

38000 Series

5-20A, 1:100 Ratio Current Sense Transformer

PICO
Electronics, Inc.

PRODUCT OVERVIEW

Pico's Current Sense Transformers are designed for load management and power circuit protection. They provide the safest step-up current monitoring by allowing measurement of the current on the low side. This ensures proper load profiling in energy industry for system distribution and effective in cost allocation by metering the data output. At the same time, these devices maintain electrical isolation in power supplies and uphold minimal sensitivity to temperature change. The current rating extends from 5A to 20A.

Typical applications:

- Power Controls
- System Monitoring
- Circuit Protection
- Load Balance
- Renewable Energy Systems
- Energy Distribution

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
- Ultra miniature in size and minimalistic design
- Design layouts in through-hole, or surface mount
- Terminal solderability per MIL-STD-202, Method 208

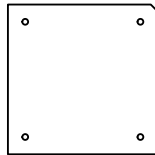
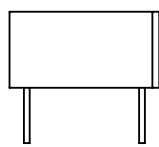
Contact Pico for part number of available options:

- 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

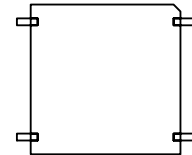
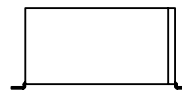


SPECIFICATIONS

38000 - THROUGH HOLE



38000SM - SURFACE MOUNT



Part Number		Secondary Inductance [mH] min.	Primary Current [A]	Turns Ratio	Secondary DC Resistance [Ω]	Size Reference
Through Hole	Surface Mount					
38100	38100SM	0.49	5	1:30	0.137	1
38105	38105SM	0.87		1:40	0.280	
38110	38110SM	1.36		1:50	0.440	
38115	38115SM	1.95		1:60	0.670	
38120	38120SM	2.66		1:70	1.230	
38125	38125SM	5.40		1:100	3.550	
38200	38200SM	1.62	15	1:30	0.027	2
38205	38205SM	2.90		1:40	0.150	
38210	38210SM	4.50		1:50	0.300	
38215	38215SM	6.50		1:60	0.440	
38220	38220SM	8.82		1:70	0.830	
38225	38225SM	18.00		1:100	2.150	
38300	38300SM	2.40	20	1:30	0.055	3
38305	38305SM	4.27		1:40	0.082	
38310	38310SM	6.67		1:50	0.160	
38315	38315SM	9.60		1:60	0.300	
38320	38320SM	13.07		1:70	0.440	
38325	38325SM	26.66		1:100	1.230	

SPECIFICATIONS

GENERAL

Parameter	Condition	Min.	Typ.	Max.	Units
Dielectric Strength	60Hz	-	500	-	V _{RMS}
Insulation Resistance	500VDC	10	-	-	GΩ
Operating Temperature Range	Ambient with temperature rise	-55	-	+130	°C
Storage Temperature Range	Ambient	-55	-	+130	°C
Size	See mechanical drawings				
Weight	Size 1	-	-	1.5	grams
	Size 2	-	-	4	
	Size 3	-	-	7.7	
Case	Glass Reinforced Polymer				
Potting	Vacuum Impregnated Epoxy				
Box Packaging (L x W x H)	Through hole models	10.65 x 2.49 x 0.95 (270.51 x 63.246 x 24.13)			inches (mm)
Tube Packaging (W x H x L)	Surface mount models	Size 1	0.77 x 0.49 x 20.0 (19.660 x 12.446 x 508)		inches (mm)
		Size 2	0.93 x 0.52 x 20.0 (23.724 x 13.081 x 508)		
		Size 3	1.03 x 0.52 x 20.0 (26.264 x 13.081 x 508)		
Tape & Reel Packaging	Upon request				
Moisture Sensitivity Level	Surface mount only	Level 3			

OPTIONAL DESIGN CRITERIA

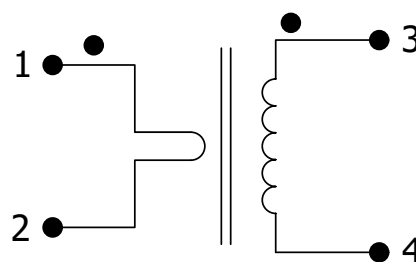
Test	Standard	Description
Vibration	MIL-STD-202	Method 204, Vibration, High Frequency
Shock	MIL-STD-202	Method 213, Shock (Specified Pulse)
Immersion	MIL-STD-202	Method 104, Immersion
Moisture Resistance	MIL-STD-202	Method 106, Moisture Resistance
Flammability	MIL-STD-202	Method 111, Flammability (External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

OPTIONAL SCREENING AND QUALIFICATION

Standard	Screening & Qualification	Test ⁽²⁾
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 2: 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.

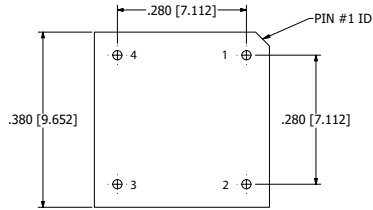
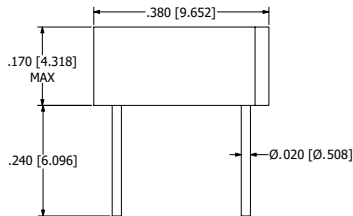
ELECTRICAL SCHEMATIC



MECHANICAL DRAWINGS

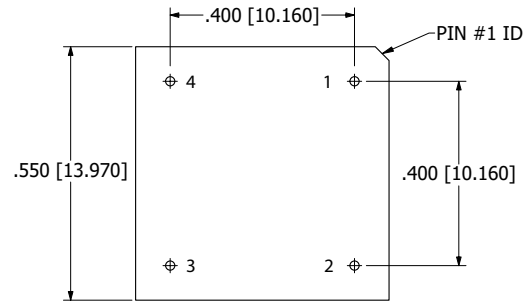
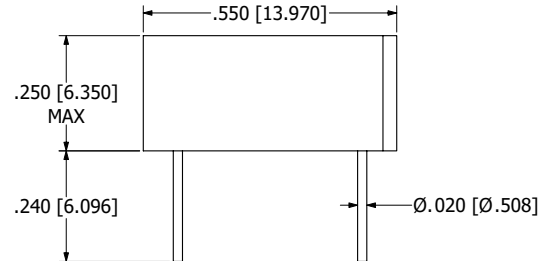
38000 SERIES - THROUGH HOLE

SIZE 1



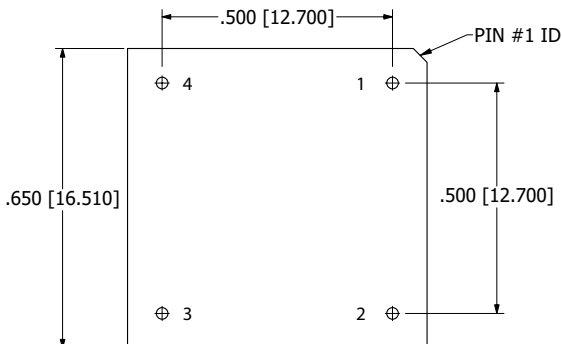
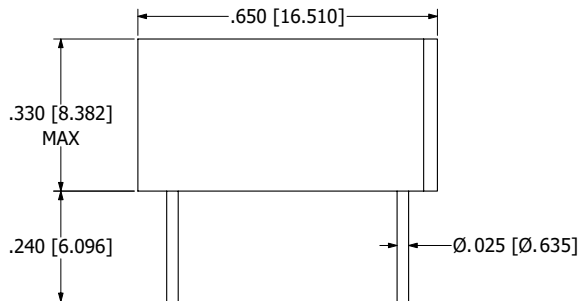
BOTTOM VIEW

SIZE 2



BOTTOM VIEW

SIZE 3



BOTTOM VIEW

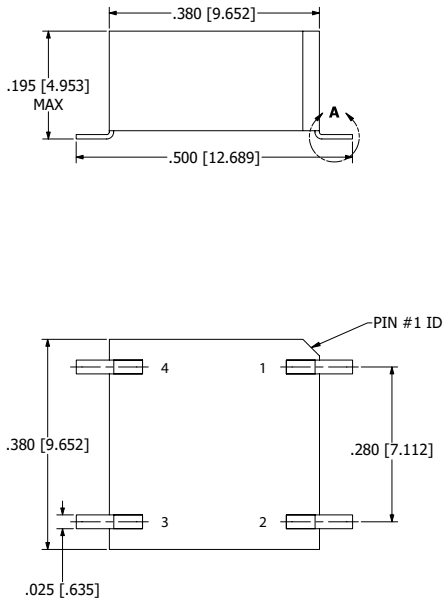
NOTES

- a. ALL DIMENSIONS ARE IN INCHES, [] = MM
- b. TERMINALS ARE CLOCKWISE FROM PIN #1

MECHANICAL DRAWINGS

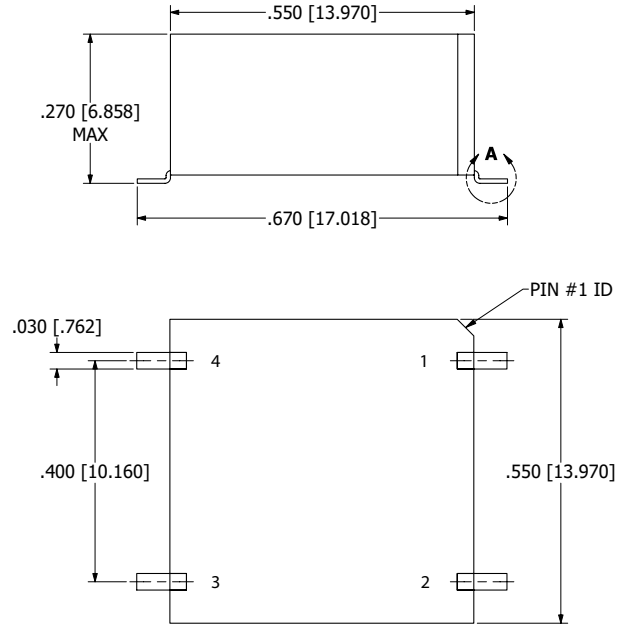
38000 SERIES - SURFACE MOUNT

SIZE 1



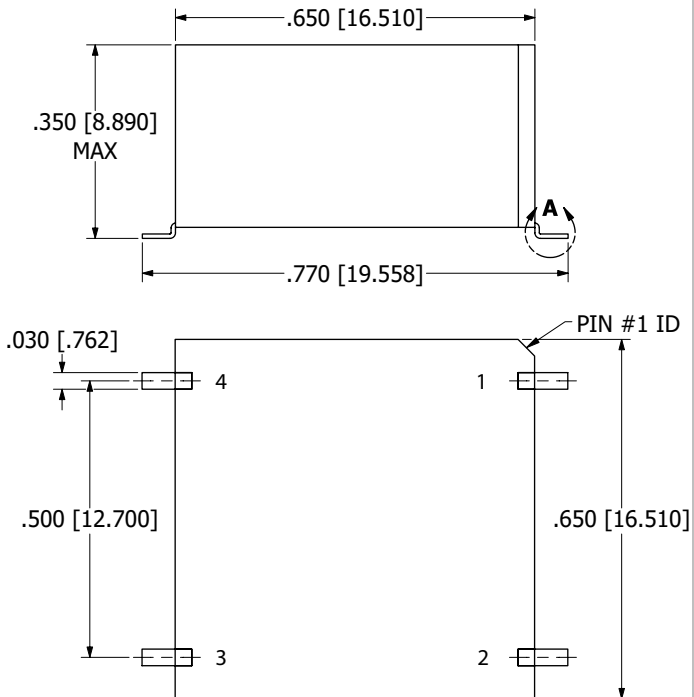
BOTTOM VIEW

SIZE 2



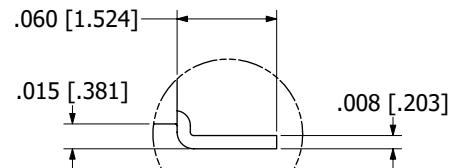
BOTTOM VIEW

SIZE 3



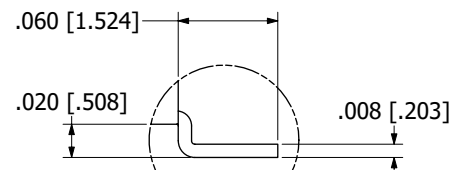
BOTTOM VIEW

LEAD DETAILS - SIZE 1 & 2



DETAIL A

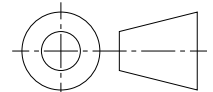
LEAD DETAILS - SIZE 3



DETAIL A

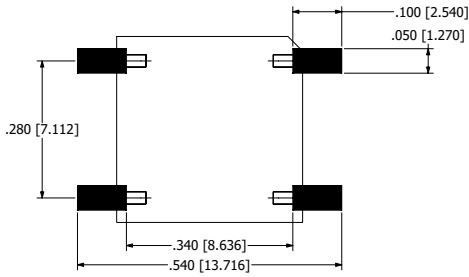
NOTES

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- b. TERMINALS ARE CLOCKWISE FROM PIN #1

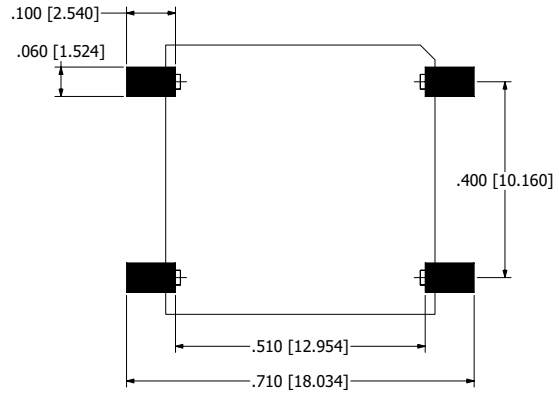


RECOMMENDED LAND PATTERN DIMENSIONS

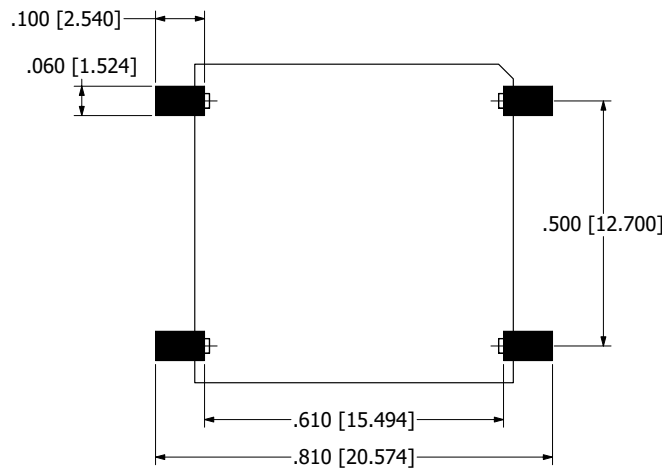
38000 SERIES - SIZE 1



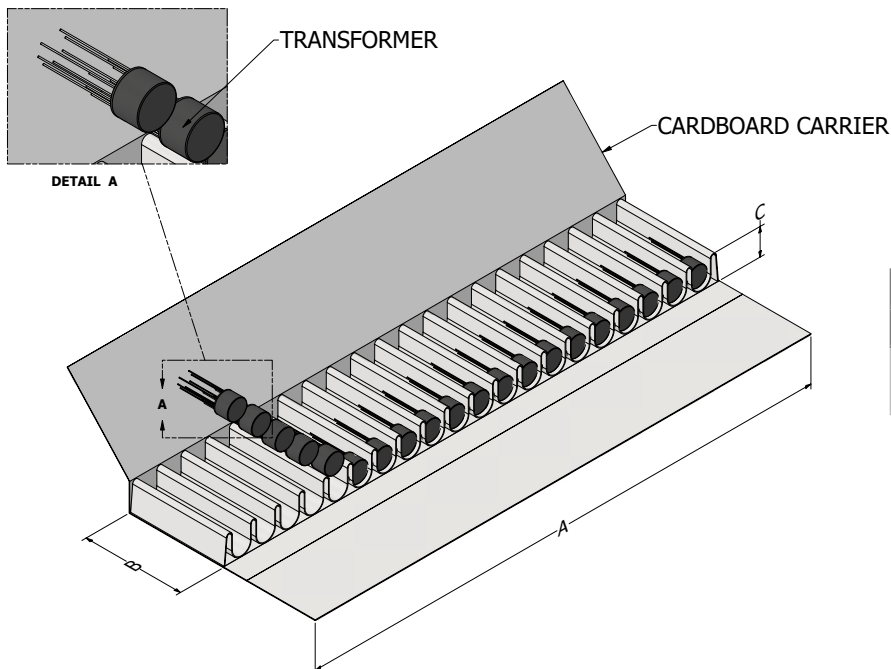
38000 SERIES - SIZE 2



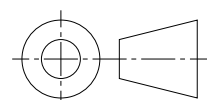
38000 SERIES - SIZE 3



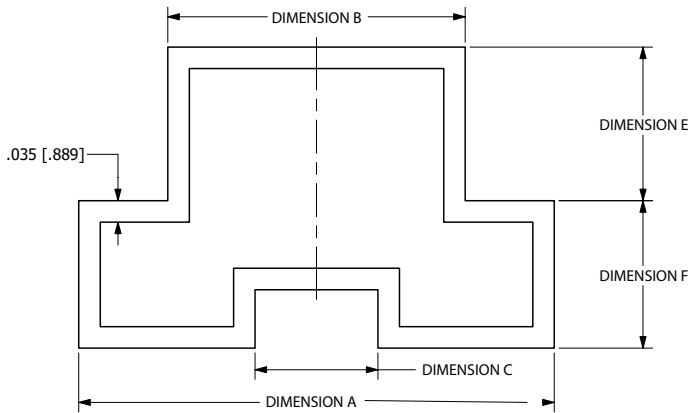
BOX PACKAGING - 38000 SERIES - THROUGH HOLE



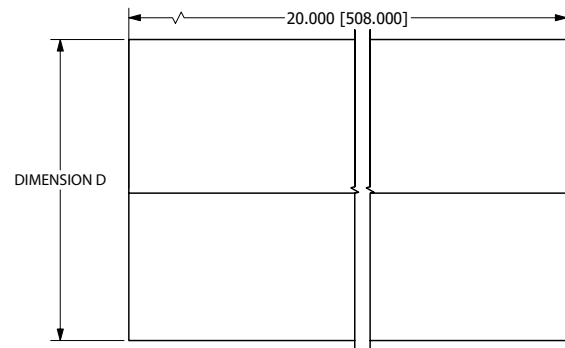
Dimension		
A	B	C
10.65	2.49	0.95
[270.51]	[63.246]	[24.13]



TUBE PACKAGING - 38000 SERIES - SURFACE MOUNT

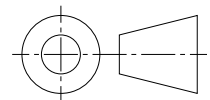
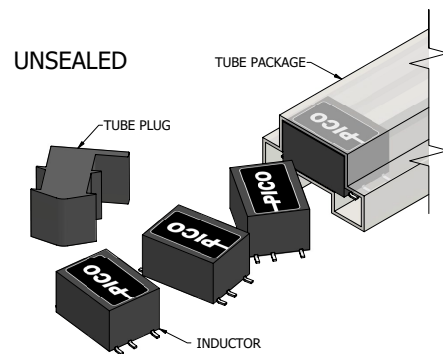
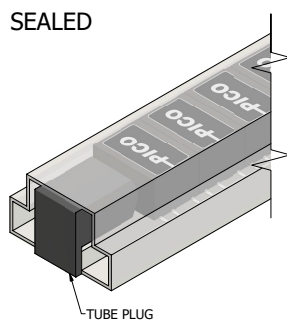


PLAN VIEW



ELEVATION VIEW

Size	Dimension					
	A	B	C	D	E	F
1	.774 [19.660]	.484 [12.294]	.200 [5.080]	.490 [12.446]	.250 [6.350]	.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]	.515 [13.081]	.275 [6.985]	.240 [6.096]



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