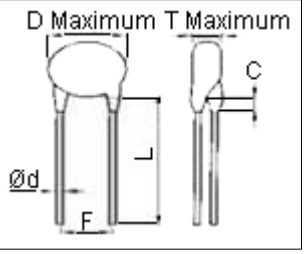
# Ceramic Disc Capacitors

## Mechanical:

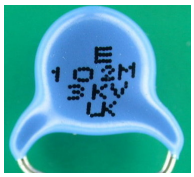
**Available lead code (Epoxy Resin Coating) - (unit : mm)**

| Lead type | P/N Digits | Pitch (F) | Lead Length (L) | Packing | Lead Configuration |
|---|---|---|---|---|---|
| Lead Style : B Straight Long Lead | B20C7 | 7.5 ± 1 | 20 Min. | Bulk |  |
| | B20C7 | 7.5 ± 1 | 20 Min. | | |
| | B20C0 | 10 ± 1 | 20 Min. | | |
| | B20C0 | 10 ± 1 | 20 Min. | | |



* Lead diameter Ød : 0.6 ±0.06
* e (Coating extension on leads): 3 mm maximum for straight lead lead style, not exceed the kink for kink lead.

## Capacitance Value vs. Rate Voltage, Product Diameter:

| Capacitance Value vs. Rate Voltage, Product Diameter and Type | | | | Photo: Z5U  | | | |
|---|---|---|---|---|---|---|---|
| **TC** | **Z5U (Class II, Temperature : +10°C to +85°C, TCC : +22 to -56%)** | | | | | | |
| **Rate Voltage** | **3 KV** | | | | | | |
| **D φ (Code)** | **060** | **080** | **100** | **110** | **120** | **140** | **170** |
| **D Maximum (mm)** | **8** | **10** | **12** | **13** | **14** | **16** | **19** |
| **T Maximum (mm)** | **6** | **6** | **6** | **6** | **6** | **6** | **6** |
| 750 | - | - | - | - | - | - | - |
| 820 | - | - | - | - | - | - | - |
| 1,000 | 102 | - | - | - | - | - | - |
| 1,200 | - | 122 | - | - | - | - | - |
| 1,500 | - | 152 | - | - | - | - | - |
| 1,800 | - | 182 | - | - | - | - | - |
| 2,000 | - | 202 | - | - | - | - | - |
| 2,200 | - | 222 | - | - | - | - | - |
| 2,700 | - | - | 272 | - | - | - | - |
| 3,300 | - | - | 332 | - | - | - | - |
| 3,600 | - | - | - | 362 | - | - | - |
| 3,900 | - | - | - | 392 | - | - | - |
| 4,700 | - | - | - | - | 472 | - | - |
| 5,000 | - | - | - | - | 502 | - | - |
| 5,600 | - | - | - | - | - | 562 | - |
| 6,800 | - | - | - | - | - | 682 | - |
| 8,200 | - | - | - | - | - | - | 822 |
| 10,000 | - | - | - | - | - | - | 103 |
| φ d (mm) | 0.6 ±0.06 | | | | | | |

## Specification and Test Method:

**Scope:** This specification applies to high voltage constant, 3 KV ceramic capacitor.

**Test Conditions:** Unless otherwise specified, all tests shall be operated at the standard test conditions of temperature 5°C to 35°C and relative humidity 45% to 85%. When fails a test, retest be operated at the conditions of temperature 25°C ± 2°C, relative humidity of 60% to 70% and barometric pressure 860 to 1060 mbar.

**Handle Procedure:** To avoid unexpected testing results from occurring, the tested capacitor must be kept at room temperature for at least 30 minutes and completely discharged.

## Test Items:

| Item | Post-Test Requirements | Testing Procedure |
|---|---|---|
| Appearance Structure Size | No Abnormalities | - |
| Withstand Voltage | Between Terminals : No Abnormalities | 2 Times of The Rated Voltage<br>Test Voltage : 6 KV dc, 1 to 5 s |
| Insulation Resistance | 10,000 M Ω Min. | Insulation Resistance Shall be Measured at 60 ±5 Seconds After Rated Voltage Applied<br>Rated Voltage : 500 V dc |
| Capacitance | Tolerance : M : ±20% | Testing Frequency : 1 KHZ ±20%<br>Testing Temperature : 25 ±2°C<br>Testing Voltage : 1 ± 0.2 Vrms |
| Temperature Range | Operating Temperature : Z5U : +10°C to +85°C | |
| Dissipation Factor (DF) | Z5U : Below 2.5% | As Above Stipulation of Capacitance |
| Temperature Characteristic | Z5U : Within +22, -56% | Capacitance Shall be Measured at 25°C and Classified as Capacitance Change: Class : +10°C to +85°C |
| Terminal Strength | Tensile Strength : No Breakdown | Wire Diameter 0.5 mm, Loading Weight 0.5 kg for 10 ±1 s<br>Wire Diameter 0.6 mm, Loading Weight 1 kg for 10 ±1 s |
| | Bending Strength : No Breakdown | Wire Diameter 0.5 mm, Loading Weight 0.25 kg<br>Wire Diameter 0.6 mm, Loading Weight 0.5 kg (Bending Back and Forth 90° Twice) |
| | Appearance : No Abnormalities | Lead Wire or Terminals Shall be Immersed up to 2 mm Form Body.<br>Into The Molten Solder of Which Temperature : 260 (+5 / -0)°C for 5 to 10 Seconds. Then Leave at Standard Test Conditions for 4 to 24 hours, Then Measured.<br>※ When Soldering Capacitor With a Soldering Iron, it Should be Performed in Following Conditions.<br>Temperature of Iron-Tip : 350 to 400°C<br>Soldering Iron Wattage : 50 W Max.<br>Soldering Time : 3.5 Seconds Max. |
| | Capacitance Change : Z5U : ±15% Max. | |
| | Withstand Voltage :<br>(Between Terminals) No Abnormalities | |

## Test Items:

| Item | Post-Test Requirements | Testing Procedure |
|---|---|---|
| Humidity Characteristic (Stable Situation) | Appearance : No Abnormalities | Capacitors Shall be Subjected to a Relative Humidity of 90 to 95% at 40 ±2°C for 500 (+24 / -0) Hours. Then Dried for 1 to 2 Hours and Measured |
| | Capacitance Change : Z5U : ±20% Max. | |
| | DF : Z5U : 5% Max. | |
| | Insulation Resistance : 1,000 M Ω Min. | |
| Humidity Loading | Appearance : No Abnormalities | Capacitors Shall be Subjected to a Relative Humidity of 90 to 95% at 40 ±2°C for 500 (+24 / -0) Hours With Rated Voltage Applied With 50 mA Maximum Then Dried for 1 to 2 Hours and Measured |
| | Capacitance Change : Z5U : ±20% Max. | |
| | DF : Z5U : 5% Max. | |
| | Insulation Resistance : 500 M Ω Min. | |
| High Temperature Loading | Appearance : No Abnormalities | Capacitors Shall be Subjected to a Test of 150% Rated Voltage With 50 mA Maximum for 1,000 (+48 / -0) Hours at 85 ±2°C and Then Dried for 24 ±2 Hours and Measured |
| | Capacitance Change : Z5U : ±20% Max. | |
| | DF : Z5U : 4% Max. | |
| | Insulation Resistance : 1,000 M Ω Min. | |
| Temperature Cycling | Appearance : No Abnormalities | Capacitors Shall be Subjected to: -25 ±3°C (30 ±3 Minutes) → 25°C (3 Minutes) → 85 ±3°C (30 ±3 Minutes) → 25°C (3 Minutes) for 5 Cycle |
| | Capacitance Change : Z5U : ±20% Max. | |
| | DF : Z5U : 5% Max. | |
| | Insulation Resistance : 1,000 M Ω Min. | |

## Packaging :

Bulk : 1 K pcs / bag

## Part Number Table

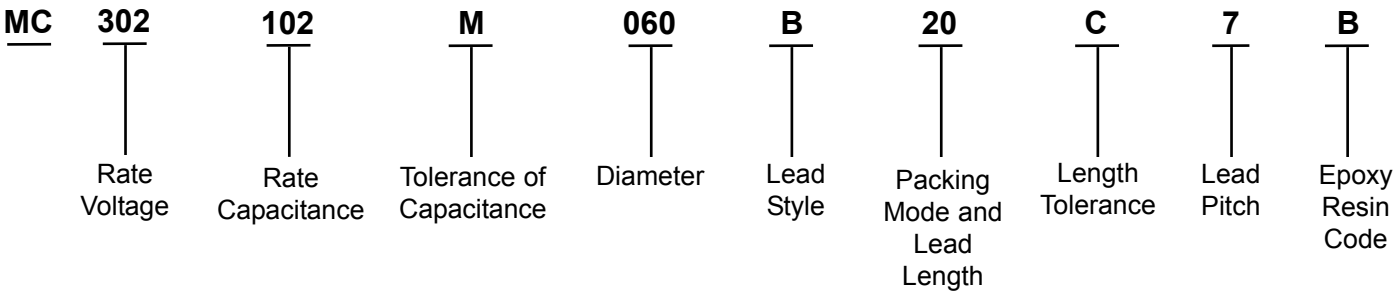
| Description | Part Number |
|---|---|
| Ceramic Disc Capacitor | MC202103M130B20C0B |
| Ceramic Disc Capacitor | MC202182M070B20C7B |
| Ceramic Disc Capacitor | MC202222M070B20C7B |
| Ceramic Disc Capacitor | MC202272M080B20C7B |
| Ceramic Disc Capacitor | MC202332M080B20C7B |
| Ceramic Disc Capacitor | MC202392M090B20C7B |
| Ceramic Disc Capacitor | MC202472M090B20C7B |
| Ceramic Disc Capacitor | MC202682M110B20C0B |
| Ceramic Disc Capacitor | MC302102M060B20C7B |
| Ceramic Disc Capacitor | MC302103M170B20C0B |

# Ceramic Disc Capacitors

## Part Number Table

| Description | Part Number |
|---|---|
| Ceramic Disc Capacitor | MC302152M080B20C7B |
| Ceramic Disc Capacitor | MC302182M080B20C7B |
| Ceramic Disc Capacitor | MC302222M080B20C7B |
| Ceramic Disc Capacitor | MC302272M100B20C7B |
| Ceramic Disc Capacitor | MC302332M100B20C7B |
| Ceramic Disc Capacitor | MC302392M110B20C0B |
| Ceramic Disc Capacitor | MC302472M120B20C0B |
| Ceramic Disc Capacitor | MC302682M140B20C0B |
| Ceramic Disc Capacitor | MC302822M170B20C0B |

## Part Number Explanation:




**Rated Voltage** : 302 = 3 KV dc
**Rate Capacitance** : 102 = 100 pF
**Tolerance of Capacitance** : M = ±20%
**Diameter** : 060 = 6, 070 = 7, 080 = 8, 090 = 9, 100 = 10, 120 = 12 and 130 = 13 mm
**Lead Style** : Refer to Mechanical
**Packing Mode and Lead Length** : 20 = 20 mm
**Length Tolerance** : C = Min.
**Lead Pitch** : 7 = 7.5 ±1 mm and 0 = 10 ±1 mm
**Epoxy Resin Code** : B = Pb free, epoxy resin

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