

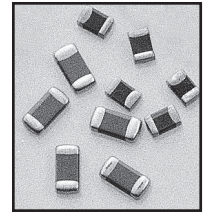
## FEATURES

- NEGATIVE TEMPERATURE COEFFICIENT
- FAST RESPONSE TO TEMPERATURE VARIATIONS MAKE THEM IDEALLY FOR TEMPERATURE SENSORS AND COMPENSATORS
- **AEC-Q200 QUALIFIED (SEE PART NUMBER SYSTEM)**
- STANDARD EIA 0402, 0603 AND 0805 SIZES
- NICKEL BARRIER SOLDER PLATE TERMINATIONS
- TAPE AND REEL FOR AUTOMATIC MOUNTING

**RoHS  
Compliant**

includes all homogeneous materials

\*See Part Number System for Details



## CHARACTERISTICS AND PERFORMANCE

Series	NCT04	NCT06	NCT08
EIA Size	0402	0603	0805
Resistance Range (+25°C)	120Ω ~ 820KΩ	82Ω ~ 1.6MΩ	47Ω ~ 470KΩ
Resistance Tolerance (+25°C)	1% (F), ±2% (G), ±3% (H), 5% (J), 10% (K)		
Operating Temperature Range	-40°C ~ +125°C		
Storage Temperature Range	-40°C ~ +125°C		
Maximum Power Rating (JIS-C2570)*	110mW	120mW	130mW
Dissipation Factor	≤1.5mW/°C (power to heat thermistor 1°C, measured at 25°C)		
Thermal Time Constant	Within 5 seconds (time to change 63.2% from initial to stable)		
Functional Beta Temperature Range	D = +25°C ~ +50°C		
	A = +25°C ~ +85°C		
	E = +25°C ~ +100°C		
Beta Value Range	2410K ~ 4800K		
Beta Value Tolerance	±1% (F), ±2% (G), ±3% (H), ±5% (J)		
Resistance to Soldering Heat	+260°C ± 5°C for 10 ±1 seconds		
High Temperature Stability	+125°C ± 3°C for 1,000 hours, ΔR ±3%, ΔBeta ±2%		
Low Temperature Stability	-40°C ± 3°C for 1,000 hours, ΔR ±3%, ΔBeta ±2%		
Humidity	+85°C ± 2°C, 85% ±5% RH for 1,000 hours, ΔR ±3%, ΔBeta ±2%		
Temperature Cycling	100 cycles of -40°C ±3°C 30 min., +20°C 3 min., +125°C ±3°C 30 min., +20°C 30 min. ΔR ±3%, ΔBeta ±2%		

\*JIS-C2570: Maximum power for continuous load at 25°C.

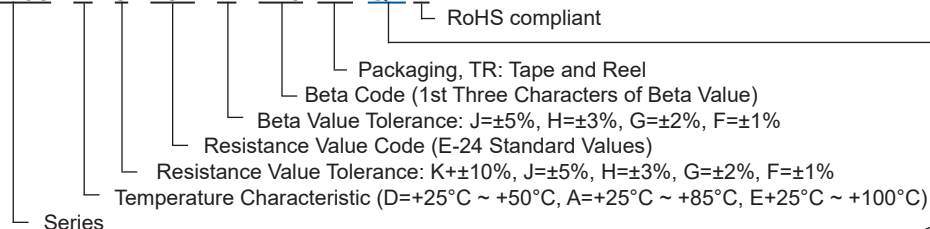
## STANDARD RESISTANCE VALUES (@25°C) AND BETA RANGE\*

Beta Value	NCT04 (0402)	NCT06 (0603)	NCT08 (0805)	E-24 Standard Values		
4610 ~ 4800K	75K ~ 820K	47K ~ 1.6M	24K ~ 470K			
4410 ~ 4600K	24K ~ 470K	15K ~ 910K	8.2K ~ 430K			
4210 ~ 4400K	9.1K ~ 110K	6.2K ~ 200K	3K ~ 91K	1.0	1.1	1.2
4010 ~ 4200K	7.5K ~ 100K	4.7K ~ 200K	2.7K ~ 91K	1.3	1.5	1.6
3810 ~ 4000K	3.6K ~ 62K	2.4K ~ 110K	1.2K ~ 51K	1.8	2.0	2.2
3610 ~ 3800K	2K ~ 30K	1.2K ~ 56K	620 ~ 27K	2.4	2.7	3.0
3410 ~ 3600K	1.8K ~ 30K	1.1K ~ 56K	620 ~ 27K	3.3	3.6	3.9
3210 ~ 3400K	2.4K ~ 22K	1.5K ~ 43K	750 ~ 18K	4.3	4.7	5.1
3010 ~ 3200K	1.1K ~ 10K	750 ~ 20K	390 ~ 9.1K	5.6	6.2	6.8
2810 ~ 3000K	560 ~ 5.1K	360 ~ 10K	180 ~ 4.3K	7.5	8.2	9.1
2610 ~ 2800K	270 ~ 2.4K	160 ~ 4.7K	100 ~ 2K			
2410 ~ 2600K	120 ~ 1.2K	82 ~ 2.2K	47 ~ 1K			

\*Beta can be ordered in increments of 10 (ex. 2610, 2620, 2630, etc.)

## PART NUMBER SYSTEM

NCT06 D J 154 H 410 TR QY F

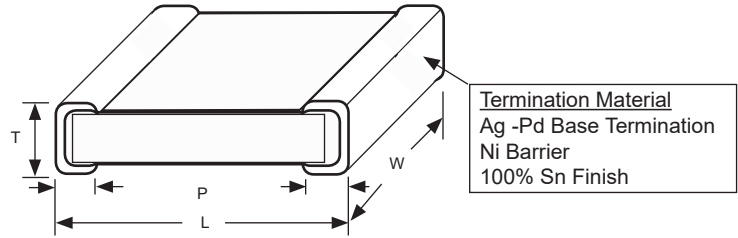


"QY" denotes optional AEC-Q200 qualified parts suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site



## DIMENSIONS (mm)

Series	EIA Size	L	W	T max.	P
NCT04	0402	1.0 ± 0.05	0.50 ± 0.05	0.40	0.25 <sup>+0.05/</sup> <sub>-0.10</sub>
NCT06	0603	1.6 ± 0.15	0.80 ± 0.15	0.60	0.30 ± 0.20
NCT08	0805	2.0 ± 0.20	1.25 ± 0.20	0.65	0.40 ± 0.20



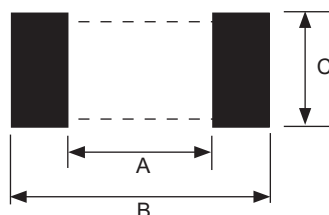
## R-T TABLES FOR 1K, 10K AND 100K OHM\*

Temp (°C)	R:1KΩ B:2750K	R:1KΩ B:3000K	R:1KΩ B:3200K	R:10KΩ B:3450K	R:10KΩ B:3700K	R:10KΩ B:3900K	R:10KΩ B:4100K	R:100KΩ B:4300K	R:100KΩ B:4500K	R:100KΩ B:4700K
-40	11,290	14,270	17,200	217,300	274,600	331,000	399,100	4,812,000	5,802,000	6,995,000
-35	9,012	11,130	13,180	162,800	201,100	238,200	282,000	3,339,000	3,954,000	4,682,000
-30	7,248	8,761	10,200	123,300	149,000	173,400	201,800	2,349,000	2,734,000	3,182,000
-25	5,872	6,953	7,959	94,240	111,600	127,700	146,200	1,674,000	1,916,000	2,193,000
-20	4,791	5,561	6,265	72,720	84,410	95,100	107,100	1,207,000	1,360,000	1,532,000
-15	3,935	4,481	4,972	56,620	64,470	71,530	79,370	880,600	977,100	1,084,000
-10	3,253	3,636	3,976	44,450	49,690	54,330	59,400	649,400	710,000	776,300
-5	2,705	2,971	3,202	35,170	38,630	41,640	44,890	483,900	521,600	562,200
0	2,262	2,443	2,597	28,040	30,280	32,200	34,240	364,000	387,100	411,600
5	1,902	2,020	2,120	22,520	23,920	25,100	26,340	276,400	290,100	304,400
10	1,608	1,681	1,742	18,210	19,040	19,730	20,440	211,800	219,400	227,400
15	1,366	1,406	1,440	14,820	15,260	15,620	15,990	163,600	167,500	171,400
20	1,166	1,183	1,197	12,140	12,310	12,450	12,600	127,400	128,900	130,400
25	1,000	1,000	1,000	10,000	10,000	10,000	10,000	100,000	100,000	100,000
30	861	850	840	8,286	8,172	8,082	7,993	79,050	78,180	77,320
35	745	725	709	6,903	6,718	6,573	6,432	62,930	61,580	60,250
40	647	622	602	5,782	5,554	5,378	5,208	50,440	48,840	47,300
45	564	535	513	4,867	4,617	4,426	4,243	40,680	39,000	37,390
50	494	463	439	4,116	3,858	3,663	3,477	33,020	31,350	29,760
55	434	402	378	3,498	3,240	3,047	2,866	26,950	25,350	23,840
60	382	350	326	2,986	2,734	2,548	2,375	22,130	20,620	19,220
65	338	306	283	2,560	2,318	2,141	1,978	18,270	16,880	15,590
70	300	269	246	2,203	1,974	1,808	1,656	15,160	13,880	12,720
75	267	237	215	1,904	1,688	1,533	1,392	12,650	11,480	10,430
80	238	209	188	1,652	1,450	1,306	1,177	10,600	9,548	8,601
85	213	185	166	1,439	1,251	1,118	999	8,927	7,978	7,130
90	192	165	146	1,258	1,083	960	852	7,552	6,698	5,940
95	172	147	129	1,103	941	828	729	6,417	5,649	4,972
100	156	132	115	971	821	717	627	5,476	4,785	4,182
105	141	118	102	858	718	623	541	4,692	4,072	3,533
110	128	106	92	760	631	544	469	4,037	3,479	2,998
115	116	96	82	675	556	476	407	3,486	2,984	2,554
120	106	87	74	602	492	418	355	3,022	2,570	2,186
125	97	79	66	538	436	368	311	2,630	2,222	1,877

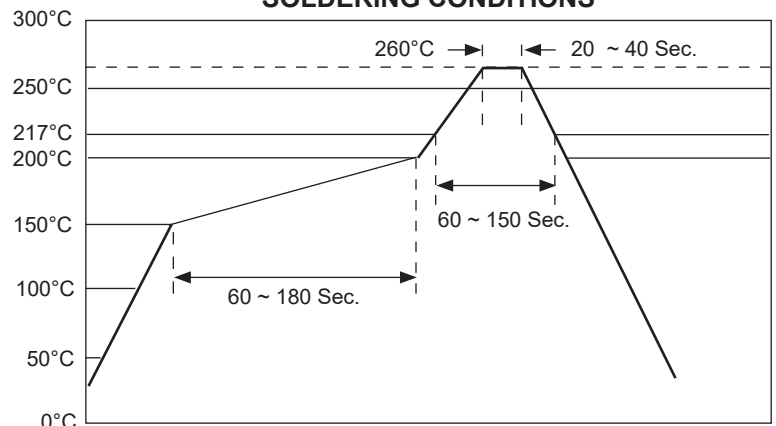
\*R-T tables available for other resistance/beta values upon request

## LAND PATTERN DIMENSIONS (mm)

Type	EIA Size	A	B	C
NCT04	0402	0.50	1.3	0.5
NCT06	0603	0.9	2.6	0.7
NCT08	0805	1.35	3.45	1.1

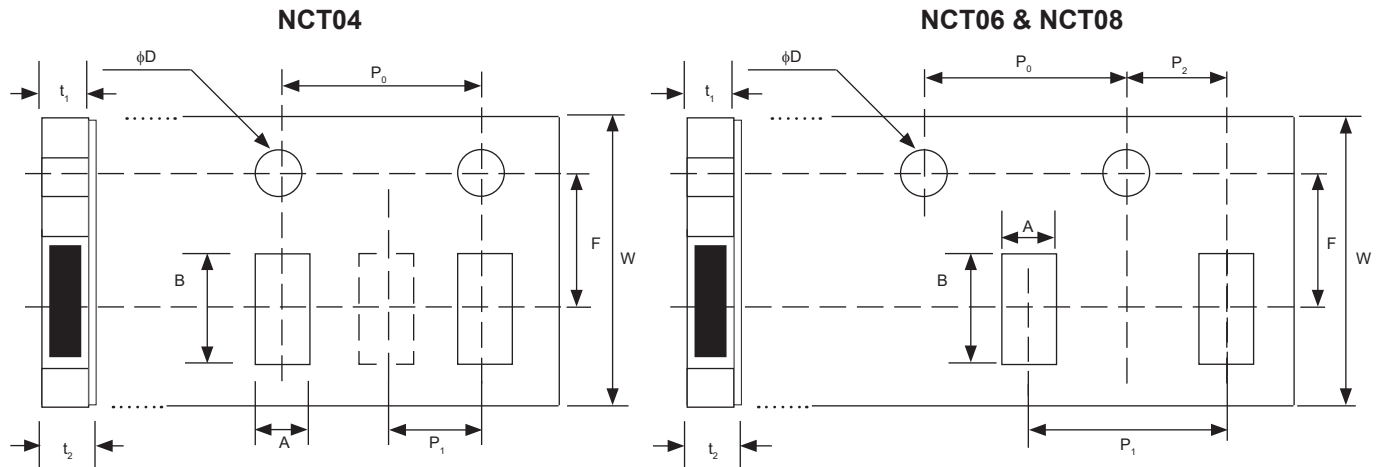


## PEAK REFLOW SOLDERING CONDITIONS



## CARRIER TAPE DIMENSIONS (mm)

Type	A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	φD	T <sub>1</sub>	T <sub>2</sub>
NCT04	0.65 ±0.10	1.15 ±0.10	8.00 ±0.20	3.50 ±0.05	1.75 ±0.10	2.00 ±0.05	N/A	4.00 ±0.10	1.55 ±0.05	0.50 max.	1.00 max.
NCT06	1.10 ±0.20	1.90 ±0.20				4.00 ±0.05	2.00 ±0.05			1.00 max.	1.40 max.
NCT08	1.65 ±0.20	2.40 ±0.20									



## REEL DIMENSIONS (mm) AND QUANTITY

Type	A +0/-3	B +1/-0	C ±0.20	W ±0.3	Quantity
NCT04	180	60	13	9.0	10,000
NCT06					5,000
NCT08					5,000

