

# Thick Film Linear Positive Tempco Thermistor LA73 Type

ISO 9001:2000  
CERTIFIED  
TS-16949  
CERTIFIED

## 1. Features

- Anti-leaching nickel barrier terminations
- Twenty-five specifiable temperature characteristics
- Products with lead-free terminations meet EU-RoHS requirements. Pb located in glass material, electrode and resistor element is exempt per Annex 1, exemption 5 of EU directive 2005/95/EC
- Marking: Black three-digit on orange body color

## 2. Dimensions

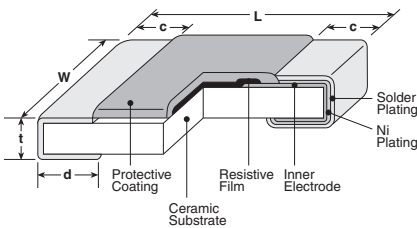
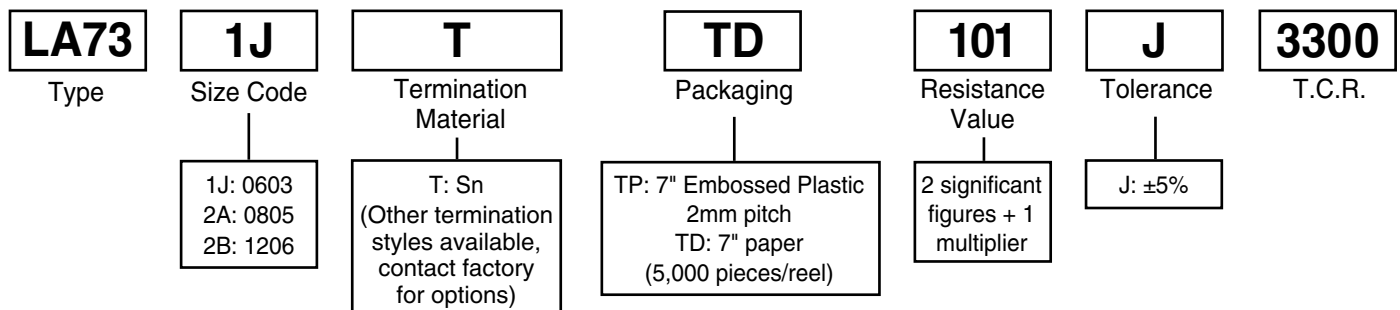


Table 1

Dimensions - inches (mm)					
Part	L	W	c	d	t
<b>1J (0603)</b>	0.063±0.008 (1.6±0.2)	0.031±0.004 (0.8±0.1)	0.012±0.004 (0.3±0.1)	0.012±0.004 (0.3±0.1)	0.02±0.004 (0.5±0.1)
<b>2A (0805)</b>	0.079±0.008 (2.0±0.2)	0.049±0.004 (1.25±0.1)	0.016±0.008 (0.4±0.2)	0.012± <sup>+0.008</sup> <sub>-0.004</sub> (0.3± <sup>+0.2</sup> <sub>-0.1</sub> )	0.02±0.004 (0.5±0.1)
<b>2B (1206)</b>	0.126±0.008 (3.2±0.2)	0.063±0.008 (1.6±0.2)	0.02±0.008 (0.5±0.3)	0.016± <sup>+0.008</sup> <sub>-0.004</sub> (0.4± <sup>+0.2</sup> <sub>-0.1</sub> )	0.024±0.004 (0.6±0.1)

## 3. Type Designation

The type designation shall be in the following form:



## 4. Standard Applications

Table 1

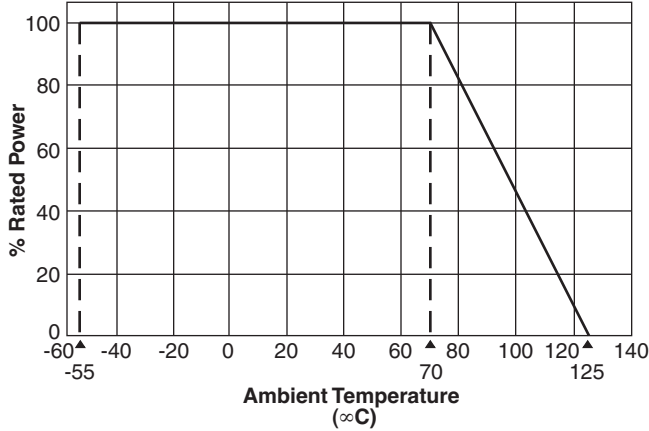
Part Designation	Thermal Dissipation Constant (mW/°C)	Rated Ambient Temp.	Operating Temp. Range
LA731J	7.6	+70°C	-55°C to +125°C
LA732A	8.2		
LA732B	9.0		

Table 2

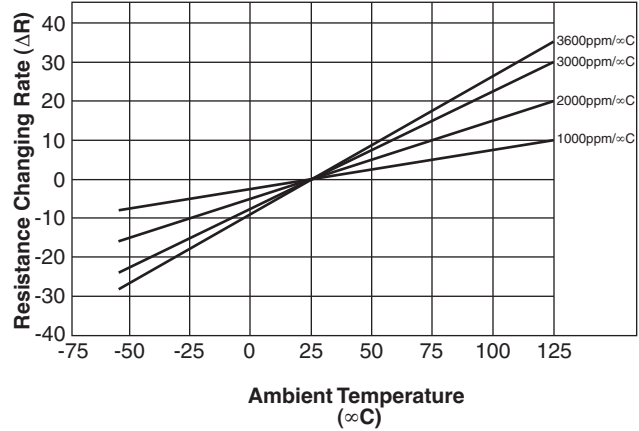
Resistance Range E-12			Resistance Tolerance	T.C.R. (ppm/°C) Max.	T.C.R. Tolerance
LA731J	LA732A	LA732B			
1KΩ - 10KΩ	1KΩ - 10KΩ	1KΩ - 10KΩ	J: ±5%	1000	±100ppm/°C
680Ω - 6.8KΩ	680Ω - 6.8KΩ	680Ω - 6.8KΩ		1200	
470Ω - 4.7KΩ	470Ω - 4.7KΩ	470Ω - 4.7KΩ		1400	
470Ω - 3.9KΩ	470Ω - 3.9KΩ	470Ω - 3.9KΩ		1600	
330Ω - 2.7KΩ	330Ω - 2.7KΩ	330Ω - 2.7KΩ		1800	
330Ω - 2.7KΩ	330Ω - 2.7KΩ	330Ω - 2.7KΩ		2000	
220Ω - 1.8KΩ	220Ω - 1.8KΩ	220Ω - 1.8KΩ		2200	
100Ω - 1.2KΩ	100Ω - 1.2KΩ	100Ω - 1.2KΩ		2400	
100Ω - 1.2KΩ	100Ω - 1.2KΩ	100Ω - 1.2KΩ		2600	
100Ω - 390Ω	100Ω - 390Ω	100Ω - 390Ω		2800	
68Ω - 220Ω	68Ω - 220Ω	68Ω - 220Ω		3000	±5%
33Ω - 120Ω	33Ω - 120Ω	33Ω - 120Ω		3300	
22Ω - 82Ω	22Ω - 82Ω	22Ω - 82Ω		3600	

## 6. Environmental Applications

### 6.1 Derating Curve



### 6.2 Temperature Characteristics



## 7. Approximate Expression for Resistance-Temperature Characteristics

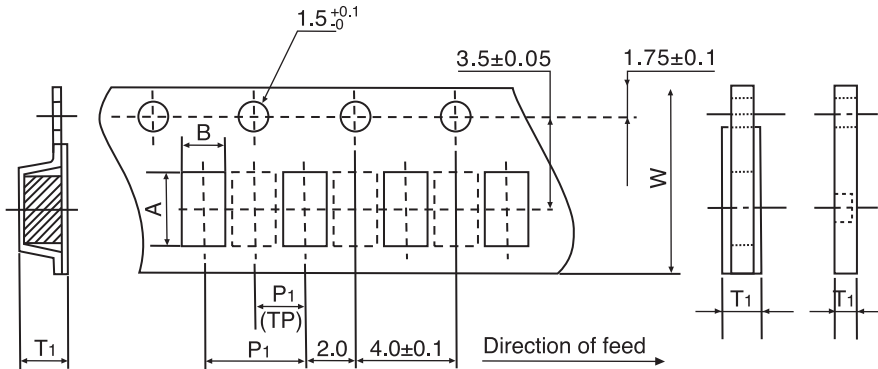
T.C.R. (x10 <sup>-6</sup> /K)	C <sub>0</sub>	C <sub>1</sub>	C <sub>2</sub>
3000	0.926	0.00294	1.1 x 10 <sup>-7</sup>
3300	0.918	0.00325	4.1 x 10 <sup>-7</sup>
3600	0.910	0.00359	1.7 x 10 <sup>-7</sup>

(Values are not guaranteed but typical)  
 $R_T = R_{25} (C_0 + C_1 T + C_2 T^2)$   
 $R_T$ : Resistance value at T°C  
 $R_{25}$ : Resistance value at 25°C  
 T: Ambient temperature (°C)  
 C<sub>0</sub>, C<sub>1</sub>, C<sub>2</sub>: Constants

## 8. Characteristics

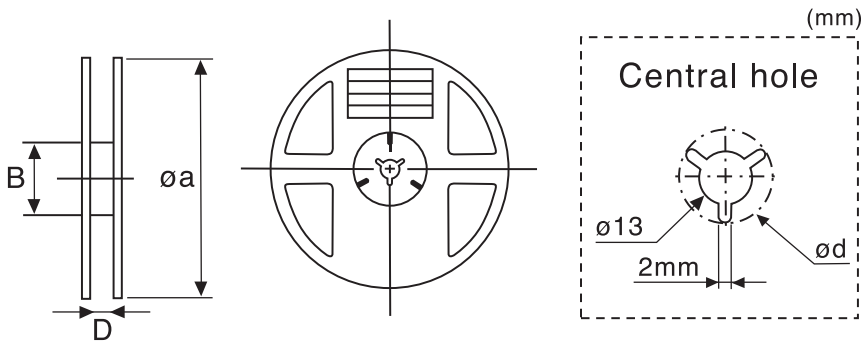
Parameter	Requirement Δ R	Test Method
Resistance	Within regulated tolerance	25°C
T.C.R.	Within specified T.C.R.	+25°C/+75°C
Short Time Overload	±(1.0% + 0.1Ω): 1J, 2A, 2B	Rated voltage x 2.5 or max. working voltage x 2 for 5 seconds, whichever is less
Resistance to Solder Heat		260°C ± 5°C, 10 seconds ± 1 second
Solderability	95% coverage minimum	235°C ± 5°C, 2 seconds ± 0.5 seconds
Bending Test	±(1.0% + 0.1Ω): 1J, 2A, 2B	Width of holding point 90mm, bending 3mm, 1 time
Temperature Cycling		-55°C (30 minutes), +125°C (30 minutes), 100 cycles
Moisture Resistance	±(3.0% + 0.1Ω): 1J, 2A, 2B	40°C ± 2°C, 90 - 95% RH, 1000 hours, rated voltage load
Load Life		70°C ± 3°C, 1000 hours, rated voltage load

**9. Packaging Specifications**



(Notes) Dotted lines are applicable to only "TP."

Dimensions - inches (mm)					
Style	A	B	W	P <sub>1</sub>	T <sub>1</sub>
2A	0.75±0.004 (1.9±0.1)	0.043±0.004 (1.1±0.1)	0.31±0.008 (8.0±0.2)	0.16±0.004 (4.0±0.1)	0.024+0.008/-0 (0.6+0.2/-0)
2B	0.94±0.008 (2.4±0.2)	0.065±0.008 (1.65±0.2)			0.03+0.008/-0 (0.75+0.2/-0)
1J	0.45±0.004 (1.15±0.1)	0.026±0.004 (0.65±0.1)		0.78±0.002 (2.0±0.05)	0.018+0.004/-0 (0.45+0.1/-0)



(Notes) Reel holes, shapes and design are examples

Dimensions - inches (mm)						
Style	Tape		øa	B	D	ød
2A	Punched Carrier	TD	7±.078 (178±2)	2.36±.078 (60±2)	0.35±.059 (9±1.5)	.83 (21)
2B						
1J						