



## Surface-Mount Multilayer Ceramic Chip Capacitors DC Blocking Capacitors



### FEATURES

- Resonance free performance across working frequency range
- DC blocking, < 0.5 dB insertion loss across frequency band
- Custom frequency ranges available
- Surface-mount standard EIA body sizes
- Low loss reliable noble metal electrode system
- S-parameters available
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



Available  
**RoHS\***  
Available

**HALOGEN  
FREE**

**GREEN  
(5-2008)**  
Available

### Note

\* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

### LINKS TO ADDITIONAL RESOURCES



### APPLICATIONS

- DC blocking
- Broadband coupling
- High speed communication
- High frequency data links
- Bluetooth communication
- Fiber optic lines
- Instruments and RF test equipment
- RF / 5G base stations
- VCO signal decoupling
- Microwave modules

### ELECTRICAL SPECIFICATIONS

#### Note

- Electrical characteristics at +25 °C unless otherwise specified

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

**Voltage Range:** 25 V<sub>DC</sub> to 500 V<sub>DC</sub>

**Dissipation Factor (DF):**

3.5 % maximum at 1.0 V<sub>RMS</sub> and 1 kHz

**Insulation Resistance (IR):**

at +25 °C 100 000 MΩ min. or 1000 ΩF, whichever is less

at +125 °C 10 000 MΩ min. or 100 ΩF, whichever is less

**Dielectric Strength Test:**

performed per method 103 of EIA-198-2-E.

Applied test voltages:

≤ 250 V<sub>DC</sub>-rated: 250 % of rated voltage

500 V<sub>DC</sub>-rated: minimum 150 % of rated voltage



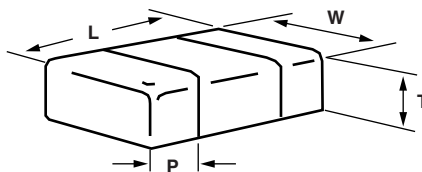
QUICK REFERENCE DATA		
FREQUENCY BAND	CASE SIZE	MAXIMUM VOLTAGE (V)
HF	0402	50
	0603	100
	0805	100
	1210	500
VHF	0402	50
	0603	100
	0805	100
	1210	500
UHF	0402	50
	0603	100
	0805	100
	1210	500
L	0402	50
	0603	100
	0805	100
	1210	500
S	0402	50
	0603	100
	0805	100
C	0402	50
	0603	100
	0805	100
X	0402	50
	0603	100
Ku	0402	50
	0603	100

ORDERING INFORMATION								
BC	06	208	408	D	X	B	A	J
BLOCKING CAPACITOR	CASE CODE	BLOCKING RANGE		ATTENUATION ACROSS FREQUENCY BAND	TERMINATION FINISH	VOLTAGE RATING <sup>(1)</sup>	MARKING	PACKAGING
	04 = 0402 06 = 0603 08 = 0805 12 = 1210	Minimum and maximum frequency: • 208 = $20 \times 10^8 = 2 \text{ GHz}$ • 408 = $40 \times 10^8 = 4 \text{ GHz}$		D = < 0.5 dB	X = Ni barrier 100 % tin	X = 25 V A = 50 V B = 100 V C = 200 V E = 500 V	A = unmarked	C = 7" reel / paper tape T = 7" reel / plastic tape J = 7" reel (low quantity) P = large reel / paper tape R = large reel / plastic tape

**Notes**

<sup>(1)</sup> DC voltage rating should not be exceeded in application. Other application factors may affect the MLCC performance

- Consult for questions: [mlcc@vishay.com](mailto:mlcc@vishay.com)

**DIMENSIONS** in inches (millimeters)


STYLE	CASE CODE	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATIONS PAD (P)	
					MINIMUM	MAXIMUM
BC04	0402	0.040 + 0.004 / - 0.002 (1.00 + 0.10 / - 0.05)	0.020 + 0.004 / - 0.002 (0.50 + 0.10 / - 0.05)	0.024 (0.60)	0.004 (0.10)	0.016 (0.41)
BC06	0603	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.038 (0.97)	0.012 (0.30)	0.024 (0.60)
BC08	0805	0.079 ± 0.008 (2.00 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.057 (1.45)	0.010 (0.25)	0.028 (0.71)
BC12	1210	0.126 ± 0.010 (3.20 ± 0.25)	0.098 ± 0.010 (2.50 ± 0.25)	0.076 (1.94)	0.010 (0.25)	0.028 (0.71)

**SELECTION CHART - STANDARD RANGES**

FREQUENCY BAND	FREQUENCY (MIN.)	FREQUENCY (MAX.)	CASE CODE	RATED VOLTAGE (V <sub>DC</sub> )	PART NUMBER <sup>(1)</sup>
HF	3 MHz	30 MHz	0402	25	BC04305306DXXA_
HF	3 MHz	30 MHz	0402	50	BC04305306DXAA_
HF	3 MHz	30 MHz	0603	25	BC06305306DXXA_
HF	3 MHz	30 MHz	0603	50	BC06305306DXAA_
HF	3 MHz	30 MHz	0603	100	BC06305306DXBA_
HF	3 MHz	30 MHz	0805	50	BC08305306DXAA_
HF	3 MHz	30 MHz	0805	100	BC08305306DXBA_
HF	3 MHz	30 MHz	1210	500	BC12305306DXEA_
VHF	30 MHz	300 MHz	0402	25	BC04306307DXXA_
VHF	30 MHz	300 MHz	0402	50	BC04306307DXAA_
VHF	30 MHz	300 MHz	0603	25	BC06306307DXXA_
VHF	30 MHz	300 MHz	0603	50	BC06306307DXAA_
VHF	30 MHz	300 MHz	0603	100	BC06306307DXBA_
VHF	30 MHz	300 MHz	0805	50	BC08306307DXAA_
VHF	30 MHz	300 MHz	0805	100	BC08306307DXBA_
VHF	30 MHz	300 MHz	1210	500	BC12306307DXEA_
UHF	300 MHz	3 GHz	0402	25	BC04307308DXXA_
UHF	300 MHz	3 GHz	0402	50	BC04307308DXAA_
UHF	300 MHz	3 GHz	0603	25	BC06307308DXXA_
UHF	300 MHz	3 GHz	0603	50	BC06307308DXAA_
UHF	300 MHz	3 GHz	0603	100	BC06307308DXBA_
UHF	300 MHz	3 GHz	0805	50	BC08307308DXAA_
UHF	300 MHz	3 GHz	0805	100	BC08307308DXBA_
UHF	300 MHz	3 GHz	1210	500	BC12307308DXEA_
L	1 GHz	2 GHz	0402	25	BC04108208DXXA_
L	1 GHz	2 GHz	0402	50	BC04108208DXAA_
L	1 GHz	2 GHz	0603	25	BC06108208DXXA_
L	1 GHz	2 GHz	0603	50	BC06108208DXAA_
L	1 GHz	2 GHz	0603	100	BC06108208DXBA_
L	1 GHz	2 GHz	0805	50	BC08108208DXAA_
L	1 GHz	2 GHz	0805	100	BC08108208DXBA_
L	1 GHz	2 GHz	1210	500	BC12108208DXEA_

**Notes**

RoHS-compliant

Not RoHS-compliant

<sup>(1)</sup> Last digit of part number defines the package



SELECTION CHART - STANDARD RANGES					
FREQUENCY BAND	FREQUENCY (MIN.)	FREQUENCY (MAX.)	CASE CODE	RATED VOLTAGE (V <sub>DC</sub> )	PART NUMBER <sup>(1)</sup>
S	2 GHz	4 GHz	0402	25	BC04208408DXXA_
S	2 GHz	4 GHz	0402	50	BC04208408DXAA_
S	2 GHz	4 GHz	0603	25	BC06208408DXXA_
S	2 GHz	4 GHz	0603	50	BC06208408DXAA_
S	2 GHz	4 GHz	0603	100	BC06208408DXBA_
S	2 GHz	4 GHz	0805	50	BC08208408DXAA_
S	2 GHz	4 GHz	0805	100	BC08208408DXBA_
C	4 GHz	8 GHz	0402	25	BC04408808DXXA_
C	4 GHz	8 GHz	0402	50	BC04408808DXAA_
C	4 GHz	8 GHz	0603	25	BC06408808DXXA_
C	4 GHz	8 GHz	0603	50	BC06408808DXAA_
C	4 GHz	8 GHz	0603	100	BC06408808DXBA_
C	4 GHz	8 GHz	0805	50	BC08408808DXAA_
C	4 GHz	8 GHz	0805	100	BC08408808DXBA_
X	8 GHz	12 GHz	0402	25	BC04808129DXXA_
X	8 GHz	12 GHz	0402	50	BC04808129DXAA_
X	8 GHz	12 GHz	0603	25	BC06808129DXXA_
X	8 GHz	12 GHz	0603	50	BC06808129DXAA_
X	8 GHz	12 GHz	0603	100	BC06808129DXBA_
Ku	12 GHz	18 GHz	0402	25	BC04129189DXXA_
Ku	12 GHz	18 GHz	0402	50	BC04129189DXAA_
Ku	12 GHz	18 GHz	0603	25	BC06129189DXXA_
Ku	12 GHz	18 GHz	0603	50	BC06129189DXAA_
Ku	12 GHz	18 GHz	0603	100	BC06129189DXBA_

## Notes

  RoHS-compliant

  Not RoHS-compliant

<sup>(1)</sup> Last digit of part number defines the package

SELECTION CHART - CUSTOM RANGES <sup>(1)</sup>					
FREQUENCY BAND	FREQUENCY (MIN.)	FREQUENCY (MAX.)	CASE CODE	RATED VOLTAGE (V <sub>DC</sub> )	PART NUMBER <sup>(2)</sup>
Custom	30 MHz	6 GHz	0402	100	BC04306608DXBA_

## Notes

  RoHS-compliant

  Not RoHS-compliant

<sup>(1)</sup> For other ranges, contact: [mlcc@vishay.com](mailto:mlcc@vishay.com)

<sup>(2)</sup> Last digit of part number defines the package

STANDARD PACKAGING QUANTITIES <sup>(1)(2)(3)</sup>							
STYLE	CASE CODE	TAPE SIZE	7" REEL QUANTITIES			11 1/4" AND 13" REEL QUANTITIES	
			PAPER TAPE PACKAGING CODE "C"	PLASTIC TAPE PACKAGING CODE "T"	LOW QUANTITY "J"	PAPER TAPE PACKAGING CODE "P"	PLASTIC TAPE PACKAGING CODE "R"
BC04	0402	8 mm	5000	n/a	1000	10 000	n/a
BC06	0603	8 mm	4000	4000	1000	10 000	10 000
BC08	0805	8 mm	3000	3000	1000	10 000	10 000
BC12	1210	8 mm	n/a	2500	1000	n/a	9000 / 10 000

## Notes

<sup>(1)</sup> Vishay Vitramon uses embossed plastic carrier tape

<sup>(2)</sup> REFERENCE: EIA standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"

<sup>(3)</sup> n/a = not available



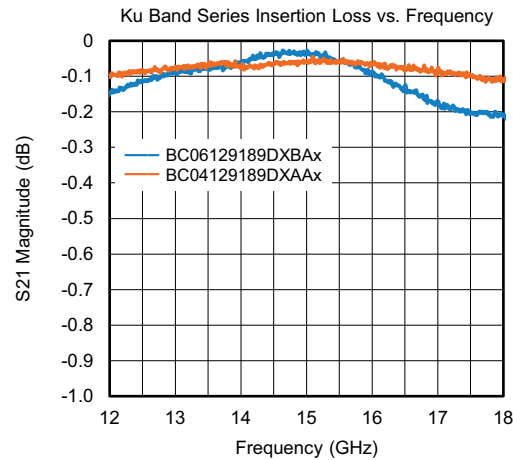
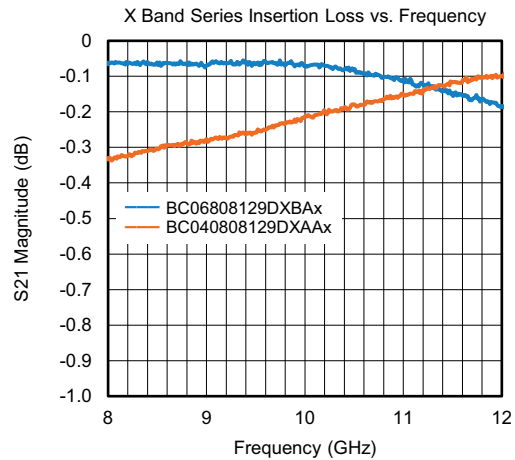
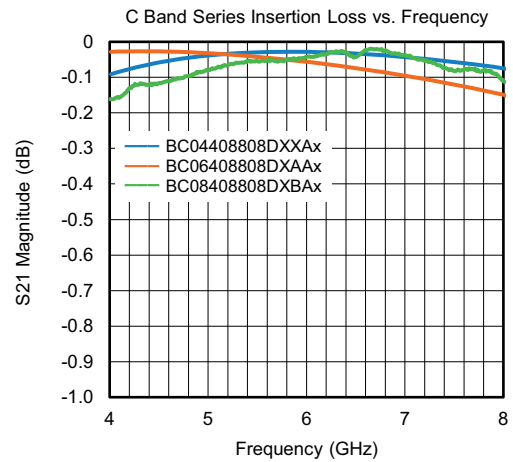
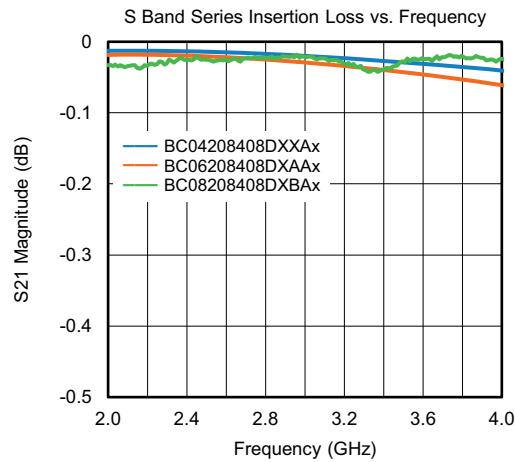
## STORAGE AND HANDLING CONDITIONS

- (1) Store the components at 5 °C to +40 °C ambient temperature and ≤ 70 % relative 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.

## TYPICAL ATTENUATION CURVES



### Note

- Contact [mlccrf@vishay.com](mailto:mlccrf@vishay.com) for s-parameter data outside a part's specified operating frequency range



## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

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 in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

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