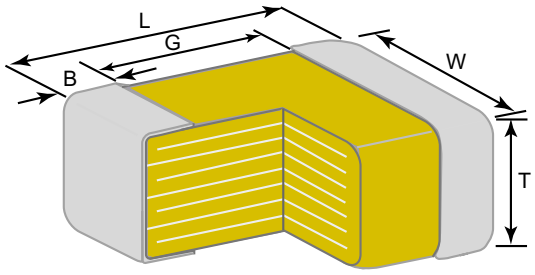
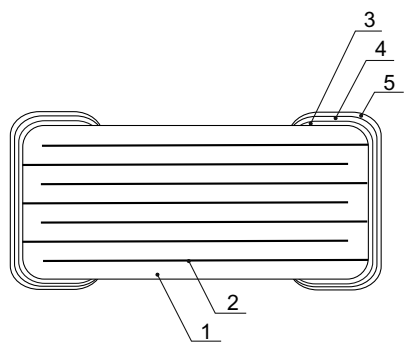


TDK MLCC Datasheet¹

TDK P/N

| | | | | | | |
|--------------|------------|-----------|------------|----------|----------|-------------|
| C1005 | X7R | 1H | 221 | K | T | XXXX |
| 1) | 2) | 3) | 4) | 5) | 6) | 7) |

| No. | Segment | Detail | Comments |
|-----|-----------------------------|---------------------|--------------------------------|
| 1 | Case Size | 1.0 x 0.5 mm | See below for dimensions. |
| 2 | Temperature Characteristics | -25+85°C 0 ± 10% | Class II ; Conforms to EIA 198 |
| 3 | Rated Voltage | 50 V | DC |
| 4 | Capacitance | 220 pF | 1.0 ± 0.2 Vrms , 1MHz ± 10% |
| 5 | Capacitance Tolerance | ± 10% | Conforms to IEC 384-9 |
| 6 | Packaging Style | Tape and Reel, 8 mm | EIA 481 Format |
| 7 | TDK internal Code | XXXX | (Internal TDK use only) |
| - | Dissipation Factor (DF) | 2.5% max. | 1.0 ± 0.2 Vrms , 1MHz ± 10% |
| - | Insulation Resistance | 10000 MΩ min. | apply rated voltage for 60s |

| Physical Dimensions | | Material System | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------|--|-----------------|-------------|------------|---|------------|---|----------|---|-----------|---|-----------|--|--|-----|------|----------|--|--|--|---------|--|----------|--|--|--|----|-----|----|-----|---|------------|------|--------|--------|--|---|-----------|----|----|----|----|---|-------------|-------------|----|-------------|----|---|----|--|--|--|---|----|--|--|--|
|  | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Symbol</th> <th>Dimensions (mm)</th> </tr> </thead> <tbody> <tr> <td>L</td> <td>1.0 ± 0.05</td> </tr> <tr> <td>W</td> <td>0.5 ± 0.05</td> </tr> <tr> <td>T</td> <td>0.55 max</td> </tr> <tr> <td>B</td> <td>0.15 min.</td> </tr> <tr> <td>G</td> <td>0.35 min.</td> </tr> </tbody> </table> | | Symbol | Dimensions (mm) | L | 1.0 ± 0.05 | W | 0.5 ± 0.05 | T | 0.55 max | B | 0.15 min. | G | 0.35 min. | <table border="1"> <thead> <tr> <th rowspan="2">No.</th> <th rowspan="2">Name</th> <th colspan="4">Material</th> </tr> <tr> <th colspan="2">Class I</th> <th colspan="2">Class II</th> </tr> <tr> <td></td> <td></td> <td>Pd</td> <td>TME</td> <td>Pd</td> <td>TME</td> </tr> </thead> <tbody> <tr> <td>1</td> <td>Dielectric</td> <td>TiO2</td> <td>CaZrO3</td> <td colspan="2">BaTiO3</td> </tr> <tr> <td>2</td> <td>Electrode</td> <td>Pd</td> <td>Ni</td> <td>Pd</td> <td>Ni</td> </tr> <tr> <td>3</td> <td rowspan="3">Termination</td> <td>Ag or Ag/Pd</td> <td>Cu</td> <td>Ag or Ag/Pd</td> <td>Cu</td> </tr> <tr> <td>4</td> <td colspan="4">Ni</td> </tr> <tr> <td>5</td> <td colspan="4">Sn</td> </tr> </tbody> </table> | | No. | Name | Material | | | | Class I | | Class II | | | | Pd | TME | Pd | TME | 1 | Dielectric | TiO2 | CaZrO3 | BaTiO3 | | 2 | Electrode | Pd | Ni | Pd | Ni | 3 | Termination | Ag or Ag/Pd | Cu | Ag or Ag/Pd | Cu | 4 | Ni | | | | 5 | Sn | | | |
| Symbol | Dimensions (mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L | 1.0 ± 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| W | 0.5 ± 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T | 0.55 max | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | 0.15 min. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | 0.35 min. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. | Name | Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Class I | | Class II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Pd | TME | Pd | TME | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Dielectric | TiO2 | CaZrO3 | BaTiO3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Electrode | Pd | Ni | Pd | Ni | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Termination | Ag or Ag/Pd | Cu | Ag or Ag/Pd | Cu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Ni | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | Sn | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

¹ This datasheet gives a basic overview of the multilayer ceramic capacitor as defined in the above TDK part number. A full specification (including part number construction, available capacitance ranges, packaging and caution notes) is available upon request. The information above is subject to change by TDK without any notice.