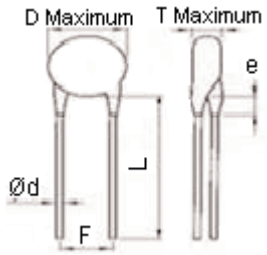
Ceramic Disc Capacitor, CH

Mechanical

Available lead code: (Unit : mm)

Lead Type	P/N (13-17) Digits	Pitch (F)	Lead Length (L)	Available Rated Voltage	Packing	Lead Configuration
Lead Style : B Straight Long Lead	B20C7	7.5 ± 1	20 Min.	1 KV	Bulk	

※ Lead diameter : φ = 0.6 ±0.06 mm
※ e (Coating extension on leads):
For straight lead style: 2 mm maximum when the rated voltage is 1 KV V dc

Capacitance Value vs. Rate Voltage, Product Diameter :

TC	CH (Class I, Temperature : -25°C to +85°C, TCC: 0 ±60 ppm/°C)
Rate Voltage	1 KV
Dφ	050
D Maximum (mm)	6
T Maximum (mm)	4.5
10	100

Packaging

Packaging Style

Bulk : 1,000 pieces / bag

Specification and Test Method :

Scope : This specification applies to temperature compensating ceramic disc 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 1,060 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		As section 3
Withstand Voltage	Between Terminals : No Abnormalities		1 KV and Above : 200% Rated Voltage With 50 mA Maximum Charging Current for 1 to 5 s
	Between Terminal and Enclosure : No Abnormalities		Small Metallic Balls With 1 mm Diameters Shall be Put on a Vessel and The Test Capacitor Shall be Submerged Except 2 mm From The Top of its Component Body. The Test Voltage Shall be Applied Between The Short-Circuited Terminals And The Metallic Balls. (Apply 1.3 KV dc of Rated Voltage Between Terminals and Enclosure for 1 to 5 s)
Insulation Resistance	10,000 M Ω Min.		Insulation Resistance Shall be Measured at 60 ±5 Seconds After Applied Voltage (Rated) Rated Voltage : 500 V and Above = 500 V
Capacitance	Tolerance : J : ±5%		Testing Frequency : 1 MHz ±20% Testing Voltage : 1 V rms
Operating Temperature Range	-25°C to +125°C		
Q Factor	30 pF and Above	Q ≥ 1,000	As Above Stipulation of Capacitance
	Below 30 pF	Q ≥ 400 + 20 × C	
Temperature Characteristic	Temperature Coefficient : CH : 0 ±60 PPM/°C		According to Step 1 to 5 In Order, Measured Capacitance When Temperature Reach Balance and Temperature Coefficient Shall be Calculated on The Following Formula : PPM/°C = (C2 - C1) × 10E6 / C1 (T2-T1) STEP 1, 3, 5 : 25°C STEP 2 : -25°C STEP 4 : 85°C Note : C1 = Capacitance as Step 3 C2 = Capacitance as Step 2 or 4 T1 = Temperature as Step 3 T2 = Temperature as Step 2 or 4
	Capacitance Tolerance : Within ±0.2% or ±0.05 pF, Whichever is Large		According to Above Step 1,3 and 5, Capacitance Tolerance Shall be Calculated on the Following Formula : Δ C% = (G - S) / C1 Note : G = Greatest Capacitance as Testing Result of Step 1,3 and 5 S = Least Capacitance as Testing Result of Step 1, 3 and 5 C1 = Capacitance as Step 3
Terminal Strength	Tensile Strength : No Breakdown		Wire Diameter 0.5 mm Loading Weight 0.5 Kgs, for 10 ±1 s Wire Diameter .0.6 mm Loading Weight 1 Kgs, for 10 ±1 s
	Bending Strength : No Breakdown		Wire Diameter 0.5 mm, Loading Weight 0.25 Kgs Wire Diameter 0.6 mm, Loading Weight 0.5 Kgs (Bending Back and Forth 90° Twice)

Test Items:

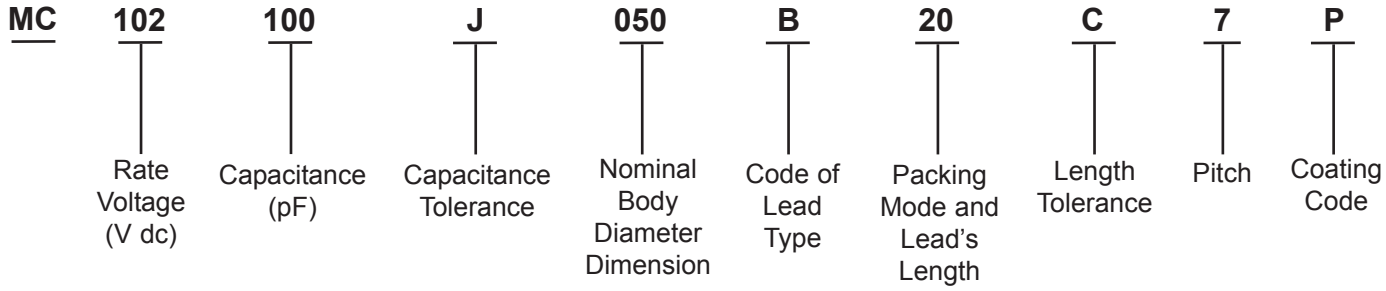
Item	Post-Test Requirements	Testing Procedure
Soldering Heat Resistance	Appearance : No Abnormalities	Lead Wire or Terminals Shall be Immersed Up to 2 mm form Body (A) Body Diameter ≥ 5 mm : Into The Molten Solder of Which Temperature : 260 (+ 5 / - 0)°C for 3 ±0.5 s (B) Body Diameter ≥ 5 mm: Into The Molten Solder of Which Temperature 260 (+5 / -0)°C for 5 to 10 s Then Leave at Standard Test Conditions for 1 to 2 Hours, Then Measured ※ When Soldering Capacitor With a Soldering Iron, it Should be Performed in Following Conditions. Temperature of Iron-Tip : 350 to 400°C Soldering Iron Wattage : 50 W Maximum Soldering Time : 3.5 seconds Maximum
	Capacitance Change : Within ±2.5% or ±0.25 pF, Whichever is Large	
	Withstand Voltage : (Between Terminals) No Abnormalities	
Humidity Characteristic	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 : CH : Within ±5% or ±0.5 pF, Whichever is Large	
	Q Factor : CH : Less than 10 pF = > Q ≥ 200 + 10 × C More than 10 pF and Less than 30 pF = > Q ≥ 275 + 5 × C/2 More than 30 pF = > Q ≥ 350	
	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 (Less than 50 mA), than Dried for 1 to 2 Hours and Measured
	Capacitance Change : CH : Within ±7.5% or ±0.75 pF, Whichever is Large	
	Q Factor :CH : Less than 30 pF = > Q ≥ 100 + 10 × C/3 More than 30 pF = > Q ≥ 200	
	Insulation Resistance : 500 M Ω Min.	
High Temperature Loading	Appearance : No Abnormalities	Capacitors Shall be Subjected to a Test of : (A) Below 1 KV: 200% Rated Voltage with 50 mA Maximum (B) 1 KV and above: 150% Rated Voltage with 50 mA Maximum for 1,000 (+48 / -0) Hours at 85°C ±2°C (for CH and SL) and than Dried for 1 to 2 Hours and Measured
	Capacitance Change : CH : Within ±3% or ±0.3 pF, Whichever is Large	
	Q Factor : CH : Less than 10 pF = > Q ≥ 200 + 10 × C More than 10 pF and Less than 30 pF = > Q ≥ 275 + 5 × C/2 More than 30 pF = > Q ≥ 350	
	Insulation Resistance : 1,000 MΩ Min.	
Temperature Cycling	Appearance : No Abnormalities	Capacitors Shall be Subjected to: -25 ±3°C (30 ±3 min) → 25°C (3 min) → 85 ±3°C (30 ±3 min) → 25°C (3 min) for 5 Cycle
	Capacitance Change : Within ±5% or ±0.5 pF, Whichever is Large	
	DF C < 30 pF : Q ≥ 275 + (5/2) C C ≥ 30 pF : Q ≥ 350	
	Insulation Resistance : 1,000 M Ω Min.	

Ceramic Disc Capacitor, CH

Part Number Table

Description	Part Number
Ceramic Disc Capacitor, CH	MC102100J050B20C7P

Part Number Explanation:



Rated Voltage (V dc) : 102 = 1,000 V
Capacitance (pF) : 100 = 100
Capacitance Tolerance : J = ±5% (for above 10pF)
Nominal Body Diameter Dimension : 050 = 5
Code of Lead Type : Refer to Mechanical
Packing Mode and Lead's Length L : 20 = 20 mm
Length Tolerance : C = Min.
Pitch : 7 = 7.5 ±1 mm
Coating Code : P = Phenolic resin -Pb free, voltage ≤ 1 kV