

Vishay Vitramon

HALOGEN

FREE

Surface Mount Multilayer Ceramic Chip Capacitors High Frequency DSCC Qualified Type 05003

FEATURES

- US Defense Supply Center approved
- Federal stock control number, CAGE CODE SHV71
- Case size 0402
- · High frequency
- · Excellent aging characteristics
- Tin/lead termination code "Z"
- Lead (Pb)-free terminations code "M"
- · Surface mount, wet build process
- Reliable Noble Metal Electrode (NME) system
- Made with a combination of design, materials and tight process control to achieve very high field reliability
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Note

* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

APPLICATIONS

- Broadband wireless communication
- · Satellite communication
- WiFi (802.11) and WiMax (802.16)
- VolP networks and cellular base stations
- · Subscriber based wireless devices



ELECTRICAL SPECIFICATIONS

Note

• Electrical characteristics at 25 °C unless otherwise specified

Operating Temperature: - 55 °C to + 125 °C

Capacitance Range: 1.0 pF to 27 pF Voltage Rating: $50 V_{DC}$ to $100 V_{DC}$

Temperature Coefficient of Capacitance (TCC):

BP: 0 ppm/°C \pm 30 ppm/°C from - 55 °C to + 125 °C with zero (0) V_{DC} applied

Dissipation Factor (DF):

BP: 0.05 % max. at 1.0 V_{RMS} and 1 MHz

Aging Rate: 0 % maximum per decade

Insulation Resistance (IR):

At + 25 °C and rated voltage 100 000 M Ω minimum or 1000 $\Omega F,$ whichever is less

At + 125 °C and rated voltage 10 000 M Ω minimum or 100 ΩF , whichever is less

Dielectric Strength Test:

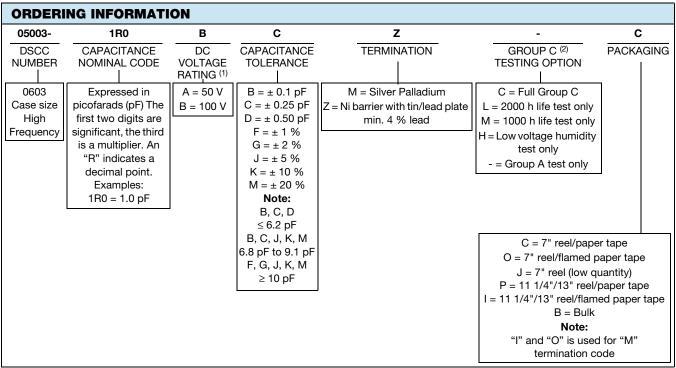
Performed per method 103 of EIA-198-2-E. Applied test voltages

≤ 250 V_{DC}-rated: 200 % of rated voltage



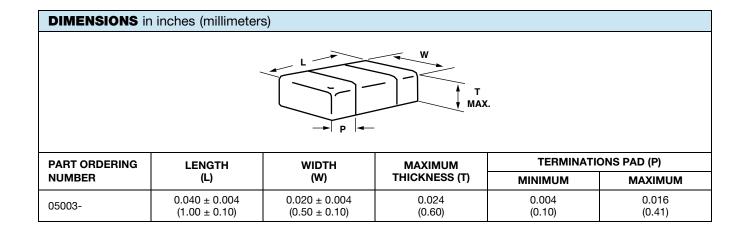
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QUICK REFERENCE DATA								
DIELECTRIC	CASE CODE	MAXIMUM VOLTAGE (V)	CAPACITANCE					
			MINIMUM	MAXIMUM				
BP	0402	100	1.0 pF	27 pF				



Notes

- (1) DC voltage rating should not be exceeded in application
- (2) Selecting one of the group C options with life testing may extend the delivery time





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SELECTION CHART						
DIELECTRIC BP						
STYLE CASE CODE VOLTAGE (V _{DC}) VOLTAGE CODE		05003 0402				
					50	100
		Α	В			
		CAP. CODE	CAP.			
1R0	1.0 pF	••	••	B, C		
1R1	1.1 pF	••	••	B, C, D		
1R2	1.2 pF	••	••	B, C, D		
1R3	1.3 pF	••	••	B, C, D		
1R5	1.5 pF	••	••	B, C, D		
1R6	1.6 pF	••	••	B, C, D		
1R7	1.7 pF	••	••	B, C, D		
1R8	1.8 pF	••	••	B, C, D		
2R0	2.0 pF	••	••	B, C, D		
2R1	2.1 pF	••	••	B, C, D		
2R2	2.2 pF	••	••	B, C, D		
2R4	2.4 pF	••	••	B, C, D		
2R7	2.7 pF	••	••	B, C, D		
3R0	3.0 pF	••	••	B, C, D		
3R3	3.3 pF	••	••	B, C, D		
3R6	3.6 pF	••	••	B, C, D		
3R9	3.9 pF	••	••	B, C, D		
4R3	4.3 pF	••	••	B, C, D		
4R7	4.7 pF	••	••	B, C, D		
5R1	5.1 pF	••	••	B, C, D		
5R6	5.6 pF	••	••	B, C, D		
6R2	6.2 pF	••	••	B, C, D		
6R8	6.8 pF	••	••	B, C, J, K, M		
7R5	7.5 pF	••	••	B, C, J, K, M		
8R2	8.2 pF	••	••	B, C, J, K, M		
9R1	9.1 pF	••	••	B, C, J, K, M		
100	10 pF	••	••	F, G, J, K, M		
110	11 pF	••	••	F, G, J, K, M		
120	12 pF	••	••	F, G, J, K, M		
130	13 pF	••	••	F, G, J, K, M		
150	15 pF	••	••	F, G, J, K, M		
180	18 pF	••	••	F, G, J, K, M		
200	20 pF	••		F, G, J, K, M		
220	22 pF	••		F, G, J, K, M		
240	24 pF	••		F, G, J, K, M		
270	27 pF	••		F, G, J, K, M		

Note

•• paper carrier tape



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DSCC PACKAGING QUANTITIES (1)								
CASE TAPE CODE SIZE	7" REEL QUANTITIES		11 1/4" AND 13" REEL QUANTITIES	BULK				
		PACKAGING CODE "C"/"O"	PACKAGING CODE "J"	PAPER TAPE PACKAGING CODE "P"/" "	VIAL PACKAGING CODE "B"			
0402	8 mm	4000	1000	10 000	100			

Note

STORAGE AND HANDLING CONDITIONS

- (1) Store the components at 5 °C to + 40 °C ambient temperature and ≤ 70 % related humidity conditions.
- (2) The product is recommended to be used within a time-frame of 2 years after shipment. Check solderability in case extended shelf life beyond the expiry date is needed.

Precautions

- a. Do not store products in an environment containing corrosive elements, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. This may cause corrosion or oxidization of the terminations, which can easily lead to poor soldering.
- b. Store products on the shelf and avoid exposure to moisture or dust.
- c. Do not expose products to excessive shock, vibration, direct sunlight and so on.

⁽¹⁾ Reference: EIA Standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"



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