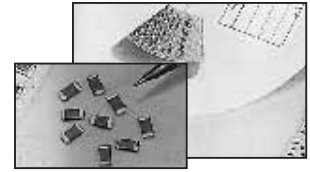


### FEATURES

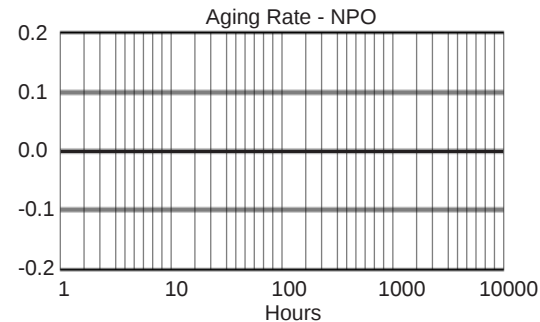
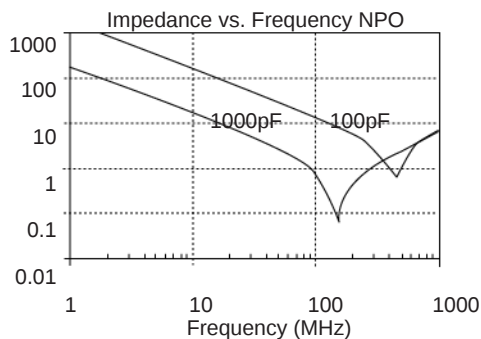
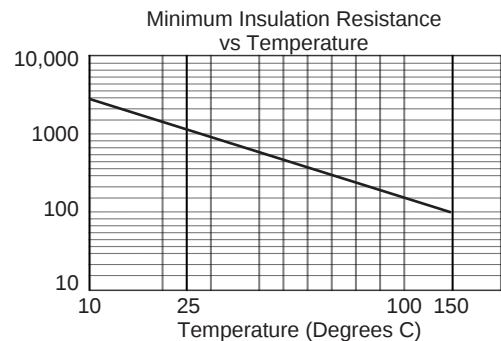
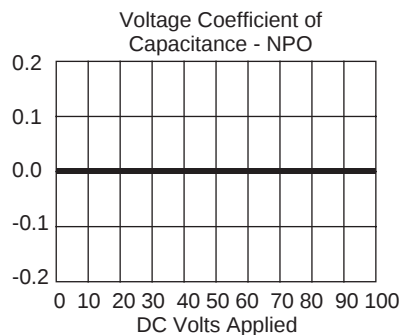
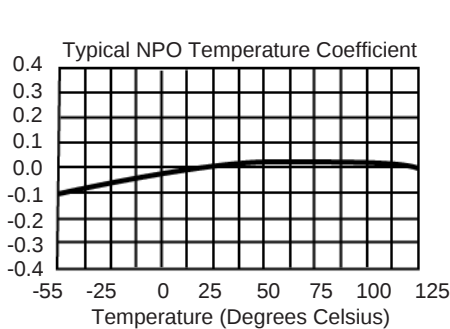
- CLASS I DIELECTRIC, TEMPERATURE COMPENSATING
- HIGH STABILITY OVER TIME, VOLTAGE AND TEMPERATURE CHANGES
- LOW DIELECTRIC LOSS
- NICKEL BARRIER TERMINATIONS AND EXCELLENT MECHANICAL STRENGTH

**Expanded  
01005  
Case Size**



### SPECIFICATIONS NPO

|                                 |                                                                                         |
|---------------------------------|-----------------------------------------------------------------------------------------|
| Capacitance Range               | 0.47pF to 0.068μF                                                                       |
| Capacitance Tolerance           | Below 10pF: ±0.1pF(B), ±0.25pF(C), ±0.5pF(D)<br>10pF and above: ±1%(F), ±2%(G), ±5% (J) |
| Operating Temperature Range     | -55°C ~ +125°C                                                                          |
| Temperature Characteristics     | 0 ± 30ppm/°C                                                                            |
| Rated Voltages                  | 25Vdc, 35Vdc, 50Vdc (see NMC-H Series for higher voltages)                              |
| Dissipation Factor              | For values >30pF 0.1% @ 25°C; For values ≤ 30pF $Q=400+20 \times C$ (C in pF)           |
| Insulation Resistance           | 10,000Megohms min. or 500Megohm/μF (min.), whichever is less @ +25°C                    |
| Dielectric Withstanding Voltage | 250% of Rated Voltage for 5 ±1 seconds, 50mA maximum current                            |
| Test Conditions (EIA-198-2E)    | ≤1000pF; 1MHz, 1.2Vrms max. or >1000pF; 1KHz, 1.2Vrms max.                              |



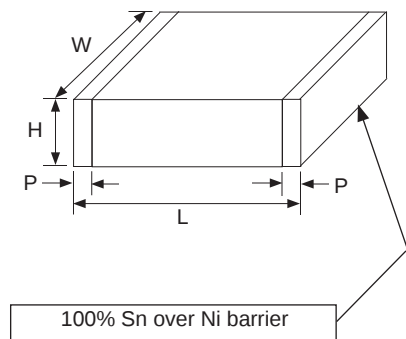
### PART NUMBER SYSTEM

NMC 0805 NPO 101 J 50 TRP or TRPLP 3K E

- Series
- Size Code (see chart)
- Temperature Characteristic
- Capacitance Code, expressed in pF, first 2 digits are significant, 3rd digit is no. of zeros, "R" indicates decimal for under 10pF
- Capacitance Tolerance Code (see chart)
- Voltage (Vdc)
- Tape & Reel (Punched carrier)
- Tape & Reel (Embossed Plastic Carrier)
- Optional Reel Qty (3K=3,000pcs)
- RoHS Compliant



| EIA Case Size         | 01005                       |
|-----------------------|-----------------------------|
| Length (L)            | 0.4±0.02                    |
| Width (W)             | 0.2±0.02                    |
| Thickness max. (T)    | 0.22                        |
| Termination Width (P) | 0.1±0.03                    |
| Capacitance           | Working Voltage (Vdc)<br>16 |
| 0.5pF                 |                             |
| 1.0pF                 |                             |
| 1.5pF                 |                             |
| 2.0pF                 |                             |
| 3.0pF                 |                             |
| 4.0pF                 |                             |
| 5.0pF                 |                             |
| 6.0pF                 |                             |
| 7.0pF                 |                             |
| 8.0pF                 |                             |
| 9.0pF                 |                             |
| 10pF                  |                             |
| 12pF                  |                             |
| 15pF                  |                             |
| 18pF                  |                             |
| 22pF                  |                             |
| 27pF                  |                             |
| 33pF                  |                             |
| 39pF                  |                             |
| 47pF                  |                             |
| 56pF                  |                             |
| 68pF                  |                             |
| 82pF                  |                             |
| 100pF                 |                             |



(CONSULT FACTORY  
FOR CAPACITANCE  
VALUES NOT LISTED)

| EIA Case Size         | 0201                  |    |    |    | 0402     |    |    |     | 0603        |    |    |     | 0805        |    |    |     |
|-----------------------|-----------------------|----|----|----|----------|----|----|-----|-------------|----|----|-----|-------------|----|----|-----|
| Length (L)            | 0.6±0.03              |    |    |    | 1.0±0.05 |    |    |     | 1.6±0.15    |    |    |     | 2.0±0.2     |    |    |     |
| Width (W)             | 0.3±0.03              |    |    |    | 0.5±0.05 |    |    |     | 0.8±0.15    |    |    |     | 1.25±0.2    |    |    |     |
| Thickness max. (T)    | 0.33                  |    |    |    | 0.6      |    |    |     | 1.0         |    |    |     | 1.35        |    |    |     |
| Termination Width (P) | 0.15±0.05             |    |    |    | 0.2±0.1  |    |    |     | 0.12 ~ 0.51 |    |    |     | 0.25 ~ 0.71 |    |    |     |
| Capacitance           | Working Voltage (Vdc) |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
|                       | 10                    | 16 | 25 | 50 | 16       | 25 | 50 | 100 | 16          | 25 | 50 | 100 | 16          | 25 | 50 | 100 |
| 0.47pF ~ 22pF         |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 24pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 27pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 30pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 33pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 36pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 39pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 43pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 47pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 51pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 56pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 62pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 68pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 75pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 82pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 91pF                  |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 100pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 110pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 120pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 130pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 150pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 160pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 180pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 200pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 220pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 240pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 270pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 300pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 330pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 360pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 390pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 430pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 470pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 510pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 560pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 620pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 680pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 750pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 820pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 910pF                 |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 0.001μF               |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 0.0012μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 0.0015μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 0.0018μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 0.0022μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    |     |
| 0.0027μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    | *   |
| 0.0033μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             |    |    | *   |
| 0.0039μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             |    | *  | *   |
| 0.0047μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             |    | *  |     |
| 0.0056μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             | *  | *  |     |
| 0.0068μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             | *  | *  |     |
| 0.0082μF              |                       |    |    |    |          |    |    |     |             |    |    |     |             | *  | *  |     |

\*1.45mm maximum thickness

| EIA Case Size         | 0805                  |    |    |     | 1206        |    |    |    | 1210        |    |    |    | 1812        |     |    |    | 2225        |    |     |
|-----------------------|-----------------------|----|----|-----|-------------|----|----|----|-------------|----|----|----|-------------|-----|----|----|-------------|----|-----|
| Length (L)            | 2.0±0.2               |    |    |     | 3,2±0.2     |    |    |    | 3.2±0.2     |    |    |    | 4.5±0.3     |     |    |    | 5.70±0.4    |    |     |
| Width (W)             | 1.25±0.2              |    |    |     | 1.6±0.2     |    |    |    | 2.5±0.2     |    |    |    | 3.2±0.25    |     |    |    | 6.35±0.25   |    |     |
| Thickness max. (T)    | 1.45                  |    |    |     | 1.80        |    |    |    | 1.80        |    |    |    | 1.80        |     |    |    | 1.80        |    |     |
| Termination Width (P) | 0.25 ~ 0.71           |    |    |     | 0.25 ~ 0.71 |    |    |    | 0.25 ~ 0.71 |    |    |    | 0.25 ~ 0.76 |     |    |    | 0.25 ~ 1.02 |    |     |
| Capacitance           | Working Voltage (Vdc) |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
|                       | 16                    | 25 | 50 | 100 | 10          | 16 | 25 | 50 | 100         | 10 | 16 | 25 | 50          | 100 | 25 | 50 | 100         | 50 | 100 |
| 0.47pF ~ 9.1pF        | See the previous page |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 10pF ~ 22pF           |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 24pF ~ 0.001μF        |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0012μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0015μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0018μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0022μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0027μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0033μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0039μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0047μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0056μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0068μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0075μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0082μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.0091μF              |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.01μF                |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.012μF               |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.015μF               |                       |    |    |     |             |    | *  | *  |             |    |    |    |             |     |    |    |             |    |     |
| 0.018μF               |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.022μF               |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             | ** |     |
| 0.027μF               |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             | ** |     |
| 0.033μF               |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             | ** |     |
| 0.039μF               |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             | ** |     |
| 0.047μF               |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |
| 0.056μF               |                       |    |    |     |             |    |    |    |             |    |    |    |             |     |    |    |             |    |     |

\*1.90mm maximum thickness, \*\*2.60mm maximum thickness

See NMC High Capacitance datasheet for higher capacitance values  
or NMC-H High Voltage datasheet for higher voltage ratings

