

### FEATURES

- NEGATIVE TEMPERATURE COEFFICIENT
- FAST RESPONSE TO TEMPERATURE VARIATIONS MAKE THEM IDEALLY FOR TEMPERATURE SENSORS AND COMPENSATORS
- 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                            | NCT02   | NCT04             | NCT06             | NCT08             |
|-----------------------------------|---|-------------------|-------------------|-------------------|
| EIA Size                          | 0201  | 0402              | 0603              | 0805              |
| Resistance Range (+25°C)          | 470 ohm ~ 1Megohm   | 470 ohm ~ 2Megohm | 100 ohm ~ 2Megohm | 100 ohm ~ 2Megohm |
| 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   | 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                  | 2610K ~ 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.<br>ΔR ±3%, ΔBeta ±2% |                   |                   |                   |

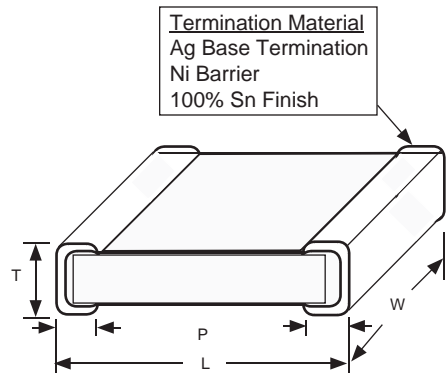
\*JIS-C2570: Maximum power for continuous load at 25°C.

### DIMENSIONS (mm)

| Series | EIA Size | L           | W           | T max.      | P                           |
|--------|----------|-------------|-------------|-------------|-----------------------------|
| NCT02  | 0201     | 0.60 ± 0.03 | 0.30 ± 0.03 | 0.23 ± 0.03 | 0.15 ± 0.05                 |
| NCT04  | 0402     | 1.0 ± 0.05  | 0.50 ± 0.05 | 0.40        | 0.25 <sup>+0.05/-0.10</sup> |
| 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                 |

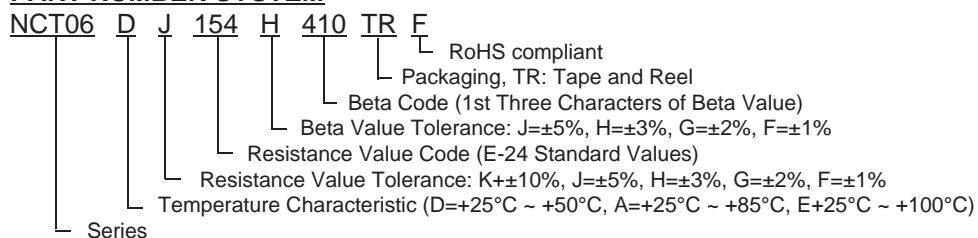
### STANDARD RESISTANCE VALUES (@25°C) AND BETA RANGE\*

| Beta Value   | NCT02 (0201) | NCT04 (0402) | NCT06 (0603) | NCT08 (0805) | E-24 Standard Values |     |     |
|--------------|--------------|--------------|--------------|--------------|----------------------|-----|-----|
|              |              |              |              |              | 1.0                  | 1.1 | 1.2 |
| 4610 ~ 4800K | 100K ~ 1M    | 100K ~ 2M    | 68K ~ 2M     | 47K ~ 2M     |                      |     |     |
| 4410 ~ 4600K | 30K ~ 150K   | 10K ~ 2M     | 10K ~ 2M     | 10K ~ 2M     |                      |     |     |
| 4210 ~ 4400K | 20K ~ 120K   | 10K ~ 2M     | 10K ~ 2M     | 6.8K ~ 2M    | 1.0                  | 1.1 | 1.2 |
| 4010 ~ 4200K | 10K ~ 100K   | 10K ~ 220K   | 1K ~ 220K    | 1K ~ 220K    | 1.3                  | 1.5 | 1.6 |
| 3810 ~ 4000K | 10K ~ 50K    | 2K ~ 150K    | 1K ~ 150K    | 1K ~ 150K    | 1.8                  | 2.0 | 2.2 |
| 3610 ~ 3800K | 6.8K ~ 30K   | 2K ~ 150K    | 1K ~ 150K    | 1K ~ 150K    | 2.4                  | 2.7 | 3.0 |
| 3410 ~ 3600K | 2K ~ 20K     | 2K ~ 150K    | 1K ~ 150K    | 1K ~ 150K    | 3.3                  | 3.6 | 3.9 |
| 3210 ~ 3400K | 2K ~ 20K     | 2K ~ 150K    | 1K ~ 150K    | 680 ~ 150K   | 4.3                  | 4.7 | 5.1 |
| 3010 ~ 3200K | 1K ~ 5K      | 680 ~ 68K    | 470 ~ 150K   | 220 ~ 150K   | 5.6                  | 6.2 | 6.8 |
| 2810 ~ 3000K | 1K ~ 3K      | 500 ~ 47K    | 150 ~ 100K   | 100 ~ 100K   | 7.5                  | 8.2 | 9.1 |
| 2610 ~ 2800K | 470 ~ 1.5K   | 100 ~ 10K    | 100 ~ 1K     | 100 ~ 1K     |                      |     |     |



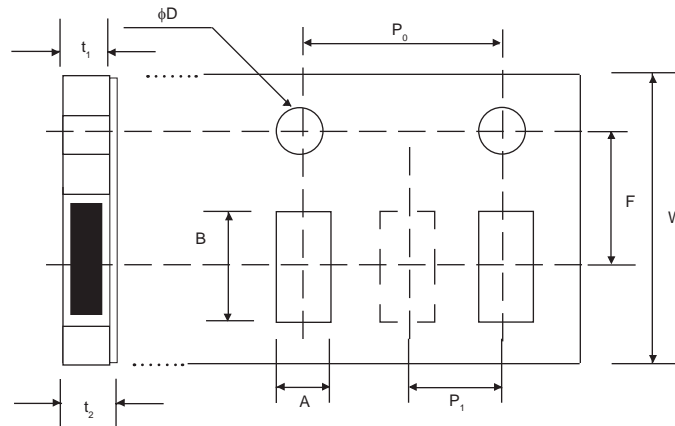
\*Beta can be ordered in increments of 10 (ex. 2610, 2620, 2630, etc.)

### PART NUMBER SYSTEM



### CARRIER TAPE DIMENSIONS (mm)

| Type  | A          | B          | W          | F          | E          | P <sub>1</sub> | P <sub>0</sub> | φD         | T <sub>1</sub> | T <sub>2</sub> |
|-------|------------|------------|------------|------------|------------|----------------|----------------|------------|----------------|----------------|
| NCT02 | 0.68 ±0.20 | 0.38 ±0.02 | 8.00 ±0.20 | 3.50 ±0.05 | 1.75 ±0.10 | 2.00 ±0.05     | 4.00 ±0.10     | 1.55 ±0.05 | 0.42 ±0.02     | 0.50 max.      |
| NCT04 | 0.65 ±0.10 | 1.15 ±0.10 |            |            |            | 4.00 ±0.05     |                |            | 0.50 max.      | 1.00 max.      |
| NCT06 | 1.10 ±0.20 | 1.90 ±0.20 |            |            |            | 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 |
|-------|---------|---------|---------|--------|----------|
| NCT02 |         |         |         |        |          |
| NCT04 | 180     | 60      | 13      | 9.0    | 10,000   |
| NCT06 |         |         |         |        | 5,000    |
| NCT08 |         |         |         |        |          |

