

## Surface Mount Multilayer Ceramic Chip Capacitors DSCC Qualified Type 05007



### FEATURES

- Excellent aging characteristics
- Stable BP, BR and BX dielectrics
- Federal stock control number CAGE CODE 95275
- Surface-mount, precious metal technology, wet build process
- Made with a combination of design, materials and tight process control to achieve very high field reliability
- US defense supply center approved
- Case size 1206
- Tin/Lead ("Z" and "U" termination codes) available



Available  
**RoHS\***  
COMPLIANT

### ELECTRICAL SPECIFICATIONS

**Note:** Electrical characteristics at + 25 °C unless otherwise specified

**Operating Temperature:** BP, BR, BX: - 55 °C to + 125 °C

#### Capacitance Range:

**BP:** = 0.5 pF to 6800 pF

**BR:** = 1000 pF to 0.33 μF

**BX:** = 1000 pF to 0.33 μF

**Voltage Rating:** 16 Vdc to 200 Vdc

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

**BP:** = 0 ± 30 ppm/°C from - 55 °C to + 125 °C  
with zero (0) Vdc applied

**BP:** = 0 ± 30 ppm/°C from - 55 °C to + 125 °C  
with 100 % rated Vdc applied

**BR:** = ± 15 % from - 55 °C to + 125 °C  
with zero (0) Vdc applied

**BR:** = + 15 %, - 40 % from - 55 °C to + 125 °C  
with 100 % rated Vdc applied

**BX:** = ± 15 % from - 55 °C to + 125 °C  
with zero (0) Vdc applied

**BX:** = + 15 %, - 25 % from - 55 °C to + 125 °C  
with 100 % rated Vdc applied

#### Dissipation Factor (DF):

##### BP:

0.15 % max. at 1.0 V<sub>rms</sub> and 1 MHz for values ≤ 1000 pF

0.15 % max. at 1.0 V<sub>rms</sub> and 1 kHz for values > 1000 pF

##### BR and BX:

≤ 25 V ± 3.5 % max. at 1.0 V<sub>rms</sub> and 1 kHz

≥ 50 V ± 2.5 % max. at 1.0 V<sub>rms</sub> and 1 kHz

#### Aging Rate:

**BP:** = 0 % maximum per decade

**BR, BX:** = 1 % 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

≤ 200 Vdc: DWV at 250 % of rated voltage

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

DIMENSIONS					
PART ORDERING NUMBER	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATIONS PAD (P)	
				MINIMUM	MAXIMUM
05007-	0.126 ± 0.008 [3.20 ± 0.20]	0.063 ± 0.008 [1.60 ± 0.20]	0.067 [1.70]	0.010 [0.25]	0.028 [0.71]

ORDERING INFORMATION							
05007-	BP	101	B	J	Z	-	T
DSCC NUMBER	DIELECTRIC	CAPACITANCE NOMINAL CODE	DC VOLTAGE RATING <sup>(1)</sup>	CAPACITANCE TOLERANCE	TERMINATION	GROUP C TESTING OPTION	PACKAGING
CASE CODE 1206	BP BR BX	Expressed in picofarads (pF) The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point. Examples: 101 = 100 pF 1R8 = 1.8 pF	Y = 16 V Z = 25 V A = 50 V B = 100 V C = 200 V	C = ± 0.25 pF D = ± 0.5 pF F = ± 1 % G = ± 2 % H = ± 3 % J = ± 5 % K = ± 10 % M = ± 20 % <b>NOTE:</b> C, D < 10 pF (BP) F, G, H ≥ 10 pF (BP) J, K, M ≥ 10 pF (BP, BR, BX)	M = AgPd Z = Ni barrier with tin/lead plate min. 4 % lead U = Base metallization-barrier metal-solder coated (tin/lead alloy, with a minimum of 4 % lead). Solder has a melting point of + 200 °C or less. Solder coat thickness is a minimum of 69 μ".	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 J = 7" Reel (low quantity) R = 11 1/4" Reel Plastic tape B = Bulk

**Notes:**

<sup>(1)</sup> DC voltage rating should not be exceeded in application

<sup>(2)</sup> "U" Termination part number code for DSCC product length, width and thickness dimensions positive tolerances (including bandwidth) above are allowed to increase by the following amounts: Length 0.023 [0.60], Width/Thickness 0.012 [0.30]



<b>DIELECTRIC 05007 MLCCS</b>														
STYLE		05007												
EIA TYPE		1206												
DIELECTRIC		BP					BR				BX			
VOLTAGE (Vdc)		16	25	50	100	200	16	25	50	100	16	25	50	100
CAP. CODE	CAP.													
0R5	0.5 pF	•	•	•	•	•								
1R0	1.0 pF	•	•	•	•	•								
1R2	1.2 pF	•	•	•	•	•								
1R5	1.5 pF	•	•	•	•	•								
1R8	1.8 pF	•	•	•	•	•								
2R2	2.2 pF	•	•	•	•	•								
2R7	2.7 pF	•	•	•	•	•								
3R3	3.3 pF	•	•	•	•	•								
3R9	3.9 pF	•	•	•	•	•								
4R7	4.7 pF	•	•	•	•	•								
5R6	5.6 pF	•	•	•	•	•								
6R8	6.8 pF	•	•	•	•	•								
8R2	8.2 pF	•	•	•	•	•								
100	10 pF	•	•	•	•	•								
120	12 pF	•	•	•	•	•								
150	15 pF	•	•	•	•	•								
180	18 pF	•	•	•	•	•								
220	22 pF	•	•	•	•	•								
270	27 pF	•	•	•	•	•								
330	33 pF	•	•	•	•	•								
390	39 pF	•	•	•	•	•								
470	47 pF	•	•	•	•	•								
560	56 pF	•	•	•	•	•								
680	68 pF	•	•	•	•	•								
820	82 pF	•	•	•	•	•								
101	100 pF	•	•	•	•	•								
121	120 pF	•	•	•	•	•								
151	150 pF	•	•	•	•	•								
181	180 pF	•	•	•	•	•								
221	220 pF	•	•	•	•	•								
271	270 pF	•	•	•	•	•								
331	330 pF	•	•	•	•	•								
391	390 pF	•	•	•	•	•								
471	470 pF	•	•	•	•	•								
561	560 pF	•	•	•	•	•								
681	680 pF	•	•	•	•	•								
821	820 pF	•	•	•	•	•								



<b>DIELECTRIC 05007 MLCCS</b>														
STYLE		05007												
EIA TYPE		1206												
DIELECTRIC		BP					BR				BX			
VOLTAGE (Vdc)		16	25	50	100	200	16	25	50	100	16	25	50	100
CAP. CODE	CAP.													
102	1000 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
122	1200 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
152	1500 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
182	1800 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
222	2200 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
272	2700 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
332	3300 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
392	3900 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
472	4700 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
562	5600 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
682	6800 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
822	8200 pF	*	*	*	*	*	*	*	*	*	*	*	*	*
103	0.010 µF						*	*	*	*	*	*	*	*
123	0.012 µF						*	*	*	*	*	*	*	*
153	0.015 µF						*	*	*	*	*	*	*	*
183	0.018 µF						*	*	*	*	*	*	*	*
223	0.022 µF						*	*	*	*	*	*	*	*
273	0.027 µF						*	*	*	*	*	*	*	*
333	0.033 µF						*	*	*	*	*	*	*	*
393	0.039 µF						*	*	*	*	*	*	*	*
473	0.047 µF						*	*	*	*	*	*	*	*
563	0.056 µF						*	*	*	*	*	*	*	*
683	0.068 µF						*	*	*	*	*	*	*	*
823	0.082 µF						*	*	*	*	*	*	*	*
104	0.10 µF						*	*	*	*	*	*	*	*
124	0.12 µF						*	*	*	*	*	*	*	*
154	0.15 µF						*	*	*	*	*	*	*	*
184	0.18 µF						*	*	*	*	*	*	*	*
224	0.22 µF						*	*	*	*	*	*	*	*
334	0.33 µF						*	*	*	*	*	*	*	*
474	0.47 µF						*	*	*	*	*	*	*	*
684	0.68 µF						*	*	*	*	*	*	*	*
105	1.0 µF						*	*	*	*	*	*	*	*

<b>DSCC PACKAGING QUANTITIES (1) (2)</b>							
		7" REEL QUANTITIES		11 1/4" AND 13" REEL QUANTITIES		BULK QUANTITIES	
BODY SIZE	TAPE SIZE	PLASTIC TAPE PACKAGING CODE "T"	PLASTIC TAPE PACKAGING CODE "J"	PLASTIC TAPE PACKAGING CODE "R"		VIAL PACKAGING CODE "B"	WAFFLE PACKAGING CODE "W"
1206	8 mm	3000	1000	10 000		100	N/a

**Notes:**

- (1) Vishay Vitramon uses embossed plastic carrier tape and punch paper carrier tape
- (2) REFERENCE: EIA Standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"



## 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.