

SURFACE MOUNT NTC THERMISTORS

The Ketema Rodan KR series of surface mount thermistors are available in a multitude of resistance values ranging from 250 ohms to 150,000 ohms. Just as with the Ketema Rodan NTC disc thermistors, they are suitable for temperature sensing applications over a wide range of resistance values and temperature coefficients.

Features

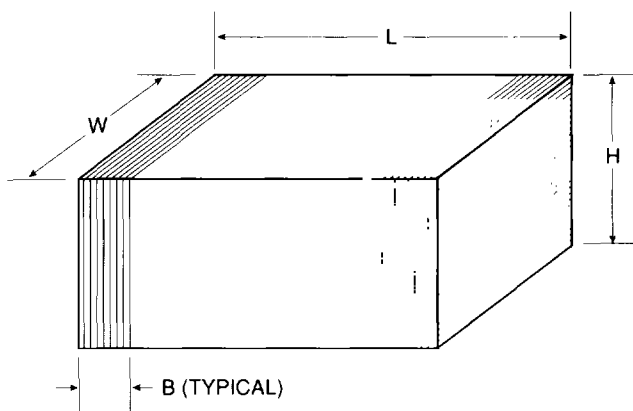
- Five-side wraparound terminations, material palladium-silver; Nickel Barrier available
- Fast thermal response time
- Wide range of values
- Highly accurate and stable
- Available taped and reeled
- Reflow solderable

Characteristics

- Operating temperature range: -55°C to +150°C
- Dissipation constant: 2 mW/°C
- Maximum power rating: 250 mW @ 25°C

Applications

- Hybrid circuits, temperature compensation
- Rechargeable battery packs
- Consumer appliances



Size

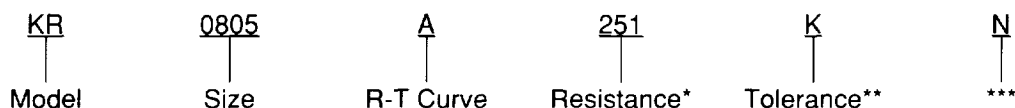
Size Units	0805		1206	
	Inches	Millimeters	Inches	Millimeters
W	0.049 ±0.008	1.240 ±0.200	0.063 ±0.008	1.600 ±0.200
H	0.051 Maximum	1.300 Maximum	0.059 Maximum	1.500 Maximum
L	0.079 ±0.008	2.000 ±0.200	0.126 ±0.008	3.200 ±0.200
B	0.008 Minimum	0.200 Minimum	0.008 Minimum	0.200 Minimum

Nonstandard values and sizes available upon request.

Standard Products

Part Number Size 0805	Part Number Size 1206	Resistance @ 25°C ±10%	Temperature Coefficient (α @ 25°C)
KR0805A251K	KR1206A251K	250 Ω	-3.3%/°C
KR0805A501K	KR1206A501K	500 Ω	-3.3%/°C
KR0805J102K	KR1206J102K	1.0K Ω	-3.5%/°C
KR0805J252K	KR1206J252K	2.5K Ω	-3.5%/°C
KR0805B502K	KR1206B502K	5.0K Ω	-3.9%/°C
KR0805B103K	KR1206B103K	10K Ω	-3.9%/°C
KR0805C253K	KR1206C253K	25K Ω	-4.4%/°C
KR0805C503K	KR1206C503K	50K Ω	-4.4%/°C
KR0805W104K	KR1206W104K	100K Ω	-4.7%/°C
KR0805W154K	KR1206W154K	150K Ω	-4.7%/°C

Ordering Information



* Resistance value: First two digits are resistance value, third is the number of zeroes. Example: 251 = 250 Ω.

** Tolerances available: K = ±10% and J = ±5%.

*** Terminations available: No letter = palladium silver, -N = nickel barrier.

NTC Resistance/Temperature Conversion Table

Temperature °C	R-T Curve A		R-T Curve B		R-T Curve C		R-T Curve J		R-T Curve W	
	R _T /R ₂₅	DEV	R _T /R ₂₅	DEV	R _T /R ₂₅	DEV	R _T /R ₂₅	DEV	R _T /R ₂₅	DEV
-60	43.0		75.0	6.6	140.5	6.6	52.5			
-55	31.9		54.1	6.1	96.4	6.1	39.0			
-50	24.3		39.7	5.6	67.0	5.6	29.2	18.5		
-45	18.6		29.2	5.2	47.2	5.2	22.1	17.0		
-40	14.4	7.6	21.7	4.7	33.7	4.7	16.9	15.4	40.2	7.6
-35	11.3	6.9	16.4	4.3	24.3	4.3	13.0	14.0	28.6	6.9
-30	8.93	6.2	12.5	3.8	17.7	3.8	10.1	12.5	20.6	6.2
-25	7.10	5.6	9.58	3.4	13.0	3.4	7.90	11.2	15.0	5.6
-20	5.69	5.0	7.42	3.0	9.71	3.0	6.24	9.9	11.0	5.0
-15	4.56	4.4	5.75	2.6	7.30	2.6	4.96	8.7	8.18	4.4
-10	3.68	3.7	4.50	2.2	5.53	2.2	3.97	7.4	6.12	3.7
-5	2.99	3.1	3.55	1.9	4.23	1.9	3.20	6.2	4.62	3.1
0	2.45	2.5	2.82	1.5	3.27	1.5	2.60	5.0	3.51	2.5
5	2.02	2.0	2.26	1.2	2.54	1.2	2.12	3.9	2.69	2.0
10	1.68	1.6	1.83	0.8	1.99	0.8	1.74	2.7	2.08	1.6
15	1.42	1.1	1.48	0.5	1.57	0.5	1.44	1.6	1.62	1.1
20	1.18	0.6	1.22	0.2	1.25	0.2	1.20	0.5	1.27	0.6
25	1.00	0.0	1.00	0.0	1.00	0.0	1.00	0.0	1.00	0.0
30	.854	0.6	.828	0.4	.806	0.4	.841	1.4	.794	0.6
35	.732	1.1	.689	0.7	.653	0.7	.710	2.3	.635	1.1
40	.628	1.6	.576	1.0	.533	1.0	.602	3.2	.510	1.6
45	.537	2.0	.482	1.3	.437	1.3	.513	4.3	.413	2.0
50	.464	2.5	.406	1.5	.360	1.5	.439	5.0	.336	2.5
55	.403	3.0	.343	1.8	.299	1.8	.377	5.9	.275	3.0
60	.350	3.4	.292	2.0	.249	2.0	.326	6.7	.226	3.4
65	.305	3.8	.247	2.3	.208	2.3	.282	7.5	.187	3.8
70	.267	4.2	.212	2.5	.175	2.5	.245	8.2	.155	4.2
75	.236	4.6	.182	2.8	.148	2.8	.214	9.0	.129	4.6
80	.208	4.9	.157	3.0	.126	3.0	.188	9.8	.108	4.9
85	.183	5.3	.137	3.2	.107	3.2	.165	10.5	.0912	5.3
90	.163	5.6	.120	3.4	.0916	3.4	.146	11.2	.0771	5.6
95	.145	6.0	.105	3.6	.0787	3.6	.129	11.9	.0654	6.0
100	.130	6.3	.0920	3.8	.0679	3.8	.114	12.6	.0557	6.3
105	.117	6.7	.0812	4.0	.0588	4.0	.102	13.3	.0476	6.7
110	.105	7.0	.0723	4.2	.0511	4.2	.0908	13.9	.0408	7.0
115	.0943	7.3	.0641	4.4	.0445	4.4	.0813	14.4	.0351	7.3
120	.0852	7.6	.0569	4.6	.0389	4.6	.0730	14.9	.0303	7.6
125	.0771	7.9	.0508	4.8	.0342	4.8	.0657	15.6	.0263	7.9
130	.0700	8.2	.0455	4.9	.0301	4.9	.0593	16.3	.0228	8.2
135	.0636	8.4	.0408	5.1	.0265	5.1	.0536	17.0	.0199	8.4
140	.0579	8.6	.0368	5.3	.0235	5.3	.0486	17.6	.0173	8.6
145	.0529	9.0	.0332	5.4	.0208	5.4	.0442	18.0	.0152	9.0
150	.0483	9.3	.0300	5.5	.0185	5.5	.0402	18.4	.0133	9.3

NTC Resistance/Temperature Curve Characteristics

R-T Curve	A	B	C	J	W
Temperature Coefficient α @ 25°C	-3.3%/°C	-3.9%/°C	-4.4%/°C	-3.5%/°C	-4.7%/°C
Beta, β	3000°K	3530°K	3965°K	3200°K	4250°K
R ₀ °C R ₅₀ °C	5.3±5%	6.9±3%	9.1±3%	5.9±5%	10.45±5%
R ₂₅ °C R ₁₂₅ °C	13.0	19.8	29.4	15.2	38.0

Resistance at Temperature

To determine the nominal resistance value of a thermistor at a specified temperature, multiply its R_T/R₂₅ value for the desired temperature and R-T Curve from the table above by its nominal resistance value at 25°C. For instance, the nominal resistance value at 80°C for a thermistor with part number KR0805B103K is 10,000 times 0.157, the R_T/R₂₅ value in the R-T Curve B table above, or 1,570 ohms.

Resistance Tolerances

The standard resistance tolerance at 25°C for Ketema Rodan NTC thermistors is ±10% and is indicated in its part number by addition of the suffix K. However, Ketema Rodan thermistors may also be supplied with other resistance tolerances. To determine a thermistor's resistance at a temperature other than 25°C, add the appropriate DEV value from the Conversion Table above to its resistance tolerance at 25°C. For instance, the resistance tolerance at 80°C for a thermistor with part number KR0805B103K is 10% + 3.0%, the DEV value from the R-T Curve B table above, or ±13%.