

### TEMPERATURE COMPENSATING AND TEMPERATURE STABLE TYPES (CLASS I)

#### FEATURES

- PROVIDES AN ACCURATE, PREDICTABLE LINEAR CAPACITANCE CHANGE WITH VARIATIONS IN OPERATING TEMPERATURE
- NPO TYPES PROVIDE DRIFT FREE PERFORMANCE
- TIGHT TOLERANCES AVAILABLE
- AVAILABLE WITH FORMED LEADS AND ON TAPE FOR AUTOMATIC INSERTION

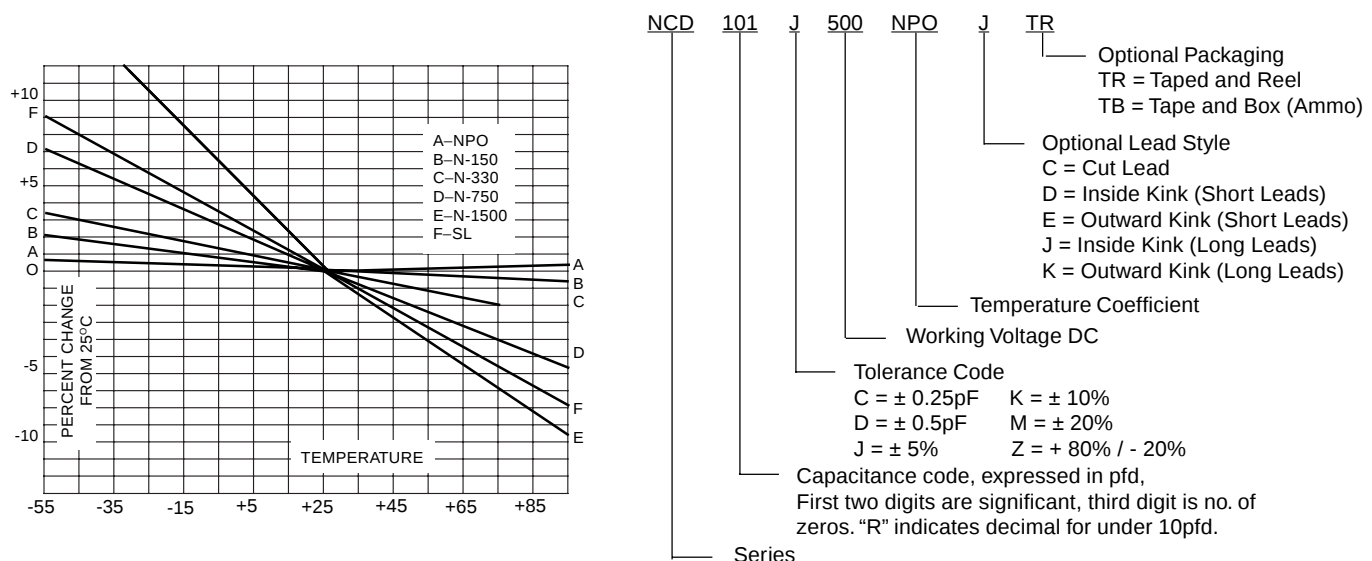


LEADED

#### SPECIFICATIONS

| Temperature Characteristics                    |                | NPO                                                              | N150                                    | N470                                    | N750                                    | SL                                      | N1500                                  | N3300                                  |
|------------------------------------------------|----------------|------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------------------------|
| Operating Temperature Range                    |                | -30° ~ +85°C                                                     |                                         |                                         |                                         |                                         |                                        |                                        |
| Capacitance Range                              |                | 0.5~470pF                                                        | 3~220pF                                 | 3~150pF                                 | 22~470pF                                | 0.5~1000pF                              | 22~1000pF                              | 47 ~ 1000pF                            |
| Standard Tolerance                             |                | J=+/-5%                                                          | J=+/-5%                                 | J=+/-5%                                 | J=+/-5%                                 | J=+/-5%                                 | J=+/-5%                                | J=+/-5%                                |
| Capacitance Change Over Temperature Range      |                | ±1%                                                              | -1~ +2%                                 | -2~ +3.5%                               | -5~ +7.5%                               | -6~ +9%                                 | -10~ +20%                              | -13~ +12%                              |
| Q Factor (Min. 1MHz)                           |                | 1000(C≥30pfd)<br>400 + 20C<br>(C<30pfd)                          | 1000(C≥30pfd)<br>400 + 20C<br>(C<30pfd) | 1000(C≥30pfd)<br>400 + 20C<br>(C<30pfd) | 1000(C≥30pfd)<br>400 + 20C<br>(C<30pfd) | 1000(C≥30pfd)<br>400 + 20C<br>(C<30pfd) | 500(C≥30pfd)<br>200 + 10C<br>(C<30pfd) | 500(C≥30pfd)<br>200 + 10C<br>(C<30pfd) |
| Insulation Resistance                          |                | Minimum 10,000 Megohms                                           |                                         |                                         |                                         |                                         |                                        |                                        |
| Temperature Coefficient                        |                | 0±60PPM                                                          | N150±60PPM                              | N470±60PPM                              | N750±120PPM                             | N330±500PPM                             | N1500±250PPM                           | N3300±500PPM                           |
| Working Voltage Range                          |                | 50 Vdc ~ 1K Vdc                                                  |                                         |                                         |                                         |                                         |                                        |                                        |
| Dielectric Withstanding Voltage (Test Voltage) |                | 2.5 Times Rated Voltage For Not Less Than 1 Second, 50mA maximum |                                         |                                         |                                         |                                         |                                        |                                        |
| Load Life                                      | Cap. Change    | ±3%                                                              | ±5%                                     | ±8%                                     | ±15%                                    | ±30%                                    | ±50%                                   | ±50%                                   |
| Test 85°C<br>1000 Hrs                          | Q Factor (Min) | Shall Conform To Initial Measurements Above                      |                                         |                                         |                                         |                                         |                                        |                                        |
|                                                | I.R. (Min)     | 10,000 Megohms                                                   |                                         |                                         |                                         |                                         |                                        |                                        |
| Test Conditions                                |                | ≤ 1,000 pF; 1Mhz, 1.2Vrms Max. >1,000 pF; 1Khz, 1.2Vrms Max.     |                                         |                                         |                                         |                                         |                                        |                                        |

#### PART NUMBERING SYSTEM



| Lead Spacing (mm) - S |                |                |                |                |
|-----------------------|----------------|----------------|----------------|----------------|
| Body Diameter         | Standard Bulk  | Standard T & R | Optional Bulk  | Optional T & R |
| 5 ~ 11                | 6.35 $\pm$ 0.8 | 5.0 $\pm$ 0.8  | 5.0 $\pm$ 0.8  | 2.5 $\pm$ 0.8  |
| $\geq 12$             | 6.35 $\pm$ 0.8 | 5.0 $\pm$ 0.8  | 7.5 $\pm$ 0.8  | 7.5 $\pm$ 0.8  |
|                       |                |                | 10.0 $\pm$ 0.8 | 10.0 $\pm$ 0.8 |

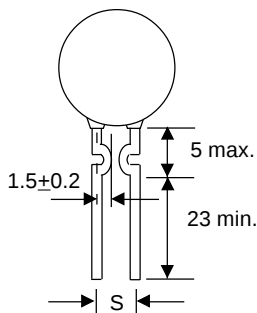
### LEAD DIAMETER

0.6MM IS STANDARD

### BODY THICKNESS

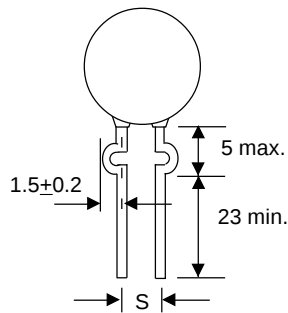
2 ~ 4MM DEPENDENT ON CV

#### J Style

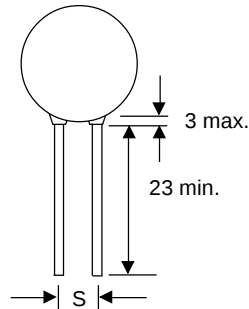


(BULK AND TAPED STYLES)

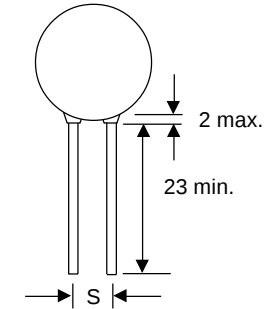
#### K Style



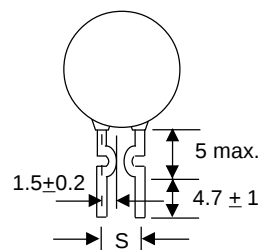
#### Standard 500Vdc & Up



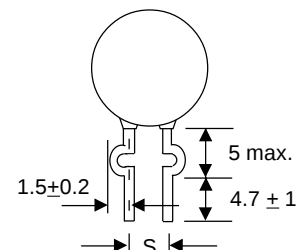
#### Low Voltage 100Vdc & Below



#### D Style



#### E Style



(BULK ONLY)

### STANDARD PRODUCTS AND MAXIMUM DIAMETER (mm) BY T.C. AND VOLTAGE

| Cap.<br>(pF) | NPO         |      |     | N150 ~ N470 |      |     | N750        |      |     | SL          |      |     | N1500       |      |     | N3300       |      |     |
|--------------|-------------|------|-----|-------------|------|-----|-------------|------|-----|-------------|------|-----|-------------|------|-----|-------------|------|-----|
|              | 50V<br>100V | 500V | 1KV | 50V<br>100V | 500V | 1KV | 50V<br>100V | 500V | 1KV | 50V<br>100V | 500V | 1KV | 50V<br>100V | 500V | 1KV | 50V<br>100V | 500V | 1KV |
| 0.5 ~ 18     | 6           | 6    | 6   | 6           | 6    | 7   |             |      |     | 6           | 6    | 6   |             |      |     |             |      |     |
| 20           | 6           | 6    | 6   | 6           | 7    | 8   | 6           | 6    | 6   | 6           | 6    | 6   |             |      |     |             |      |     |
| 22           | 6           | 6    | 6   | 6           | 7    | 8   | 6           | 6    | 6   | 6           | 6    | 6   | 6           | 6    | 6   |             |      |     |
| 27           | 6           | 6    | 6   | 7           | 8    | 9   | 6           | 6    | 6   | 6           | 6    | 6   | 6           | 6    | 6   |             |      |     |
| 33           | 6           | 6    | 7   | 7           | 8    | 9   | 6           | 6    | 7   | 6           | 6    | 6   | 6           | 6    | 6   |             |      |     |
| 39           | 6           | 7    | 7   | 8           | 8    | 10  | 6           | 6    | 7   | 6           | 6    | 6   | 6           | 6    | 6   |             |      |     |
| 47           | 6           | 7    | 8   | 8           | 8    | 10  | 6           | 7    | 8   | 6           | 6    | 6   | 6           | 6    | 6   |             | 6    |     |
| 56           | 7           | 7    | 8   | 8           | 10   | 12  | 7           | 7    | 8   | 6           | 6    | 6   | 6           | 6    | 6   |             | 6    | 6   |
| 68           | 7           | 7    | 9   | 8           | 12   | 14  | 7           | 7    | 9   | 6           | 6    | 6   | 6           | 6    | 6   |             | 6    | 6   |
| 75           | 7           | 7    | 9   | 10          | 12   | 14  | 7           | 7    | 9   | 6           | 6    | 7   | 6           | 6    | 7   |             | 6    | 6   |
| 82           | 7           | 7    | 9   | 10          | 14   |     | 7           | 7    | 9   | 6           | 6    | 7   | 6           | 6    | 7   | 6           | 6    | 6   |
| 100          | 8           | 8    | 10  | 10          | 14   |     | 8           | 8    | 10  | 6           | 6    | 7   | 6           | 7    | 7   | 6           | 6    | 6   |
| 120          | 8           | 8    | 10  | 10          | 14   |     | 8           | 8    | 10  | 6           | 6    | 7   | 6           | 7    | 7   | 6           | 6    | 6   |
| 150          | 9           | 9    | 12  | 12/14       |      |     | 9           | 9    | 12  | 6           | 7    | 8   | 6           | 8    | 8   | 6           | 6    | 7   |
| 180          | 9           | 9    | 14  | 14          |      |     | 9           | 9    | 14  | 6           | 7    | 8   | 6           | 8    | 8   | 6           | 7    | 7   |
| 220          | 10          | 10   | 16  | 14          |      |     | 10          | 10   | 16  | 7           | 8    | 9   | 7           | 9    | 9   | 7           | 7    | 7   |
| 270          | 12          | 12   | 16  |             |      |     | 12          | 12   | 16  | 8           | 9    | 10  | 8           | 9    | 10  | 7           | 7    | 7   |
| 330          | 14          | 14   | 18  |             |      |     | 14          | 14   | 18  | 8           | 10   | 12  | 8           | 10   | 12  | 7           | 7    | 8   |
| 470          | 16          | 16   | 20  |             |      |     | 16          | 16   | 20  | 9           | 12   | 14  | 9           | 12   | 14  | 7           | 8    | 9   |
| 560          |             |      |     |             |      |     |             |      |     | 10          | 12   | 14  | 10          | 14   | 14  | 8           | 9    | 11  |
| 680          |             |      |     |             |      |     |             |      |     | 10          | 14   | 16  | 10          | 14   | 16  | 8           | 10   | 11  |
| 750          |             |      |     |             |      |     |             |      |     | 12          | 16   | 16  | 12          | 16   | 16  | 8           | 10   | 11  |
| 820          |             |      |     |             |      |     |             |      |     | 12          | 16   | 16  | 12          | 16   | 16  | 8           | 10   | 11  |
| 1000         |             |      |     |             |      |     |             |      |     | 14          | 16   | 18  | 14          | 16   | 18  | 10          | 12   | 13  |

NIC RESERVES THE RIGHT TO REQUEST MINIMUM QUANTITIES ON CERTAIN VALUES

