**FEATURES**
- MANUFACTURED AT ISO/TS 16949 PRODUCTION FACILITY
- AEC-Q200 QUALIFIED
- SURFACE MOUNT CASE SIZES 0402, 0603 & 0805
- AVAILABLE IN NPO & X7R DIELECTRICS
- AVAILABLE WITH FLEX TERMINATIONS & OPEN MODE CONSTRUCTION

**CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Type</th>
<th>NPO</th>
<th>X7R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitance Range</td>
<td>4.7pF – 0.01μF</td>
<td>0.001μF – 0.1μF</td>
</tr>
<tr>
<td>Capacitance Tolerance</td>
<td>&lt;5pF: C (±0.25pF), 5pF – &lt;10pF: D (±0.5pF), &gt;10pF: J (±0.5%)</td>
<td>±10% (K), ±20% (M)</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-55°C – +125°C</td>
<td>-55°C – +125°C</td>
</tr>
<tr>
<td>Temperature Characteristics</td>
<td>±30 ppm/°C</td>
<td>±15%</td>
</tr>
<tr>
<td>Rated Voltages</td>
<td>50V &amp; 100V</td>
<td>10V, 16V, 25V, 50V &amp; 100V</td>
</tr>
<tr>
<td>Q Factor</td>
<td>Cap. &lt;30pF: Q = 1,000 min.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Cap. &gt;30pF: Q = 400 + 20 x C</td>
<td></td>
</tr>
<tr>
<td>Dissipation Factor</td>
<td>3.5% max.</td>
<td></td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>100,000MΩ or 1,000MΩ • μF</td>
<td>10,000MΩ or 500MΩ • μF</td>
</tr>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>250% of rated voltage for 1–5 sec, 50mA current maximum</td>
<td>Whichever is less</td>
</tr>
<tr>
<td>Test Conditions (EIA-198-2E)</td>
<td>&lt;1000pF (1MHz±10%) &gt;1000pF (1KHz ±10%), 0.5–5Vrms</td>
<td>1KHz, 1.0V ±0.2Vrms</td>
</tr>
</tbody>
</table>

**PART NUMBER SYSTEM**

NMA -P 0805 X7R 105 K 25 E 3K 135 Q Y F

RoHS Compliant
Y = TS-16949 production facility
Q = AEC-Q200 qualification
Component thickness in mm: 135 = 1.35mm, R90 = 0.90mm
Reel Quantity: 3K = 3,000 pieces
Packaging: C = 7" reel, paper carrier
D = 13" reel, paper carrier
E = 7" reel, embossed plastic carrier
F = 13" ree., embossed plastic 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 decimal for under 10pF
Temperature Characteristic
Size Code (see chart)
Construction Type: No Code = Standard BME construction Ni/Cu/Ni-Sn)
P = Soft termination
S = Soft termination with Open Mode Construction

**AVAILABLE TERMINATION TYPES**

<table>
<thead>
<tr>
<th>Case Size</th>
<th>NPO</th>
<th>X7R</th>
</tr>
</thead>
<tbody>
<tr>
<td>0402</td>
<td>Standard Soft</td>
<td>Soft</td>
</tr>
<tr>
<td>0603</td>
<td>Standard Soft &amp; Soft (Open Mode)</td>
<td>Soft &amp; Soft (Open Mode)</td>
</tr>
<tr>
<td>0805</td>
<td>Standard Soft &amp; Soft (Open Mode)</td>
<td>Soft &amp; Soft (Open Mode)</td>
</tr>
</tbody>
</table>

**PCB FLEX SPECIFICATION (AEC Q-200-005)**

<table>
<thead>
<tr>
<th>Case Size</th>
<th>NPO (Standard Terminations)</th>
<th>X7R (Soft Terminations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0402</td>
<td>3mm (ΔC ±5% or 0.5pF whichever is greater)</td>
<td>2mm (ΔC ±10 max.)</td>
</tr>
<tr>
<td>0603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0805</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specifications are subject to change
### Automotive Grade Ceramic Chip Capacitors

#### NMA Series

**0402 NPO Standard Terminations**

<table>
<thead>
<tr>
<th>EIA Case Size</th>
<th>NPO 0402 Standard Terminations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length (L) 1.0 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Width (W) 0.5 ± 0.05</td>
</tr>
<tr>
<td></td>
<td>Termination Width (P) 0.2 ± 0.15/-0.10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance (pF)</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA0402NPO4R7C50C4KR55QYF</td>
<td>4.7</td>
<td>50V</td>
<td>±0.25pF</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO6R8D50C4KR55QYF</td>
<td>6.8</td>
<td>50V</td>
<td>±0.5pF</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO100J50C4KR55QYF</td>
<td>10</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO120J50C4KR55QYF</td>
<td>12</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO150J50C4KR55QYF</td>
<td>15</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO180J50C4KR55QYF</td>
<td>18</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO220J50C4KR55QYF</td>
<td>22</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO270J50C4KR55QYF</td>
<td>27</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO330J50C4KR55QYF</td>
<td>33</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO390J50C4KR55QYF</td>
<td>39</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO470J50C4KR55QYF</td>
<td>47</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO560J50C4KR55QYF</td>
<td>56</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO680J50C4KR55QYF</td>
<td>68</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO820J50C4KR55QYF</td>
<td>82</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO101J50C4KR55QYF</td>
<td>100</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO121J50C4KR55QYF</td>
<td>120</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO151J50C4KR55QYF</td>
<td>150</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO221J50C4KR55QYF</td>
<td>220</td>
<td>50V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO4R7C100C4KR55QYF</td>
<td>4.7</td>
<td>100 V</td>
<td>±0.25pF</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO6R8D100C4KR55QYF</td>
<td>6.8</td>
<td>100 V</td>
<td>±0.5pF</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO100J100C4KR55QYF</td>
<td>10</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO120J100C4KR55QYF</td>
<td>12</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO150J100C4KR55QYF</td>
<td>15</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO180J100C4KR55QYF</td>
<td>18</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO220J100C4KR55QYF</td>
<td>22</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO270J100C4KR55QYF</td>
<td>27</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO330J100C4KR55QYF</td>
<td>33</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO390J100C4KR55QYF</td>
<td>39</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO470J100C4KR55QYF</td>
<td>47</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO560J100C4KR55QYF</td>
<td>56</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO680J100C4KR55QYF</td>
<td>68</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO820J100C4KR55QYF</td>
<td>82</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
<tr>
<td>NMA0402NPO101J100C4KR55QYF</td>
<td>100</td>
<td>100 V</td>
<td>±5%</td>
<td>0.55</td>
</tr>
</tbody>
</table>

(Consult Factory for Capacitance Values Not Listed)

100% Sn over Ni barrier
### 0402 X7R Soft Terminations

<table>
<thead>
<tr>
<th>Capacitance</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA-P0402X7R0402X7R102K16C4KR55QYF</td>
<td>0.001μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R152K16C4KR55QYF</td>
<td>0.0015μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R222K16C4KR55QYF</td>
<td>0.0022μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R332K16C4KR55QYF</td>
<td>0.0033μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R472K16C4KR55QYF</td>
<td>0.0047μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R682K16C4KR55QYF</td>
<td>0.0068μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R103K16C4KR55QYF</td>
<td>0.01μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R153K16C4KR55QYF</td>
<td>0.015μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R223K16C4KR55QYF</td>
<td>0.022μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R473K16C4KR55QYF</td>
<td>0.047μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R683K16C4KR55QYF</td>
<td>0.068μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R104K16C4KR55QYF</td>
<td>0.1μF</td>
<td>16 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R102K25C4KR55QYF</td>
<td>0.001μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R152K25C4KR55QYF</td>
<td>0.0015μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R222K25C4KR55QYF</td>
<td>0.0022μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R332K25C4KR55QYF</td>
<td>0.0033μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R472K25C4KR55QYF</td>
<td>0.0047μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R682K25C4KR55QYF</td>
<td>0.0068μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R103K25C4KR55QYF</td>
<td>0.01μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R153K25C4KR55QYF</td>
<td>0.015μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R223K25C4KR55QYF</td>
<td>0.022μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R473K25C4KR55QYF</td>
<td>0.047μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R683K25C4KR55QYF</td>
<td>0.068μF</td>
<td>25 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R104K50C4KR55QYF</td>
<td>0.1μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R102K50C4KR55QYF</td>
<td>0.001μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R152K50C4KR55QYF</td>
<td>0.0015μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R222K50C4KR55QYF</td>
<td>0.0022μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R332K50C4KR55QYF</td>
<td>0.0033μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R472K50C4KR55QYF</td>
<td>0.0047μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R682K50C4KR55QYF</td>
<td>0.0068μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R103K50C4KR55QYF</td>
<td>0.01μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R153K50C4KR55QYF</td>
<td>0.015μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
<tr>
<td>NMA-P0402X7R223K50C4KR55QYF</td>
<td>0.022μF</td>
<td>50 V</td>
<td>±10%</td>
</tr>
</tbody>
</table>

(CONSULT FACTORY FOR CAPACITANCE VALUES NOT LISTED)
# Automotive Grade Ceramic Chip Capacitors

**NMA Series**

## 0603 NPO Standard Terminations

<table>
<thead>
<tr>
<th>EIA Case Size</th>
<th>NPO 0603 - Standard Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length (L) 1.6 ± 0.10</td>
</tr>
<tr>
<td></td>
<td>Width (W) 0.8 ± 0.10</td>
</tr>
<tr>
<td></td>
<td>Termination Width (P) 0.3 ± 0.20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA0603NPO4R7C50C4KR90QYF</td>
<td>4.7pF 50V</td>
<td>±0.25pF 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO6R8D50C4KR90QYF</td>
<td>6.8pF 50V</td>
<td>±0.5pF 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO100J50C4KR90QYF</td>
<td>10pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO120J50C4KR90QYF</td>
<td>12pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO150J50C4KR90QYF</td>
<td>15pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO180J50C4KR90QYF</td>
<td>18pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO220J50C4KR90QYF</td>
<td>22pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO270J50C4KR90QYF</td>
<td>27pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO330J50C4KR90QYF</td>
<td>33pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO390J50C4KR90QYF</td>
<td>39pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO470J50C4KR90QYF</td>
<td>47pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO560J50C4KR90QYF</td>
<td>56pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO680J50C4KR90QYF</td>
<td>68pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO820J50C4KR90QYF</td>
<td>82pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO101J50C4KR90QYF</td>
<td>100pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO121J50C4KR90QYF</td>
<td>120pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO151J50C4KR90QYF</td>
<td>150pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO221J50C4KR90QYF</td>
<td>220pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO271J50C4KR90QYF</td>
<td>270pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO331J50C4KR90QYF</td>
<td>330pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO391J50C4KR90QYF</td>
<td>390pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO471J50C4KR90QYF</td>
<td>470pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO561J50C4KR90QYF</td>
<td>560pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO681J50C4KR90QYF</td>
<td>680pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO821J50C4KR90QYF</td>
<td>820pF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO102J50C4KR90QYF</td>
<td>0.001μF 50V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO4R7C100C4KR90QYF</td>
<td>4.7pF 100V</td>
<td>±0.25pF 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO6R8D100C4KR90QYF</td>
<td>6.8pF 100V</td>
<td>±0.5pF 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO100J100C4KR90QYF</td>
<td>10pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO120J100C4KR90QYF</td>
<td>12pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO150J100C4KR90QYF</td>
<td>15pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO180J100C4KR90QYF</td>
<td>18pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO220J100C4KR90QYF</td>
<td>22pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO270J100C4KR90QYF</td>
<td>27pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO330J100C4KR90QYF</td>
<td>33pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO390J100C4KR90QYF</td>
<td>39pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO470J100C4KR90QYF</td>
<td>47pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO560J100C4KR90QYF</td>
<td>56pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO680J100C4KR90QYF</td>
<td>68pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO820J100C4KR90QYF</td>
<td>82pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMA0603NPO101J100C4KR90QYF</td>
<td>100pF 100V</td>
<td>±5% 0.90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(CONSULT FACTORY FOR CAPACITANCE VALUES NOT LISTED)

![Diagram of 0603 NPO Standard Terminations](image)

100% Sn over Ni barrier

Specifications are subject to change
## Automotive Grade Ceramic Chip Capacitors

### NMA Series

#### 0603 X7R Soft Terminations

<table>
<thead>
<tr>
<th>EIA Case Size</th>
<th>X7R 0603 - Soft Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length (L)</td>
</tr>
<tr>
<td></td>
<td>Width (W)</td>
</tr>
<tr>
<td></td>
<td>Termination Width (P)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance (μF)</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA-P0603X7R154K16C4KR90QYF</td>
<td>0.15</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-P0603X7R224K16C4KR90QYF</td>
<td>0.22</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-P0603X7R334K16C4KR90QYF</td>
<td>0.33</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-P0603X7R474K16C4KR90QYF</td>
<td>0.47</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-P0603X7R684K16C4KR90QYF</td>
<td>0.68</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-P0603X7R105K16C4KR90QYF</td>
<td>1.00</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
</tbody>
</table>

#### 0603 X7R Soft Terminations (Open Mode)

<table>
<thead>
<tr>
<th>EIA Case Size</th>
<th>X7R 0603 - Soft Termination (Open Mode)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length (L)</td>
</tr>
<tr>
<td></td>
<td>Width (W)</td>
</tr>
<tr>
<td></td>
<td>Termination Width (P)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance (μF)</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA-S0603X7R473K16C4KR90QYF</td>
<td>0.047</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R683K16C4KR90QYF</td>
<td>0.068</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R104K16C4KR90QYF</td>
<td>0.100</td>
<td>16 V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R103K25C4KR90QYF</td>
<td>0.010</td>
<td>25V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R104K25C4KR90QYF</td>
<td>0.100</td>
<td>25V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R221K50C4KR90QYF</td>
<td>2.200</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R471K50C4KR90QYF</td>
<td>4.700</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R102K50C4KR90QYF</td>
<td>0.001</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R152K50C4KR90QYF</td>
<td>0.0015</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R222K50C4KR90QYF</td>
<td>0.0022</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R472K50C4KR90QYF</td>
<td>0.0047</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R103K50C4KR90QYF</td>
<td>0.0010</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R153K50C4KR90QYF</td>
<td>0.0015</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R223K50C4KR90QYF</td>
<td>0.0022</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R333K50C4KR90QYF</td>
<td>0.0033</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R473K50C4KR90QYF</td>
<td>0.0047</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R683K50C4KR90QYF</td>
<td>0.0068</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R104K50C4KR90QYF</td>
<td>0.0010</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R152K50C4KR90QYF</td>
<td>0.0015</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R222K50C4KR90QYF</td>
<td>0.0022</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R472K50C4KR90QYF</td>
<td>0.0047</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R103K50C4KR90QYF</td>
<td>0.0010</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R153K50C4KR90QYF</td>
<td>0.0015</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
<tr>
<td>NMA-S0603X7R223K50C4KR90QYF</td>
<td>0.0022</td>
<td>50V</td>
<td>±10%</td>
<td>0.90</td>
</tr>
</tbody>
</table>

(CONSULT FACTORY FOR CAPACITANCE VALUES NOT LISTED)
## 0805 NPO Standard Terminations

<table>
<thead>
<tr>
<th>EIA Case Size</th>
<th>NPO 0805 Standard Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length (L)</td>
</tr>
<tr>
<td></td>
<td>Width (W)</td>
</tr>
<tr>
<td></td>
<td>Termination Width (P)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Part Number</td>
</tr>
<tr>
<td></td>
<td>Capacitance</td>
</tr>
<tr>
<td></td>
<td>Voltage (VDC)</td>
</tr>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td></td>
<td>Maximum Thickness (mm)</td>
</tr>
</tbody>
</table>

### NMA Series
Automotive Grade Ceramic Chip Capacitors

### Specifications
- NPO 0805 Standard Terminations
- Length (L): 2.0 ± 0.20
- Width (W): 1.25 ± 0.20
- Termination Width (P): 0.5 ±0.20/-0.30

### Capacitance Values

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA0805NPO100J50C4KR70QYF</td>
<td>10pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO120J50C4KR70QYF</td>
<td>12pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO150J50C4KR70QYF</td>
<td>15pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO180J50C4KR70QYF</td>
<td>18pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO220J50C4KR70QYF</td>
<td>22pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO330J50C4KR70QYF</td>
<td>33pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO390J50C4KR70QYF</td>
<td>39pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO470J50C4KR70QYF</td>
<td>47pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO560J50C4KR70QYF</td>
<td>56pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO680J50C4KR70QYF</td>
<td>68pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO820J50C4KR70QYF</td>
<td>82pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO101J50C4KR70QYF</td>
<td>100pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO121J50C4KR70QYF</td>
<td>120pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO151J50C4KR70QYF</td>
<td>150pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO221J50C4KR70QYF</td>
<td>220pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO271J50C4KR70QYF</td>
<td>270pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO331J50C4KR70QYF</td>
<td>330pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO471J50C4KR70QYF</td>
<td>470pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO561J50C4KR70QYF</td>
<td>560pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO681J50C4KR70QYF</td>
<td>680pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO821J50C4KR70QYF</td>
<td>820pF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO102J50C4KR95QYF</td>
<td>0.001μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO122J50C4KR95QYF</td>
<td>0.002μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO152J50C4KR95QYF</td>
<td>0.003μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO182J50C4KR95QYF</td>
<td>0.004μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO222J50C4KR95QYF</td>
<td>0.006μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO272J50C4KR95QYF</td>
<td>0.007μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO332J50C4KR95QYF</td>
<td>0.01μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO472J50C4KR95QYF</td>
<td>0.015μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO562J50C4KR95QYF</td>
<td>0.018μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO682J50C4KR95QYF</td>
<td>0.02μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO822J50C4KR95QYF</td>
<td>0.022μF</td>
<td>50</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO102J50C4KR135QYF</td>
<td>0.001μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO122J50C4KR135QYF</td>
<td>0.002μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO152J50C4KR135QYF</td>
<td>0.003μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO182J50C4KR135QYF</td>
<td>0.004μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO222J50C4KR135QYF</td>
<td>0.005μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO272J50C4KR135QYF</td>
<td>0.007μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO332J50C4KR135QYF</td>
<td>0.01μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO392J50C4KR135QYF</td>
<td>0.015μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO472J50C4KR135QYF</td>
<td>0.02μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO562J50C4KR135QYF</td>
<td>0.025μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO682J50C4KR135QYF</td>
<td>0.03μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO822J50C4KR135QYF</td>
<td>0.035μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO103J50E3K135QYF</td>
<td>0.01μF</td>
<td>50</td>
<td>±5%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA0805NPO100J100C4KR70QYF</td>
<td>10pF</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO120J100C4KR70QYF</td>
<td>12pF</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO150J100C4KR70QYF</td>
<td>15pF</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO180J100C4KR70QYF</td>
<td>18pF</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
</tbody>
</table>

(Consult Factory for capacitance values not listed)

Specifications are subject to change.
# Automotive Grade Ceramic Chip Capacitors

## NMA Series

### 0805 NPO Standard Terminations

<table>
<thead>
<tr>
<th>EIA Case Size</th>
<th>NPO 0805 Standard Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (L)</td>
<td>2.0 ± 0.20</td>
</tr>
<tr>
<td>Width (W)</td>
<td>1.25 ± 0.20</td>
</tr>
<tr>
<td>Termination Width (P)</td>
<td>0.5 +0.20/-0.30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance (μF)</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA0805NPO22GJ100C4KR70QYF</td>
<td>0.22</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO27GJ100C4KR70QYF</td>
<td>0.27</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO33GJ100C4KR70QYF</td>
<td>0.33</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO39GJ100C4KR70QYF</td>
<td>0.39</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO47GJ100C4KR70QYF</td>
<td>0.47</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO56GJ100C4KR70QYF</td>
<td>0.56</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO68GJ100C4KR70QYF</td>
<td>0.68</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO82GJ100C4KR70QYF</td>
<td>0.82</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO101GJ100C4KR70QYF</td>
<td>1.00</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO121GJ100C4KR70QYF</td>
<td>1.20</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO151GJ100C4KR70QYF</td>
<td>1.50</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO221GJ100C4KR70QYF</td>
<td>2.20</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO271GJ100C4KR70QYF</td>
<td>2.70</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO331GJ100C4KR70QYF</td>
<td>3.30</td>
<td>100</td>
<td>±5%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA0805NPO471GJ100C4KR95QYF</td>
<td>4.70</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO561GJ100C4KR95QYF</td>
<td>5.60</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO681GJ100C4KR95QYF</td>
<td>6.80</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO821GJ100C4KR95QYF</td>
<td>8.20</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO101GJ100C4KR95QYF</td>
<td>1.00</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO121GJ100C4KR95QYF</td>
<td>1.20</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO151GJ100C4KR95QYF</td>
<td>1.50</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO221GJ100C4KR95QYF</td>
<td>2.20</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO271GJ100C4KR95QYF</td>
<td>2.70</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO331GJ100C4KR95QYF</td>
<td>3.30</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO471GJ100C4KR95QYF</td>
<td>4.70</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO561GJ100C4KR95QYF</td>
<td>5.60</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO681GJ100C4KR95QYF</td>
<td>6.80</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO821GJ100C4KR95QYF</td>
<td>8.20</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA0805NPO101GJ100C4KR95QYF</td>
<td>1.00</td>
<td>100</td>
<td>±5%</td>
<td>0.95</td>
</tr>
</tbody>
</table>

(CONSULT FACTORY FOR CAPACITANCE VALUES NOT LISTED)

### 0805 X7R Soft Terminations

<table>
<thead>
<tr>
<th>EIA Case Size</th>
<th>X7R 0805 Soft Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (L)</td>
<td>2.0 ± 0.20</td>
</tr>
<tr>
<td>Width (W)</td>
<td>1.25 ± 0.20</td>
</tr>
<tr>
<td>Termination Width (P)</td>
<td>0.5 +0.20/-0.30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance (pF)</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA-P0805X7R335K10E3K140QYF</td>
<td>3.3</td>
<td>10V</td>
<td>±10%</td>
<td>1.40</td>
</tr>
<tr>
<td>NMA-P0805X7R475K10E3K140QYF</td>
<td>4.7</td>
<td>10V</td>
<td>±10%</td>
<td>1.40</td>
</tr>
<tr>
<td>NMA-P0805X7R154K16E3K135QYF</td>
<td>0.15</td>
<td>16 V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R224K16E3K135QYF</td>
<td>0.22</td>
<td>16 V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R334K16E3K135QYF</td>
<td>0.33</td>
<td>16 V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R474K16E3K135QYF</td>
<td>0.47</td>
<td>16 V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R684K16E3K135QYF</td>
<td>0.68</td>
<td>16 V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R824K16E3K135QYF</td>
<td>0.82</td>
<td>16 V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R101K16E3K135QYF</td>
<td>1.00</td>
<td>16 V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R221K16E3K135QYF</td>
<td>2.20</td>
<td>16 V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R154K25E3K135QYF</td>
<td>0.15</td>
<td>25V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R224K25E3K135QYF</td>
<td>0.22</td>
<td>25V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R334K25E3K135QYF</td>
<td>0.33</td>
<td>25V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-P0805X7R474K25E3K135QYF</td>
<td>0.47</td>
<td>25V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
</tbody>
</table>

(CONSULT FACTORY FOR CAPACITANCE VALUES NOT LISTED)
## 0805 X7R Soft Terminations (Open Mode)

<table>
<thead>
<tr>
<th>EIA Case Size</th>
<th>X7R 0805 Soft Termination (Open Mode)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length (L)</td>
</tr>
<tr>
<td></td>
<td>2.0 ± 0.20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance (μF)</th>
<th>Voltage (VDC)</th>
<th>Tolerance</th>
<th>Maximum Thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMA-S0805X7R104K16C4KR95QYF</td>
<td>0.1</td>
<td>16 V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R473K25C4KR95QYF</td>
<td>0.047</td>
<td>25V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R683K25C4KR95QYF</td>
<td>0.068</td>
<td>25V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R104K25C4KR70QYF</td>
<td>0.1</td>
<td>25V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R102K50C4KR70QYF</td>
<td>0.001</td>
<td>50V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R222K50C4KR70QYF</td>
<td>0.0022</td>
<td>50V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R472K50C4KR70QYF</td>
<td>0.0047</td>
<td>50V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R103K50C4KR70QYF</td>
<td>0.01</td>
<td>50V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R153K50C4KR70QYF</td>
<td>0.015</td>
<td>50V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R223K50C4KR70QYF</td>
<td>0.022</td>
<td>50V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R333K50C4KR95QYF</td>
<td>0.033</td>
<td>50V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R473K50C4KR95QYF</td>
<td>0.047</td>
<td>50V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R683K50C4KR95QYF</td>
<td>0.068</td>
<td>50V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R104K50C4KR95QYF</td>
<td>0.1</td>
<td>50V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R104K50C3K135QYF</td>
<td>0.1</td>
<td>50V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
<tr>
<td>NMA-S0805X7R102K100C4KR70QYF</td>
<td>0.001</td>
<td>100V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R222K100C4KR70QYF</td>
<td>0.0022</td>
<td>100V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R472K100C4KR70QYF</td>
<td>0.0047</td>
<td>100V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R103K100C4KR70QYF</td>
<td>0.01</td>
<td>100V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R153K100C4KR70QYF</td>
<td>0.015</td>
<td>100V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R223K100C4KR70QYF</td>
<td>0.022</td>
<td>100V</td>
<td>±10%</td>
<td>0.70</td>
</tr>
<tr>
<td>NMA-S0805X7R333K100C4KR95QYF</td>
<td>0.033</td>
<td>100V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R473K100C4KR95QYF</td>
<td>0.047</td>
<td>100V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R683K100C4KR95QYF</td>
<td>0.068</td>
<td>100V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R104K100C4KR95QYF</td>
<td>0.1</td>
<td>100V</td>
<td>±10%</td>
<td>0.95</td>
</tr>
<tr>
<td>NMA-S0805X7R104K100C3K135QYF</td>
<td>0.1</td>
<td>100V</td>
<td>±10%</td>
<td>1.35</td>
</tr>
</tbody>
</table>

(CONSULT FACTORY FOR CAPACITANCE VALUES NOT LISTED)
Automotive Grade Ceramic Chip Capacitors

NMA Series

REEL DIMENSIONS (mm)

<table>
<thead>
<tr>
<th>Reel Diameter (A)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>T max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7&quot; (178 ± 0/- 0.3)</td>
<td>13 ± 0.3</td>
<td>80 +1/-0</td>
<td>21 ± 1.0</td>
<td>9.0 ± 0.5</td>
</tr>
<tr>
<td>13&quot; (330 ± 0/- 0.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

REEL QUANTITIES*

<table>
<thead>
<tr>
<th>Reel Size</th>
<th>0402</th>
<th>0603</th>
<th>0805</th>
</tr>
</thead>
<tbody>
<tr>
<td>7&quot;</td>
<td>10,000</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>13&quot;</td>
<td>50,000</td>
<td>15,000</td>
<td>15,000</td>
</tr>
</tbody>
</table>

CARRIER TAPE MATERIAL

Parts with a thickness of ≥1mm will be taped on embossed plastic carrier. Parts with a thickness of less then 1mm will be taped on paper carrier.

PUNCHED CARRIER TAPE DIMENSIONS (mm)

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>W</th>
<th>F</th>
<th>E</th>
<th>P1</th>
<th>P0</th>
<th>D0</th>
<th>t max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0402</td>
<td>0.61 ± 0.04</td>
<td>1.12 ± 0.04</td>
<td>8.0 ± 0.3</td>
<td>3.5 ± 0.05</td>
<td>1.75 ± 0.01</td>
<td>2.0 ± 0.05</td>
<td>4.0 ± 0.1</td>
<td>1.5 +0.1/-0.03</td>
<td>0.65</td>
</tr>
<tr>
<td>0603</td>
<td>1.1 ± 0.2</td>
<td>1.9 ± 0.2</td>
<td>4.0 ± 0.1</td>
<td>1.10805</td>
<td>1.6 ± 0.2</td>
<td>2.4 ± 0.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0805</td>
<td>1.6 ± 0.2</td>
<td>2.4 ± 0.2</td>
<td>8.0 ± 0.3</td>
<td>3.5 ± 0.05</td>
<td>1.75 ± 0.01</td>
<td>4.0 ± 0.1</td>
<td>1.5 +0.1/-0.03</td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>

EMBOSSED PLASTIC CARRIER TAPE DIMENSIONS (mm)

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>W</th>
<th>F</th>
<th>E</th>
<th>P1</th>
<th>P0</th>
<th>D0</th>
<th>t1</th>
<th>t2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0805</td>
<td>1.45 ± 0.2</td>
<td>2.3 ± 0.2</td>
<td>8.0 ± 0.3</td>
<td>3.5 ± 0.05</td>
<td>1.75 ± 0.01</td>
<td>4.0 ± 0.1</td>
<td>4.0 ± 0.1</td>
<td>1.5 +0.1/-0.03</td>
<td>0.6 max.</td>
<td>2.9 max.</td>
</tr>
</tbody>
</table>

0805 CASE SIZE

Specifications are subject to change