

Surface Mount Multilayer Ceramic Chip Capacitors High Frequency DSCC Qualified Type 05002



FEATURES

- US Defense Supply Center approved
- Federal stock control number, CAGE CODE 95275
- Case size 0603
- High frequency
- Excellent aging characteristics
- Lead (Pb)-free “M” terminations code
- Tin/lead (“Z” termination code) available
- Surface-mountable, precious metal technology, wet build process
- Made with a combination of design, materials and tight process control to achieve very high field reliability



Available
RoHS*
COMPLIANT

ELECTRICAL SPECIFICATIONS

Note: Electrical characteristics at 25 °C unless otherwise specified

Operating Temperature:

- 55 °C to + 125 °C

Capacitance Range:

1.0 pF to 100 pF

Voltage Rating:

50 Vdc to 250 Vdc

Temperature Coefficient of Capacitance (TCC):

BP: 0 ± 30 ppm/°C from - 55 °C to + 125 °C with zero (0) Vdc 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 MΩ minimum or 1000 ΩF, whichever is less

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

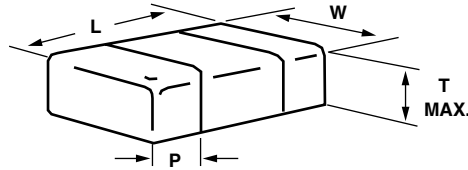
Dielectric Withstanding Voltage (DWV):

This is the maximum voltage the capacitors are tested for a 1 to 5 s period and the charge/discharge current does not exceed 50 mA

≤ 250 Vdc: DWV at 250 % of rated voltage

* Pb containing terminations are not RoHS compliant, exemptions may apply

DIMENSIONS IN INCHES (millimeters)



PART ORDERING NUMBER	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATIONS PAD (P)	
				MINIMUM	MAXIMUM
05002-	0.063 ± 0.006 [1.60 ± 0.15]	0.032 ± 0.006 [0.81 ± 0.15]	0.036 [0.91]	0.008 [0.20]	0.020 [0.50]

PART NUMBERING AND ORDERING

05002-	1R0	B	F	Z	-	T
DSCC NUMBER	CAPACITANCE NOMINAL CODE	DC VOLTAGE RATING ⁽¹⁾	CAPACITANCE TOLERANCE	TERMINATION	GROUP C ⁽²⁾ TESTING OPTION	PACKAGING
0603 Case size High Frequency	Expressed in picofarads (pF) The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point. Examples: 1R0 = 1.0 pF	A = 50 V B = 100 V C = 200 V K = 250 V	B = ± 0.1 pF C = ± 0.25 pF D = ± 0.5 pF F = ± 1 % G = ± 2 % J = ± 5 % K = ± 10 % M = ± 20 % Note: B, C, D ≤ 6.2 pF F, G, H ≥ 16.2 pF B, C, J, K, M 6.8 pF to 9.1 pF F, G, J, K, M ≥ 10 pF	M = Palladium/Silver Z = Ni barrier with tin/lead plate min. 4 % lead	C = Full Group C L = 2000 h life test only M = 1000 h life test only H = Low voltage humidity test only - = Group A test only	T = 7" reel plastic tape C = 7" reel paper tape J = 7" reel (low quantity) R = 11 1/4" reel plastic tape P = 11 1/4" reel paper tape B = Bulk

Notes:

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



DSCC 05002 MLCCS CAPACITANCE RANGE					
STYLE		05002			
EIA TYPE		0603			
RATED VOLTAGE (Vdc)		50	100	200	250
CAP. CODE	CAPACITANCE				
1R0	1.0 pF	•	•	•	•
1R1	1.1 pF	•	•	•	•
1R2	1.2 pF	•	•	•	•
1R3	1.3 pF	•	•	•	•
1R4	1.4 pF	•	•	•	•
1R5	1.5 pF	•	•	•	•
1R6	1.6 pF	•	•	•	•
1R7	1.7 pF	•	•	•	•
1R8	1.8 pF	•	•	•	•
1R9	1.9 pF	•	•	•	•
2R0	2.0 pF	•	•	•	•
2R1	2.1 pF	•	•	•	•
2R2	2.2 pF	•	•	•	•
2R4	2.4 pF	•	•	•	•
2R7	2.7 pF	•	•	•	•
3R0	3.0 pF	•	•	•	•
3R3	3.3 pF	•	•	•	•
3R6	3.6 pF	•	•	•	•
3R9	3.9 pF	•	•	•	•
4R3	4.3 pF	•	•	•	•
4R7	4.7 pF	•	•	•	•
5R1	5.1 pF	•	•	•	•
5R6	5.6 pF	•	•	•	•
6R2	6.2 pF	•	•	•	•
6R8	6.8 pF	•	•	•	•
7R5	7.5 pF	•	•	•	•
8R2	8.2 pF	•	•	•	•
9R1	9.1 pF	•	•	•	•
100	10 pF	•	•	•	•
110	11 pF	•	•	•	•
120	12 pF	•	•	•	•
130	13 pF	•	•	•	•
150	15 pF	•	•	•	•
180	18 pF	•	•	•	•
200	20 pF	•	•	•	•
220	22 pF	•	•	•	•
240	24 pF	•	•	•	•
270	27 pF	•	•	•	•
300	30 pF	•	•	•	•
330	33 pF	•	•	•	•
360	36 pF	•	•	•	•
390	39 pF	•	•	•	•
430	43 pF	•	•	•	•
470	47 pF	•	•	•	•
510	51 pF	•	•		
560	56 pF	•	•		
620	62 pF	•	•		
680	68 pF	•	•		
750	75 pF	•			
820	82 pF	•			
910	91 pF	•			
101	100 pF	•			



DSCC PACKAGING QUANTITIES (1) (2) (3)							
		7" REEL QUANTITIES		11 1/4" AND 13" REEL QUANTITIES		BULK QUANTITIES	
BODY SIZE	TAPE SIZE	PAPER TAPE PACKAGING CODE	PLASTIC TAPE PACKAGING CODE	PAPER TAPE PACKAGING CODE	PLASTIC TAPE PACKAGING CODE	VIAL PACKAGING CODE	WAFFLE PACKAGING CODE
0603	8 mm	C: 3000/J: 1000	T: 3000/J: 1000	P: 10 000	R: 10 000	B: 100	N/a

Notes:

- (1) Vishay Vitramon uses • paper carrier and •• plastic carrier tape
 (2) REFERENCE: EIA Standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"
 (3) N/a = Not available



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