Surface Mount Multilayer Ceramic Chip Capacitors
DSCC Qualified Type 05006

FEATURES

- US Defense Supply Center approved
- Federal stock control number, CAGE CODE 95275
- Case size 0805
- Stable BP, BR and BX dielectrics
- Excellent aging characteristics
- Tin/lead termination code “Z” and “U”
- 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
- Compliant to RoHS directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition

Pb Available
RoHS* COMPLIANT
HALOGEN FREE Available

APPLICATIONS

- Avionic application
- Sonar applications
- Satellite systems
- Missiles applications
- Geographical information systems
- Global positioning systems

ELECTRICAL SPECIFICATIONS

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

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

Capacitance Range:
BP: = 0.5 pF to 3300 pF
BR: = 150 pF to 0.1 µF
BX: = 150 pF to 0.1 µF

Voltage Rating: 10 Vdc to 200 Vdc

Temperature Coefficient of Capacitance (TCC):
BP: = 0 ppm/°C ± 30 ppm/°C from - 55 °C to + 125 °C with zero (0) Vdc applied
BP: = 0 ppm/°C ± 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_{rms} and 1 MHz for values ≤ 1000 pF
0.15 % max. at 1.0 V_{rms} and 1 kHz for values > 1000 pF
BR, **BX:**
≤ 25 V ± 3.5 % max. at 1.0 V_{rms} and 1 kHz
≥ 50 V ± 2.5 % max. at 1.0 V_{rms} and 1 kHz

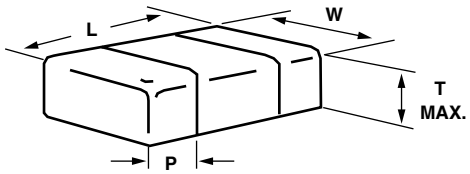
Aging Rate:
BP: = 0 % maximum per decade
BR, **BX:** = 1 % maximum per decade

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 Strength Test:
Performed per Method 103 of EIA-198-2-E.
Applied test voltages:
≤ 200 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
05006-	0.079 ± 0.008 (2.00 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.053 (1.35)	0.010 (0.25)	0.028 (0.71)

ORDERING INFORMATION

05006-	BP	101	B	J	X	-	T
DSCC NUMBER	DIELECTRIC	CAPACITANCE NOMINAL CODE	DC VOLTAGE RATING (1)	CAPACITANCE TOLERANCE	TERMINATION	GROUP C TESTING OPTION	PACKAGING
CASE CODE 0805	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	X = 10 V 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 % **Note** C, D < 10 pF (BP) F, G, H ≥ 10 pF (BP) J, K, M ≥ 10 pF (BP, BR, BX)	M = Silver Palladium Z = Ni barrier with tin/lead plate min. 4 % lead U (2) = Hot solder dipped (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) "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 mm], width/thickness 0.012" (0.30 mm)

DIELECTRIC 05006 MLCCS																	
STYLE		05006															
EIA TYPE		0805															
DIELECTRIC		BP						BR					BX				
VOLTAGE (Vdc)		10	16	25	50	100	200	10	16	25	50	100	10	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	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
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							•	•	•	•	•	•	•	•	•	•

DIELECTRIC 05006 MLCCS

STYLE		05006															
EIA TYPE		0805															
DIELECTRIC		BP						BR					BX				
VOLTAGE (Vdc)		10	16	25	50	100	200	10	16	25	50	100	10	16	25	50	100
CAP. CODE	CAP.																
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																

DSCC PACKAGING QUANTITIES (1)(2)

		7" REEL QUANTITIES		11 1/4" AND 13" REEL QUANTITIES	BULK QUANTITIES	
BODY SIZE	TAPE SIZE	PLASTIC TAPE PACKAGING CODE "C"/"T"	PLASTIC TAPE PACKAGING CODE "J"	PLASTIC TAPE PACKAGING CODE "P"/"R"	VIAL PACKAGING CODE "B"	WAFFLE PACKAGING CODE "W"
0805	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"

(3) Paper tape is not available for component thickness > 0.035" (0.89 mm)

(4) DC voltage rating should not be exceeded in application

Disclaimer

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

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