# Multilayer Ceramic Capacitors Cross Reference Guide

## Chip Size - Quick Reference Chart

<table>
<thead>
<tr>
<th>DLI</th>
<th>C11AH</th>
<th>C17AH</th>
<th>C22AH</th>
<th>C40AH</th>
<th>C60CF</th>
<th>C11CF</th>
<th>C17CF</th>
<th>C22CF</th>
<th>C40CF</th>
<th>C04UL</th>
<th>C06UL</th>
<th>C08UL</th>
<th>C11UL</th>
<th>C17UL</th>
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<tbody>
<tr>
<td>ATC</td>
<td>100A</td>
<td>100B</td>
<td>100C</td>
<td>600S</td>
<td>600F</td>
<td>700A</td>
<td>700B</td>
<td>700C</td>
<td>700E</td>
<td>600L</td>
<td>800A</td>
<td>800B</td>
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<tr>
<td>AVX</td>
<td>11 M</td>
<td>12 M</td>
<td>2225 A</td>
<td>0603 A</td>
<td>11 A</td>
<td>12 A</td>
<td>13 A</td>
<td>14 A</td>
<td>0402 J</td>
<td>0805 A</td>
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<tr>
<td>TEMEX</td>
<td>CHA</td>
<td>CHB</td>
<td></td>
<td></td>
<td>R14S</td>
<td>R12S</td>
<td>S42S</td>
<td>2225 C</td>
<td>CLE</td>
<td>0402</td>
<td>R14S</td>
<td>R15S</td>
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<tr>
<td>MURATA</td>
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<td></td>
<td>GRM18</td>
<td>GRM22</td>
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<td>GRM15</td>
<td>GRM18</td>
<td>GRM21</td>
<td>GRM22</td>
</tr>
<tr>
<td>JOHANSON</td>
<td>R14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S48</td>
<td></td>
<td></td>
<td></td>
<td>R07</td>
<td>R14</td>
<td>R15</td>
<td></td>
</tr>
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<td>VISHAY</td>
<td>VJ0603</td>
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<td></td>
<td></td>
<td>VJ0402</td>
<td>VJ0603</td>
<td>VJ0805</td>
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<td>PRESIDIO</td>
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<td></td>
<td>0402</td>
<td>0603</td>
<td>0805</td>
<td>0505</td>
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2777 Route 20 East, Cazenovia, NY 13035
Ph.: (315)655-8710
KCCSales@knowles.com
### MLC CROSS REFERENCE GUIDE

**DLI: C11AH100J-8UN-X0T**

<table>
<thead>
<tr>
<th>SIZE &amp; DIELECTRIC MATERIAL</th>
<th>CAPACITANCE</th>
<th>TOLERANCE</th>
<th>VOLTAGE</th>
<th>TERMINATION</th>
<th>LEADING</th>
<th>TEST CODE</th>
<th>MARKING</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>C11AH 0.1pF-10pF</td>
<td>100</td>
<td>J   8</td>
<td>U   N</td>
<td>X  0   T</td>
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<td></td>
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</tbody>
</table>

**FIRST TWO DIGITS = SIGNIFICANT FIGURES IN CAPACITANCE**

<table>
<thead>
<tr>
<th>CAPACITANCE</th>
<th>TOLERANCE</th>
<th>VOLTAGE</th>
<th>TERMINATION</th>
<th>LEADING</th>
<th>TEST CODE</th>
<th>MARKING</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = ±0.05pF</td>
<td>B = ±0.1pF</td>
<td>C = ±0.25pF</td>
<td>D = ±0.5pF</td>
<td>F = ±1%</td>
<td>G = ±2%</td>
<td>J = ±5%</td>
<td>M = ±10%</td>
</tr>
</tbody>
</table>

**THIRD DIGIT = ADDITIONAL NUMBER OF ZEROS**

R = DECIMAL POINT

EXAMPLES:

- 620 = 62pF
- 152 = 1500pF
- 2R7 = 2.7pF

**ATC: ATC100A100JW150XB**

### ATC Style

<table>
<thead>
<tr>
<th>SIZE &amp; DIELECTRIC MATERIAL</th>
<th>CAPACITANCE</th>
<th>TOLERANCE</th>
<th>TERMINATION</th>
<th>VOLTAGE</th>
<th>MARKING</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>100A = DLI-C11AH</td>
<td>100</td>
<td>J   W</td>
<td>150</td>
<td>X   T</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FIRST TWO DIGITS = SIGNIFICANT FIGURES IN CAPACITANCE**

<table>
<thead>
<tr>
<th>CAPACITANCE</th>
<th>TOLERANCE</th>
<th>TERMINATION</th>
<th>VOLTAGE</th>
<th>MARKING</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>B = ±0.1pF</td>
<td>C = ±0.25pF</td>
<td>D = ±0.5pF</td>
<td>F = ±1%</td>
<td>G = ±2%</td>
<td>J = ±5%</td>
</tr>
</tbody>
</table>

**THIRD DIGIT = ADDITIONAL NUMBER OF ZEROS**

R = DECIMAL POINT

EXAMPLES:

- 100p = 100pF
- 270 = 270pF
- 2R7 = 2.7pF

**AVX: AQ11EM100JA1MA**

### AQ Style

<table>
<thead>
<tr>
<th>SIZE &amp; DIELECTRIC MATERIAL</th>
<th>VOLTAGE</th>
<th>CAPACITANCE</th>
<th>TOLERANCE</th>
<th>FAILURE RATE</th>
<th>TERMINATION</th>
<th>PACKAGING</th>
<th>SPECIAL CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>11_M = DLI-C11CF</td>
<td>100</td>
<td>J   A   1</td>
<td>M   A</td>
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**FIRST TWO DIGITS = SIGNIFICANT FIGURES IN CAPACITANCE**

<table>
<thead>
<tr>
<th>CAPACITANCE</th>
<th>TOLERANCE</th>
<th>FAILURE RATE</th>
<th>TERMINATION</th>
<th>PACKAGING</th>
<th>SPECIAL CODE</th>
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</thead>
<tbody>
<tr>
<td>5 = 60V</td>
<td>1 = 100V</td>
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**THIRD DIGIT = ADDITIONAL NUMBER OF ZEROS**

R = DECIMAL POINT

EXAMPLES:

- 620 = 62pF
- 152 = 1500pF
- 2R7 = 2.7pF

### NOTE:
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<tr>
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<th>TERMINATION</th>
<th>LEADING</th>
<th>TEST CODE</th>
<th>MARKING</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>J</td>
<td>8</td>
<td>U</td>
<td>N</td>
<td>X</td>
<td>0</td>
<td>T</td>
</tr>
</tbody>
</table>

FIRST TWO DIGITS = SIGNIFICANT FIGURES IN CAPACITANCE
THIRD DIGIT = ADDITIONAL NUMBER OF ZEROS
R = DECIMAL POINT

EXAMPLES:
- 620 = 62pF
- 152 = 1500pF
- 2R7 = 2.7pF

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### JOHANSON: 201R14C100JV4E

**200**
- VOLTAGE
  - 100 = 10V
  - 160 = 16V
  - 250 = 25V
  - 500 = 50V
  - 101 = 100V
  - 201 = 200V

**R14**
- SIZE & DIELECTRIC MATERIAL
  - R07 = DLI-C04UL
  - R14 = DLI-C06CF/UL
  - R15 = DLI-C08UL
  - S48 = DLI-C22CF

**N**
- CAPACITANCE
  - N = NP0
  - W = X7R
  - X = X5R

**100**
- TOLERANCE
  - J

**J**
- TERMINATION
  - V
- MARKING
  - V = VOLTAGE TERMINATION CODE
  - P = DLI TERMINATION CODE

**V**
- MARKING
  - V = NOT MARKED
  - G = SINGLE SIDE

**4**
- PACKAGING
  - E = 7" TAPE
  - T = 7" PAPER
  - U = 13" TAPE
  - R = 13" PAPER
  - W = WAFFLE PACK

**E**
- X = COMMERCIAL
  - Y = REDUCED VISUAL

**E**
- A = AXIAL RIBBON
  - B = RADIAL RIBBON
  - C = CENTER RIBBON
  - D = CUSTOMER DEFINED
  - E = AXIAL WIRE
  - F = RADIAL WIRE
  - N = NONE

**R07**
- SIZE & DIELECTRIC MATERIAL
  - R07 = DLI-C04UL

**R14**
- SIZE & DIELECTRIC MATERIAL
  - R14 = DLI-C06CF/UL

**R15**
- SIZE & DIELECTRIC MATERIAL
  - R15 = DLI-C08UL

**S48**
- SIZE & DIELECTRIC MATERIAL
  - S48 = DLI-C22CF

**EXAMPLES:**
- 620 = 62pF
- 152 = 1500pF
- 2R7 = 2.7pF

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<th>Tolerance</th>
<th>Voltage</th>
<th>Termination</th>
<th>Leading</th>
<th>Test Code</th>
<th>Marking</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>C11AH</td>
<td>0.1pF-100pF</td>
<td>±0.05pF</td>
<td>50V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, HEAVY SnPb PLATED SOLDER</td>
<td></td>
<td></td>
<td></td>
<td>1 = SINGLE SIDE</td>
</tr>
<tr>
<td>C17AH</td>
<td>0.1pF-1000pF</td>
<td>±0.1pF</td>
<td>100V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER</td>
<td></td>
<td></td>
<td></td>
<td>2 = DOUBLE SIDE</td>
</tr>
<tr>
<td>C40AH</td>
<td>1pF-2700pF</td>
<td>±0.25pF</td>
<td>200V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, GOLD FLASH</td>
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<td></td>
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<td>3 = LARGE SINGLE SIDE</td>
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<tr>
<td>C17CF</td>
<td>0.1pF-100pF</td>
<td>±0.5pF</td>
<td>300V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER</td>
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<td></td>
<td></td>
<td>4 = LARGE DOUBLE SIDE</td>
</tr>
<tr>
<td>C22CF</td>
<td>0.1pF-1000pF</td>
<td>±1%</td>
<td>500V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER</td>
<td></td>
<td></td>
<td></td>
<td>5 = VERTICAL EDGE</td>
</tr>
<tr>
<td>C40CF</td>
<td>1pF-2700pF</td>
<td>±2%</td>
<td>1000V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER</td>
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<tr>
<td>C04UL</td>
<td>0.1pF-10pF</td>
<td>±5%</td>
<td>1500V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER</td>
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<tr>
<td>C06CF</td>
<td>0.1pF-47pF</td>
<td>±10%</td>
<td>2000V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER</td>
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<tr>
<td>C08UL</td>
<td>0.1pF-100pF</td>
<td>±20%</td>
<td>3000V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER</td>
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<td>C11UL</td>
<td>0.1pF-100pF</td>
<td>±50%</td>
<td>5000V</td>
<td>Au TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER</td>
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<td>C17UL</td>
<td>0.1pF-1000pF</td>
<td>±100%</td>
<td>7200V</td>
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#### PRESIDIO: 0805NPQ101K2P3

<table>
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<tr>
<th>SIZE &amp; DIELECTRIC MATERIAL</th>
<th>Capacitance</th>
<th>Tolerance</th>
<th>Voltage</th>
<th>Termination</th>
<th>Packaging</th>
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<tbody>
<tr>
<td>0402 = DLI-C04UL</td>
<td>±0.05pF</td>
<td>±0.1pF</td>
<td>±0.50pF</td>
<td>±1%</td>
<td>1 = Axial Ribbon</td>
</tr>
<tr>
<td>0505 = DLI-C11UL</td>
<td>±0.1pF</td>
<td>±0.25pF</td>
<td>±1%</td>
<td>±2%</td>
<td>2 = Radial Ribbon</td>
</tr>
<tr>
<td>0605 = DLI-C06UL</td>
<td>±0.5pF</td>
<td>±2%</td>
<td>±2%</td>
<td>±5%</td>
<td>3 = Center Ribbon</td>
</tr>
<tr>
<td>0805 = DLI-C08UL</td>
<td>±1%</td>
<td>±5%</td>
<td>±5%</td>
<td>±10% / +20%</td>
<td>4 = Customer Defined</td>
</tr>
<tr>
<td>1010 = DLI-C17UL</td>
<td>±2%</td>
<td>±10%</td>
<td>±20%</td>
<td>±80% / -20%</td>
<td>5 = CUSTOMER SPECIFIED</td>
</tr>
</tbody>
</table>

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