## **FEATURES**

- STANDARD EIA 1206 & 0805 PACKAGING
- EACH COMPONENT CONTAINS 4 ISOLATED CERAMIC CAPACITORS
- AVAILABLE IN A WIDE RANGE OF VALUES AND TEMPERATURE COEFFICIENTS

# RoHS Compliant

Includes all homogeneous materials

\*See Part Number System for Details

| SPECIFICATIONS                         | NPO              | X7R                              | X5R               | Y5V             |  |  |  |
|--|------------------|----------------------------------|-------------------|-----------------|--|--|--|
| OPERATING<br>TEMPERATURE               | -55°C~ +125°C    | -55°C~ +125°C                    | -55°C~ +85°C      | -30°C~ +85°C    |  |  |  |
| CAPACITANCE RANGE                      | 10pF ~ 1000pF    | 100pF ~ 0.1μF                    | 0.1μF             | 0.01μF ~ 0.33μF |  |  |  |
| VOLTAGE RANGE                          |                  | SEE VALUE                        | SEE VALUES TABLES |                 |  |  |  |
| CAPACITANCE<br>TOLERANCE               | ±5% (J), ±10%(K) | ±10%(K), ±20%(M)                 | ±10%(K), ±20%(M)  | +80%/-20% (Z)   |  |  |  |
| TEMPERATURE<br>CHARACTERISTICS         | 0±30ppm          | ±15%                             | ±15%              | +30% ~ -80%     |  |  |  |
| DIELECTRIC<br>WITHSTANDING VOLTAGE     |                  | 2.5 x Rated Voltage for 1 minute |                   |                 |  |  |  |
| INSULATION RESISTANCE (after 1 minute) | >10GΩ            | >10GΩ                            | >10GΩ             | >10GΩ           |  |  |  |
| DISSIPATION FACTOR                     | <u>&lt;</u> 0.1% | <u>&lt;</u> 5%                   | <u>&lt;</u> 5%    | <u>&lt;</u> 7%  |  |  |  |

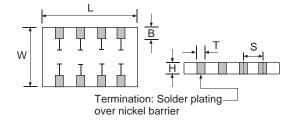
### STANDARD VALUES AND VOLTAGES

|          |                         | NPO                   |    |       | X7R |    |    |    | Y5V    |    |    |        |
|----------|-------------------------|-----------------------|----|-------|-----|----|----|----|--------|----|----|--------|
| Cap.     |                         | Working Voltage (Vdc) |    |       |     |    |    |    |        |    |    |        |
|          | 16                      | 25                    | 50 | 100   | 10  | 16 | 25 | 50 | 100    | 16 | 25 | 50     |
| 10pF     | ‡                       | ¤‡                    | ¤‡ | ‡     |     |    |    |    |        |    |    |        |
| 22pF     | ‡                       | ¤‡                    | ¤‡ | ‡     |     |    |    |    |        |    |    |        |
| 33pF     | ‡                       | ¤‡                    | ¤‡ | ‡     |     |    |    |    |        |    |    |        |
| 47pF     | ‡                       | ¤‡                    | ¤‡ | ‡     |     |    |    |    |        |    |    |        |
| 68pF     | ‡                       | ¤‡                    | ¤‡ | ‡     |     |    |    |    |        |    |    |        |
| 82pF     | ‡                       | ¤‡                    | ¤‡ | ‡     |     |    |    |    |        |    |    |        |
| 100pF    | ¤‡                      | ¤‡                    | ¤‡ | ‡     |     | ¤  | ¤  |    |        |    |    |        |
| 220pF    | ¤‡                      | ‡                     | ‡  | ‡     |     | ¤  | ¤  |    |        |    |    |        |
| 330pF    | ‡                       | ‡                     | ‡  | ‡     |     | ¤  | ¤  | ‡  |        |    |    |        |
| 470pF    | ‡                       | ‡                     | ‡  |       |     | ¤‡ | ¤‡ | ‡  | #      |    |    |        |
| 680pF    | ‡                       | ‡                     |    |       |     | ¤‡ | ¤‡ | ‡  | #      |    |    |        |
| 820pF    | ‡                       | ‡                     |    |       |     | ¤‡ | ¤‡ | ‡  | ‡      |    |    |        |
| .001μF   | ‡                       | ‡                     |    |       |     | ¤‡ | ¤‡ | ‡  | ‡<br>‡ |    |    |        |
| .0022μF  |                         |                       |    |       |     | ¤‡ | ¤‡ | ‡  | ‡      |    |    |        |
| .0033μF  |                         |                       |    |       |     | ¤‡ | ¤  | ‡  | ‡      |    |    |        |
| .0047μF  |                         |                       |    |       |     | ¤‡ | ¤  | ‡  | ‡      |    |    |        |
| .0068μF  |                         |                       |    |       |     | ¤‡ | ¤  | ‡  | ‡      |    |    |        |
| .0082μF  |                         |                       |    |       |     | ¤‡ | ‡  | ‡  | ‡      |    |    |        |
| .01μF    |                         |                       |    |       | ¤   | ¤‡ | ‡  | ‡  | ‡      | ‡  | ‡  | ‡      |
| .022μF   |                         |                       |    |       | ¤   | ‡  | ‡  | ‡  |        | ‡  | ‡  | ‡<br>‡ |
| .033μF   |                         |                       |    |       | ¤   | ‡  | ‡  | ‡  |        | ‡  | ‡  | ‡      |
| .047μF   |                         |                       |    |       | ¤   | ‡  | ‡  |    |        | ‡  | ‡  | ‡      |
| .068μF   |                         |                       |    |       | ¤   | ‡  | ‡  |    |        | ‡  | ‡  |        |
| .082μF   |                         |                       |    |       | ¤   | ‡  |    |    |        | ‡  | ‡  |        |
| 0.1μF    |                         |                       |    |       | ¤*  | ‡  |    |    |        | ‡  | ‡  |        |
| 0805 Val | 805 Values   p   1206 ' |                       |    | /alue | s   | ‡  |    |    |        |    |    |        |

<sup>\*</sup> X5R TC -55°C  $\sim$  +85°C

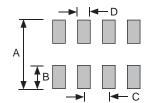
## PART DIMENSIONS (mm)

| Series | NCA0805     | NCA1206         |  |  |
|--------|-------------|-----------------|--|--|
| L      | 2.00 ± 0.20 | 3.20 ± 0.20     |  |  |
| W      | 1.25 ± 0.20 | 1.60 ± 0.20     |  |  |
| Н      | 1.00 max.   | 1.30 max.       |  |  |
| S      | 0.50 ± 0.10 | $0.80 \pm 0.20$ |  |  |
| Т      | 0.28 ± 0.10 | $0.40 \pm 0.10$ |  |  |
| В      | 0.25 ±0.15  | $0.30 \pm 0.20$ |  |  |



## **RECOMMENDED LAND PATTERN (mm)**

| Series  | А           | В               | С              | D             |  |
|---------|-------------|-----------------|----------------|---------------|--|
| NCA0805 | 1.65 ± 0.10 | $0.55 \pm 0.05$ | $0.5 \pm 0.05$ | $0.25 \pm 05$ |  |
| NCA1206 | 2.60 ± 0.10 | $0.80 \pm 0.05$ | $0.8 \pm 0.10$ | 0.45 ±0.1     |  |



Series

Ε

W

# PART NUMBER SYSTEM NCA 0805 X7R 103 K 10 TRP F RoHS compliant Tape & Reel (Paper carrier) Voltage (Vdc) Capacitance Tolerance Code (see chart) Capacitance Code, expressed in pF, first 2 digits are significant, 3rd digit is no. of zeros, "R" indicates ecimal for under 10pF Temperature Characteristic Size Code (see chart)

# **TAPE DIMENSIONS (mm)**

|  | $A_0$      | B <sub>0</sub> | F          | G         | K         | P₀       | P <sub>1</sub> | P <sub>2</sub> | Т        | W        |
|--|------------|----------------|------------|-----------|-----------|----------|----------------|----------------|----------|----------|
|  | See note 1 |                | 3.50 ±0.05 | 1.75 ±0.1 | 2.50 max. | 4.0 ±0.1 | 4.0 ±0.1       | 2.0 ±0.05      | 0.6 max. | 8.0 ±0.3 |

Note 1 - These dimensions are deterined by the maximum dimensions of the part. Clearance between the sides of the components shall be 0.05mm (min.) and 0.50mm (max). The clearance shall not allow the component to rotate more than 20° within the carrier cavity.

