

## Surface Mount Multilayer Ceramic Chip Capacitors High Frequency DSCC Qualified Type 05001



### FEATURES

- US Defense Supply Center approved
- Federal stock control number, CAGE CODE 95275
- Case size 0805
- 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
- Halogen-free according to IEC 61249-2-21 definition



Available

**RoHS\***  
COMPLIANT**HALOGEN**  
**FREE**  
Available

### APPLICATIONS

- Broadband wireless communication
- Satellite communication
- WiFi (802.11) and WiMax (802.16)
- VoIP 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 100 pF

**Voltage Rating:** 50 Vdc to 250 Vdc

**Temperature Coefficient of Capacitance (TCC):**

**BP:** 0 ppm/°C ± 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<sub>rms</sub> 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 Strength test:**

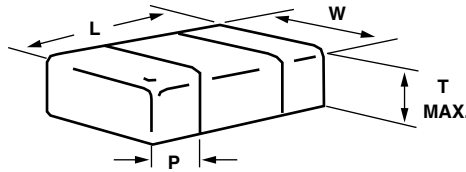
Performed per Method 103 of EIA-198-2-E.

Applied test voltages:

≤ 250 Vdc-rated: 200 % 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         |
| 05001-               | 0.079 ± 0.008<br>[2.00 ± 0.20] | 0.049 ± 0.008<br>[1.25 ± 0.20] | 0.055<br>[1.39]       | 0.010<br>[0.25]      | 0.028<br>[0.71] |

## PART NUMBERING AND ORDERING

| 05001-                              | 1R0  | B   | F  | Z  | -   | C  |
|-------------------------------------|--|---|--|--|---|--|
| DSCC NUMBER                         | CAPACITANCE NOMINAL CODE   | DC VOLTAGE RATING (1)                           | CAPACITANCE TOLERANCE  | TERMINATION  | GROUP C TESTING OPTION  | PACKAGING  |
| 0805<br>Case size<br>High Frequency | Expressed in picofarads (pF) The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point.<br>Examples:<br>1R0 = 1.0 pF | A = 50 V<br>B = 100 V<br>C = 200 V<br>K = 250 V | B = ± 0.1 pF<br>C = ± 0.25 pF<br>D = ± 0.5 pF<br>F = ± 1 %<br>G = ± 2 %<br>J = ± 5 %<br>K = ± 10 %<br>M = ± 20 %<br><b>Note</b><br>B, C, D ≤ 6.2 pF<br>B, C, J, K, M 6.8 pF to 9.1 pF<br>F, G, J, K, M ≥ 10 pF | M = Silver Palladium<br>Z = Ni barrier with tin/lead plate min. 4 % lead | C = Full Group C<br>L = 2000 h life test only<br>M = 1000 h life test only<br>H = Low voltage humidity test only<br>- = Group A test only | T = 7" reel/plastic tape<br>C = 7" reel/paper tape<br>J = 7" reel (low quantity)<br>R = 11 1/4"/13" reel/plastic tape<br>P = 11 1/4"/13" reel/paper tape<br>B = Bulk |

### 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



| <b>DSCC 05001 MLCCS CAPACITANCE RANGE</b> |        |       |     |     |     |
|---|--------|-------|-----|-----|-----|
| STYLE                                     |        | 05001 |     |     |     |
| EIA TYPE                                  |        | 0805  |     |     |     |
| VOLTAGE (Vdc)                             |        | 50    | 100 | 200 | 250 |
| CAP. CODE                                 | CAP.   |       |     |     |     |
| 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 05001

Vishay Vitramon

Surface Mount Multilayer Ceramic Chip Capacitors  
High Frequency DSCC Qualified Type 05001



| <b>DSCC PACKAGING QUANTITIES (1)(2)(3)</b> |                  |                                  |                                    |  |                                    |                            |                              |
|--|------------------|----------------------------------|------------------------------------|--|------------------------------------|----------------------------|------------------------------|
|  |                  | <b>7" REEL QUANTITIES</b>        |                                    | <b>11 1/4" AND 13" REEL QUANTITIES</b> |                                    | <b>BULK QUANTITIES</b>     |                              |
| <b>BODY SIZE</b>                           | <b>TAPE SIZE</b> | <b>PAPER TAPE PACKAGING CODE</b> | <b>PLASTIC TAPE PACKAGING CODE</b> | <b>PAPER TAPE PACKAGING CODE</b>       | <b>PLASTIC TAPE PACKAGING CODE</b> | <b>VIAL PACKAGING CODE</b> | <b>WAFFLE PACKAGING CODE</b> |
| 0805                                       | 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



## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.