2	0.011	4.45
73305	25	6.3	9.8	12.7	0.015	4
73310	50	4.5	7	9	0.046	3
73315	75	3.6	5.7	7.3	0.04	2.4
73320	100	3.1	4.9	6.3	0.055	2
73325	150	2.5	4	5.1	0.082	1.7
73330	200	2.2	3.4	4.5	0.114	1.5
73335	250	2	3.1	4	0.16	1.3
73337	500	1.4	2.2	2.8	0.29	1
73340	750	1.15	1.79	2.3	0.43	0.75
73345	1000	1	1.55	2	0.48	0.65
73350	1500	0.81	1.27	1.64	0.67	0.55
73355	2000	0.7	1.1	1.42	0.94	0.47
73360	2500	0.63	0.98	1.27	1.2	0.4
73365	5000	0.45	0.69	0.9	2.93	0.3

## SPECIFICATIONS

### GENERAL

Parameter	Condition	Min.	Typ.	Max.	Units
Dielectric Withstanding Voltage	60Hz	-	200	-	V <sub>RMS</sub>
Insulation Resistance	200VDC	10	-	-	GΩ
Operating Temperature Range	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)	739XX - Size 00	0.77 x 0.49 x 20.0 (19.66 x 12.446 x 508)			inches (mm)
	737XX & 738XX - Size 0	0.83 x 0.46 x 20.0 (21.184 x 11.684 x 508)			
	730XX - Size 1	0.83 x 0.46 x 20.0 (21.184 x 11.684 x 508)			
	731XX - Size 2	0.93 x 0.52 x 20.0 (23.724 x 13.081 x 508)			
	732XX - Size 3	1.03 x 0.52 x 20.0 (26.264 x 13.081 x 508)			
	733XX - Size 4	1.24 x 0.61 x 20.0 (31.496 x 15.494 x 508)			
Tape & Reel Packaging	Upon request				
Moisture Sensitivity Level	Level 3				

### OPTIONAL DESIGN CRITERIA

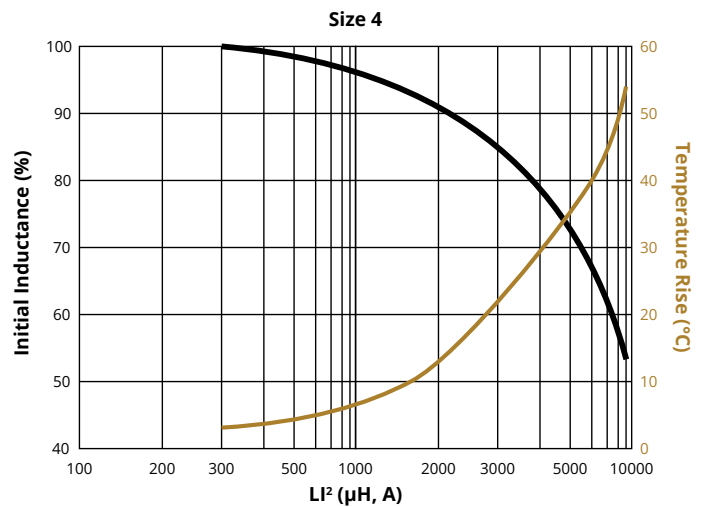
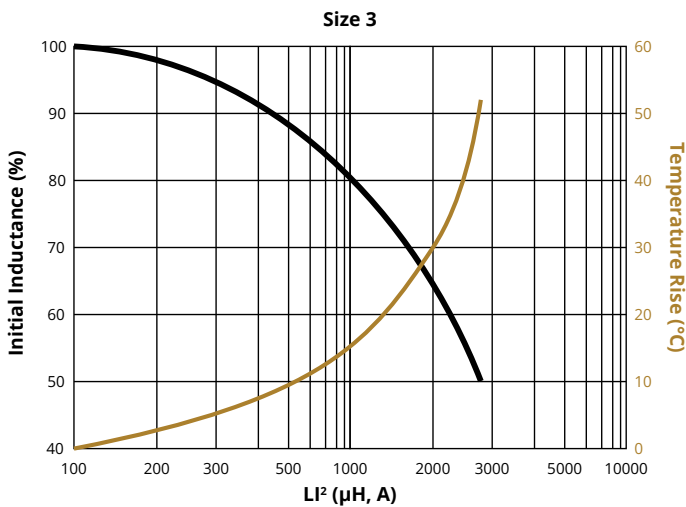
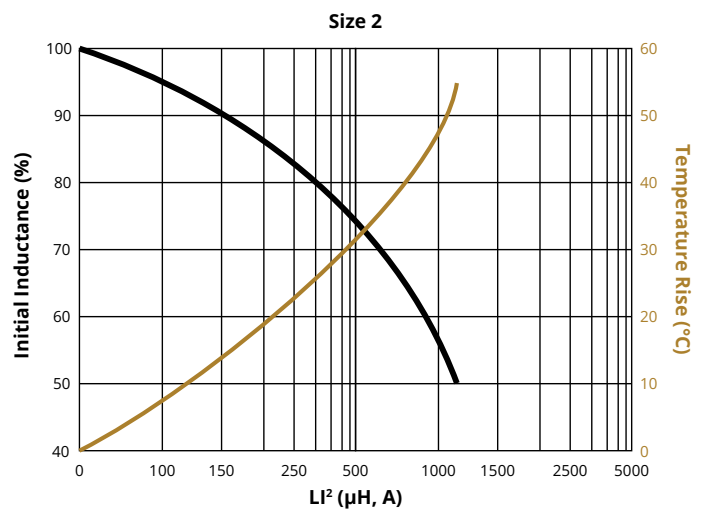
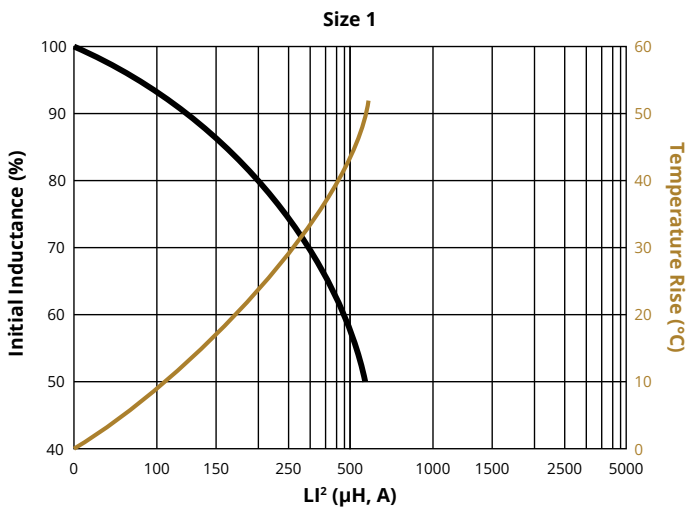
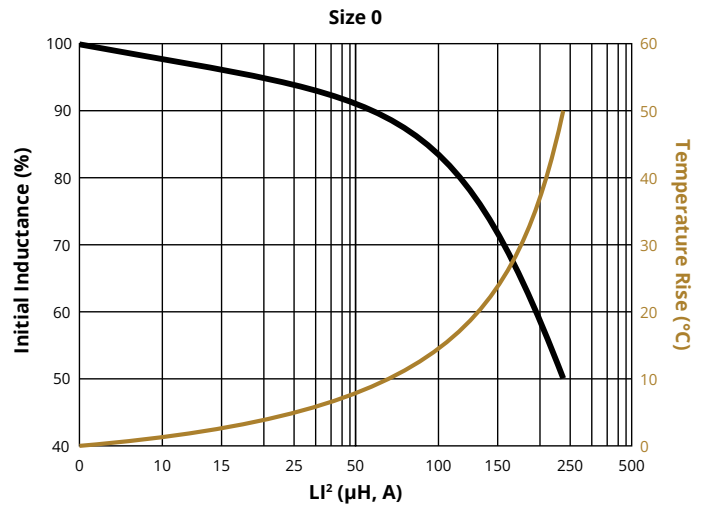
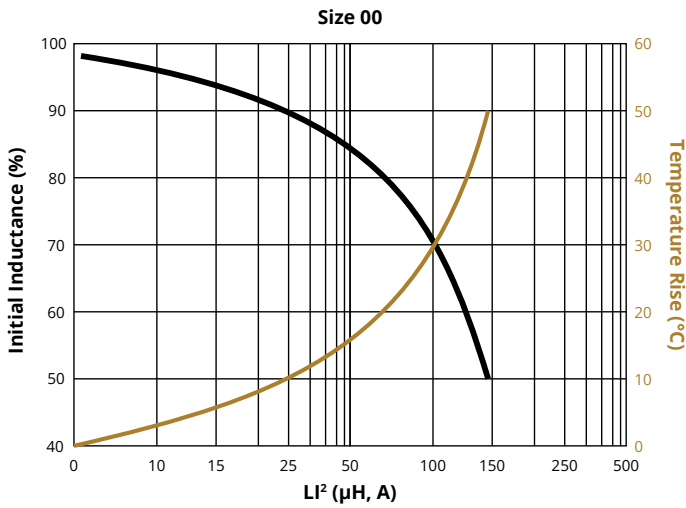
Test	Standard	Description
Vibration	MIL-STD-202	Method 204, Vibration, High Frequency
Shock	MIL-STD-202	Method 213, Shock (Specified Pulse)
Immersion	MIL-STD-202	Method 104, Immersion
Moisture Resistance	MIL-STD-202	Method 106, Moisture Resistance
Flammability	MIL-STD-202	Method 111, Flammability (External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

### OPTIONAL SCREENING AND QUALIFICATION

Standard	Screening & Qualification	Test <sup>(2)</sup>
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 4: 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.

DATA CURVES



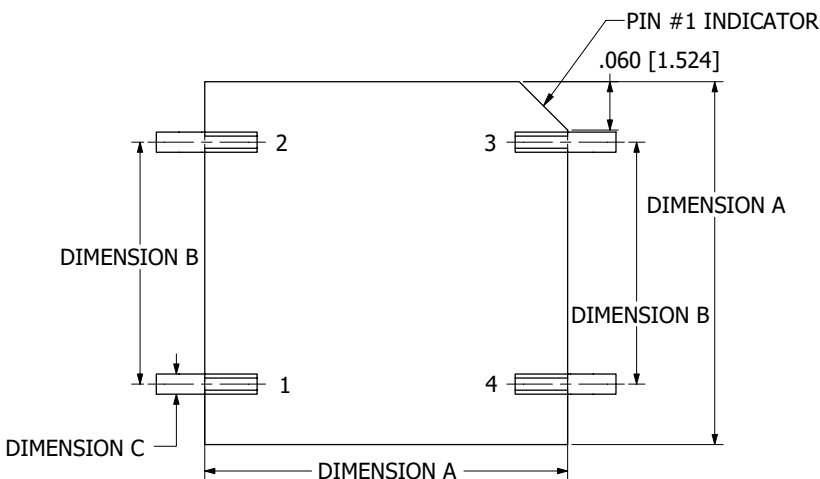
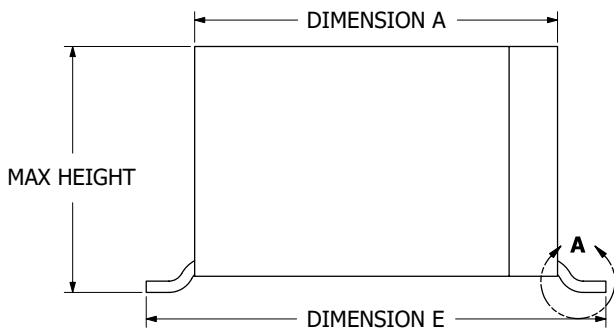
## ELECTRICAL SCHEMATIC



### NOTES

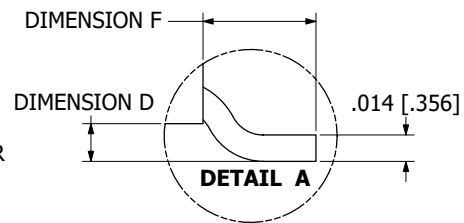
a. TERMINALS 3 & 4 HAVE NO CONNECTION. MECHANICAL STABILITY ONLY.

## MECHANICAL DRAWINGS



**BOTTOM VIEW**

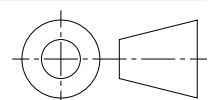
### LEAD DETAILS



Size	Max Height	Dimension						Typ. Weight (grams)
		A	B	C	D	E	F	
00	.220 (5.080)	.380 (9.650)	.280 (7.110)	.025 (.640)	.015 (.380)	.500 (12.700)	.060 (1.520)	1.1
0	.235 (5.969)	.450 (11.430)	.300 (7.620)	.025 (.640)	.020 (.510)	.570 (14.480)	.060 (1.520)	1.6
1	.305 (7.750)	.450 (11.430)	.300 (7.620)	.025 (.640)	.020 (.510)	.570 (14.480)	.060 (1.520)	2.5
2	.360 (9.140)	.550 (14.000)	.400 (10.160)	.025 (.640)	.025 (.640)	.670 (17.020)	.060 (1.520)	4.5
3	.360 (9.140)	.650 (16.510)	.500 (12.700)	.030 (.760)	.025 (.640)	.770 (19.560)	.060 (1.520)	6.9
4	.455 (11.560)	.850 (21.590)	.600 (15.240)	.055 (1.400)	.025 (.640)	1.050 (26.670)	.100 (2.540)	15.5

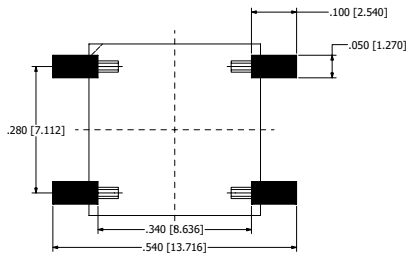
### NOTES

- a. ALL DIMENSIONS ARE IN INCHES, [ ] = MM
- b. TERMINALS ARE CLOCKWISE FROM PIN #1
- c. PIN #3 & #4 HAVE NO CONNECTION

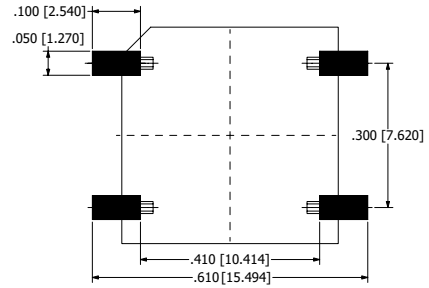


RECOMMENDED LAND PATTERN DIMENSIONS

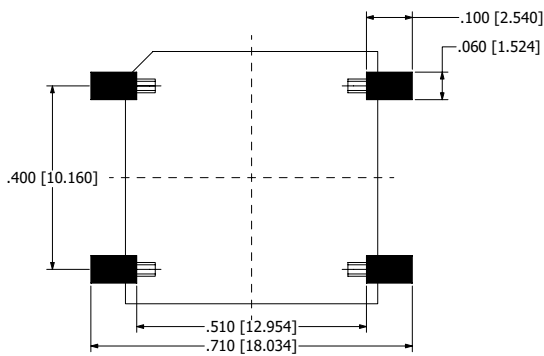
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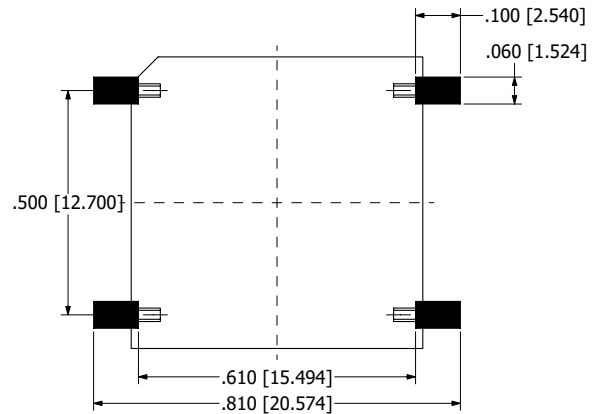
SIZE 0 & SIZE 1



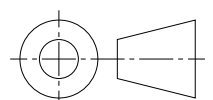
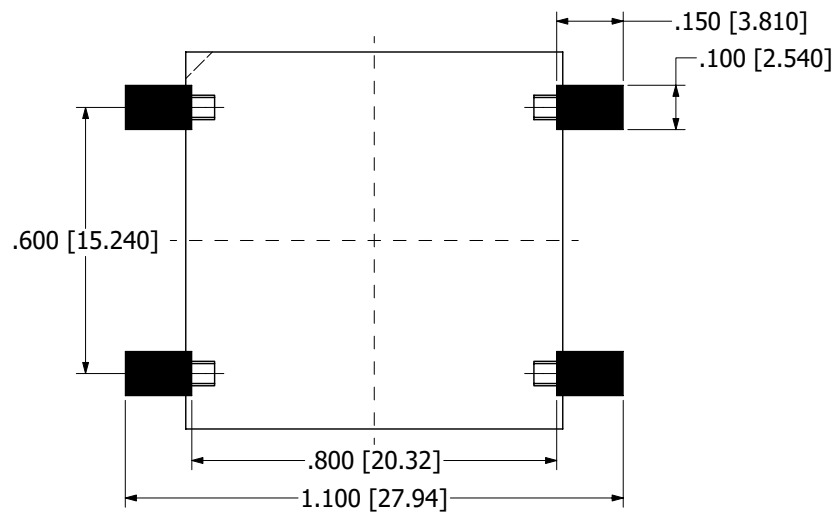
SIZE 2



SIZE 3

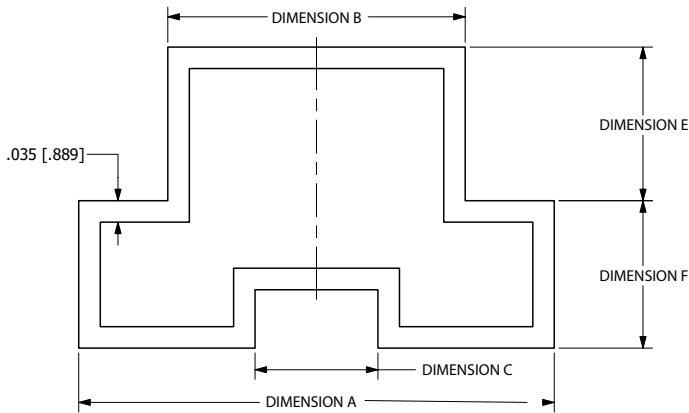


SIZE 4

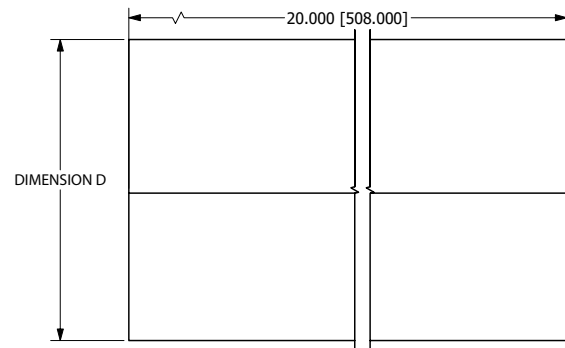




## TUBE PACKAGING

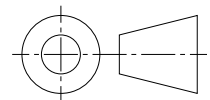
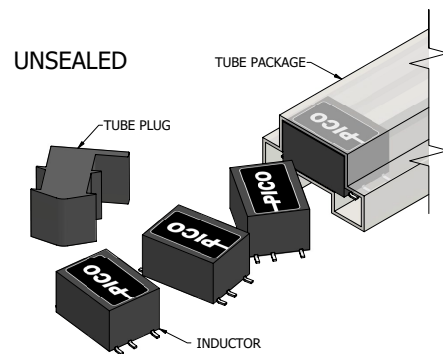
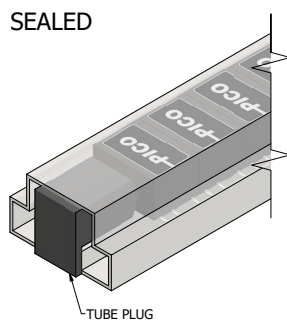


**PLAN VIEW**



**ELEVATION VIEW**

Size	Dimension					
	A	B	C	D	E	F
00	.774 [19.660]	.484 [12.294]	.200 [5.080]	.490 [12.446]	.250 [6.350]	.240 [6.096]
0 & 1	.834 [21.184]	.544 [13.818]	.160 [4.064]	.460 [11.684]	.220 [5.588]	.240 [6.096]
2	.934 [23.724]	.644 [16.358]	.240 [6.096]	.515 [13.081]	.275 [6.985]	.240 [6.096]
3	1.034 [26.264]	.744 [18.898]	.340 [8.636]	.595 [15.113]	.355 [9.017]	.240 [6.096]
4	1.240 [31.496]	.950 [24.130]	.480 [12.192]	.610 [15.494]	.390 [9.906]	.220 [2.558]



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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