

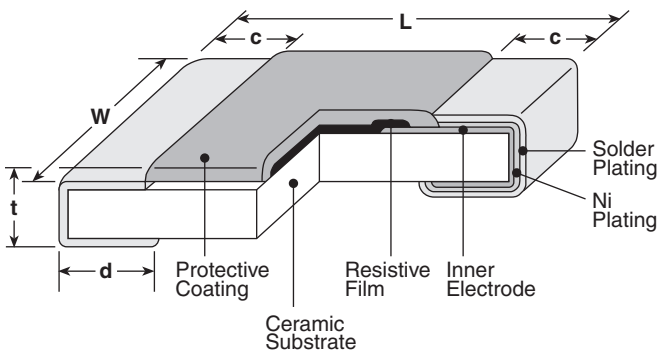
thermal protection



### features

- Twelve standard resistance values
- Marking: 1J no marking on pink body, 2A and 2B black three digit on pink body color
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.

### dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm)				
	L	W	c	d	t
<b>1J</b> (0603)	.063±.008 (1.6±0.2)	.031±.004 (0.8±0.1)	.012±.004 (0.3±0.1)	.012±.004 (0.3±0.1)	.02±.004 (0.5±0.1)
<b>2A</b> (0805)	.079±.008 (2.0±0.2)	.049±.004 (1.25±0.1)	.016±.008 (0.4±0.2)	.012 <sup>+0.008</sup> <sub>-0.004</sub> (0.3 <sup>+0.2</sup> <sub>-0.1</sub> )	.02 <sup>+0.008</sup> <sub>-0.004</sub> (0.5 <sup>+0.2</sup> <sub>-0.1</sub> )
<b>2B</b> (1206)	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.02±.008 (0.5±0.3)	.016 <sup>+0.008</sup> <sub>-0.004</sub> (0.4 <sup>+0.2</sup> <sub>-0.1</sub> )	.024±.004 (0.6±0.1)

### ordering information

New Part #	NT73	2A	T	TD	103	K	3800	J
Type		Size Code	Termination Material	Packaging	Nominal Resistance	Resistance Tolerance	B Constant Nominal	B Constant Tolerance
		1J: 0603 2A: 0805 2B: 1206	T: Sn (Other termination styles may be available, please contact factory for options)	TD: 7" paper tape (5,000 pieces/reel)	2 significant figures + 1 multiplier	J: ±5% K: ±10% L: ±15%	3200 3500 3700 3800 3950 4100	H: ±3% J: ±5% K: ±10%

### applications and ratings

Part Designation	Resistance @ 25°C	Resistance Tolerance	B Constant @ 25°C/75°C	B Constant Tolerance	Power Rating (mW)	Operating Temperature Range
NT731J	6.8kΩ	J: ±5% K: ±10%	3500K	±10%	5	-55°C to +125°C
	10kΩ			±5%		
	15kΩ			±3%		
	10kΩ		3800K	±5%		
	20kΩ					
	22kΩ					
	30kΩ					
	33kΩ					
	47kΩ					
	68kΩ					
100kΩ	4100K	±3%				
47kΩ						
NT732A	1kΩ	K: ±10% L: ±15%	3500K	±10%	5	
	2kΩ					
	2.2kΩ					
	2.4kΩ					
	3.3kΩ	J: ±5%; K: ±10% L: ±15%		±5%		
	4.7kΩ					
	4.7kΩ					
	5kΩ					

For further information on packaging, please refer to Appendix A.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

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**applications and ratings (continued)**

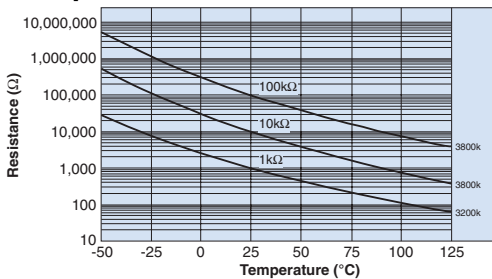
thermal protection

Part Designation	Resistance @ 25°C	Resistance Tolerance	B Constant @ 25°C/75°C	B Constant Tolerance	Power Rating (mW)	Operating Temperature Range		
NT732A	6.8kΩ	K: ±10%; L: ±15%	3800K	±10%	5	-55°C to +125°C		
	10kΩ		3500K					
	15kΩ		3800K				±5%	
	10kΩ		3800K					
	20kΩ							
	22kΩ							
	30kΩ							
	33kΩ							
	47kΩ							
	68kΩ							
	100kΩ							
	150kΩ							
	50kΩ			3950K				±3%
	10kΩ							
	15kΩ							
	20kΩ							
	22kΩ							
	30kΩ							
33kΩ	4100K	±3%						
47kΩ								
68kΩ								
100kΩ								
150kΩ								
1kΩ			K: ±10%; L: ±15%	3200K	±10%	5		
2.2kΩ	3500K							
3.3kΩ	3800K	±5%						
4.7kΩ								
6.8kΩ								
10kΩ								
22kΩ								
33kΩ			J: ±5%; K: ±10%; L: ±15%	3800K	±5%			
47kΩ								
68kΩ								
100kΩ								
150kΩ								
100kΩ								

Thermal dissipation constant - in the atmosphere - (reference) 1J: 2.0mW/°C, 2A: 2.8mW/°C, 2B: 3.0mW/°C

**environmental applications**

**Temperature Characteristics**



**RT/R25 Ratio vs. B Constant**

Resistance	1k Ω	5k Ω	10k Ω	100k Ω	10k Ω	Resistance	1k Ω	5k Ω	10k Ω	100k Ω	10k Ω
B Constant	3200K	3500K	3700K	3800K	4100K	B Constant	3200K	3500K	3700K	3800K	4100K
Temp. (°C)	Ω	k Ω	k Ω	k Ω	k Ω	Temp. (°C)	Ω	k Ω	k Ω	k Ω	k Ω
-55	38770	273.24	638.23	7692.5	1203.1	40	604.07	2.8809	5.5500	54.959	5.1999
-50	28840	197.67	465.81	5414.6	820.76	45	515.10	2.4202	4.6100	45.484	4.2349
-45	21706	144.85	343.25	3864.5	568.09	50	441.00	2.0421	3.8500	37.823	3.4692
-40	16517	107.43	255.22	2794.3	398.57	55	379.00	1.7302	3.2300	31.594	2.8585
-35	12698	80.577	191.37	2045.2	283.20	60	326.90	1.4718	2.7200	26.506	2.3692
-30	9857.0	61.077	144.64	1514.1	203.64	65	282.95	1.2568	2.3100	22.330	1.9721
-25	7721.2	46.759	110.13	1133.0	148.07	70	245.72	1.0771	1.9700	18.886	1.6504
-20	6100.5	36.137	83.710	856.49	108.37	75	214.08	0.92637	1.6800	16.035	1.3877
-15	4858.7	28.173	64.190	653.63	80.182	80	187.08	0.79937	1.4500	13.663	1.1724
-10	3899.0	22.147	49.640	503.31	59.943	85	163.96	0.69199	1.2500	11.682	0.99491
-5	3151.3	17.546	38.680	390.86	45.252	90	144.11	0.60087	1.0800	10.022	0.84926
0	2564.2	14.004	30.370	305.97	34.478	95	127.00	0.52329	0.94000	8.6257	0.72802
5	2099.9	11.256	23.970	241.34	26.473	100	112.21	0.45701	0.82000	7.4466	0.62662
10	1730.0	9.1063	19.070	191.73	20.506	105	99.377	0.40016	0.72000	6.4466	0.54156
15	1433.5	7.4135	15.270	153.36	16.016	110	88.224	0.35129	0.63000	5.5368	0.46982
20	1194.2	6.0712	12.320	123.46	12.608	115	78.501	0.30915	0.56000	4.8721	0.40906
25	1000.0	5.0000	10.000	100.00	10.000	120	70.004	0.27272	0.49000	4.2523	0.35741
30	841.48	4.1398	8.1700	81.470	7.9880	125	62.558	0.24114	0.44000	3.7207	0.31332
35	711.39	3.4451	6.7100	66.739	6.4242						

**Performance Characteristics**

Parameter	Requirement Δ R ±(%+0.05Ω)		Test Method
	Limit	Typical	
Resistance	Within specified tolerance	—	25°C
B Constant	Within specified tolerance	—	+25°C/+75°C
Resistance to Solder Heat	±1%, ±2%:1kΩ	±0.5%, ±1%:1kΩ	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±3.0%	±1.3%	-55°C (30 minutes), +125°C (30 minutes), 50 cycles
Moisture Resistance	±3.0%	±1.1%	40°C ± 2°C, 90 - 95% RH, 1000 hours
Load Life	±3.0%	±2.5%	80°C ± 3°C, DC5mW, 1000 hours
High Temperature Exposure	±3.0%	±1.6%	80°C, 1000 hours

Confirming resistance drift is recommended since this product has a tendency to have bigger resistance change than general flat chip over 80°C. Please pay attention not to be applied ESD, it may cause of resistance change.

**Actual Value (Out of Guarantee)**

Test Items	Reference	Test Method
High Temperature Exposure	±7.0%	125°C, 1000 hours
ESD	500V	Human model, 100 pF 1.5 kΩ