

Surface-Mount Multilayer Ceramic Chip Capacitors DC Blocking Capacitors



LINKS TO ADDITIONAL RESOURCES



ELECTRICAL SPECIFICATIONS

Note

- Electrical characteristics at +25 °C unless otherwise specified

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

Voltage Range: 25 V_{DC} to 500 V_{DC}

Dissipation Factor (DF):

3.5 % maximum at 1.0 V_{RMS} 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_{DC}-rated: 250 % of rated voltage

500 V_{DC}-rated: minimum 150 % of rated voltage

FEATURES

- Resonance free performance across working frequency range
- DC blocking, < 0.5 dB insertion loss across frequency band for standard ranges
- Custom frequency ranges available
- Surface-mount standard EIA body sizes
- Select values AEC-Q200 qualified with PPAP available AU process code
- Select values MIL-PRF-55681 qualified with 5G process code
- 5G includes voltage conditioning and generic CoC (no data)
- Low loss reliable noble metal electrode system
- S-parameters available
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

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

APPLICATIONS

- Select automotive and Hi reliability parts available
- 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





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
	1210	500
C	0402	50
	0603	100
	0805	100
	1210	500
X	0402	50
	0603	100
Ku	0402	50
	0603	100

ORDERING INFORMATION

BC	06	208	408	D	X	B	A	J	5G
BLOCKING CAPACITOR	CASE CODE	BLOCKING RANGE		ATTENUATION ACROSS FREQUENCY BAND	TERMINATION FINISH	VOLTAGE RATING ⁽¹⁾	MARKING	PACKAGING	PROCESS CODE ⁽²⁾
	04 = 0402 06 = 0603 08 = 0805 12 = 1210	Minimum and maximum frequency: • 208 = 20 x 10 ⁸ = 2 GHz • 408 = 40 x 10 ⁸ = 4 GHz		D = < 0.5 dB H = < 3.0 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	AU = automotive 5G = HIREL ⁽³⁾

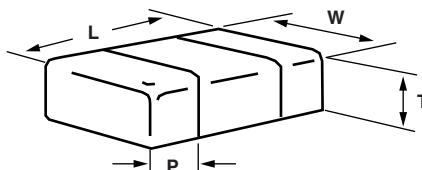
Notes

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

⁽²⁾ Where available add an "AU" for automotive, "5G" for HIREL - leave blank for standard

⁽³⁾ 5G voltage conditioning only, generic CoC (no data)

- Consult for questions: mlcc@vishay.com

**DIMENSIONS** in inches (millimeters)

STYLE	CASE CODE	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATIONS PAD (P)	
					MINIMUM	MAXIMUM
BC04	0402	$0.040 \pm 0.004 / - 0.002$ (1.00 $\pm$ 0.10 / - 0.05)	$0.020 \pm 0.004 / - 0.002$ (0.50 $\pm$ 0.10 / - 0.05)	0.024 (0.60)	0.004 (0.10)	0.016 (0.41)
BC06	0603	0.063 ± 0.006 (1.60 $\pm$ 0.15)	0.031 ± 0.006 (0.80 $\pm$ 0.15)	0.038 (0.97)	0.012 (0.30)	0.024 (0.60)
BC08	0805	0.079 ± 0.008 (2.00 $\pm$ 0.20)	0.049 ± 0.008 (1.25 $\pm$ 0.20)	0.057 (1.45)	0.010 (0.25)	0.028 (0.71)
BC12	1210	0.126 ± 0.010 (3.20 $\pm$ 0.25)	0.098 ± 0.010 (2.50 $\pm$ 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 _{DC})	STANDARD PART NUMBER ⁽¹⁾	AUTOMOTIVE PART NUMBER ⁽¹⁾	HIREL PART NUMBER ⁽¹⁾
HF	3 MHz	30 MHz	0402	25	BC04305306DXXA_	BC04305306DXXA_AU	BC04305306DXXA_5G
HF	3 MHz	30 MHz	0402	50	BC04305306DXAA_	BC04305306DXAA_AU	BC04305306DXAA_5G
HF	3 MHz	30 MHz	0603	25	BC06305306DXXA_	n/a	n/a
HF	3 MHz	30 MHz	0603	50	BC06305306DXAA_	n/a	n/a
HF	3 MHz	30 MHz	0603	100	BC06305306DXBA_	n/a	n/a
HF	3 MHz	30 MHz	0805	50	BC08305306DXAA_	BC08305306DXAA_AU	n/a
HF	3 MHz	30 MHz	0805	100	BC08305306DXBA_	BC08305306DXBA_AU	n/a
HF	3 MHz	30 MHz	1210 ⁽²⁾	500	BC12305306DXEA_	n/a	n/a
VHF	30 MHz	300 MHz	0402	25	BC04306307DXXA_	BC04306307DXXA_AU	BC04306307DXXA_5G
VHF	30 MHz	300 MHz	0402	50	BC04306307DXAA_	BC04306307DXAA_AU	BC04306307DXAA_5G
VHF	30 MHz	300 MHz	0603	25	BC06306307DXXA_	n/a	n/a
VHF	30 MHz	300 MHz	0603	50	BC06306307DXAA_	n/a	n/a
VHF	30 MHz	300 MHz	0603	100	BC06306307DXBA_	n/a	n/a
VHF	30 MHz	300 MHz	0805	50	BC08306307DXAA_	BC08306307DXAA_AU	n/a
VHF	30 MHz	300 MHz	0805	100	BC08306307DXBA_	BC08306307DXBA_AU	n/a
VHF	30 MHz	300 MHz	1210 ⁽²⁾	500	BC12306307DXEA_	n/a	n/a
UHF	300 MHz	3 GHz	0402	25	BC04307308DXXA_	BC04307308DXXA_AU	BC04307308DXXA_5G
UHF	300 MHz	3 GHz	0402	50	BC04307308DXAA_	BC04307308DXAA_AU	BC04307308DXAA_5G
UHF	300 MHz	3 GHz	0603	25	BC06307308DXXA_	n/a	n/a
UHF	300 MHz	3 GHz	0603	50	BC06307308DXAA_	n/a	n/a
UHF	300 MHz	3 GHz	0603	100	BC06307308DXBA_	n/a	n/a
UHF	300 MHz	3 GHz	0805	50	BC08307308DXAA_	BC08307308DXAA_AU	n/a
UHF	300 MHz	3 GHz	0805	100	BC08307308DXBA_	BC08307308DXBA_AU	n/a
UHF	300 MHz	3 GHz	1210 ⁽²⁾	500	BC12307308DXEA_	n/a	n/a
L	1 GHz	2 GHz	0402	25	BC04108208DXXA_	BC04108208DXXA_AU	BC04108208DXXA_5G
L	1 GHz	2 GHz	0402	50	BC04108208DXAA_	BC04108208DXAA_AU	BC04108208DXAA_5G
L	1 GHz	2 GHz	0603	25	BC06108208DXXA_	BC06108208DXXA_AU	BC06108208DXXA_5G
L	1 GHz	2 GHz	0603	50	BC06108208DXAA_	BC06108208DXAA_AU	BC06108208DXAA_5G
L	1 GHz	2 GHz	0603	100	BC06108208DXBA_	BC06108208DXBA_AU	BC06108208DXBA_5G
L	1 GHz	2 GHz	0805	50	BC08108208DXAA_	BC08108208DXAA_AU	n/a
L	1 GHz	2 GHz	0805	100	BC08108208DXBA_	BC08108208DXBA_AU	n/a
L	1 GHz	2 GHz	1210 ⁽²⁾	500	BC12108208DXEA_	n/a	n/a

Notes

- RoHS-compliant
 Not RoHS-compliant

⁽¹⁾ Blank digit location defines packaging code

⁽²⁾ See soldering recommendations www.vishay.com/doc?45034

**SELECTION CHART - STANDARD RANGES**

FREQUENCY BAND	FREQUENCY (MIN.)	FREQUENCY (MAX.)	CASE CODE	RATED VOLTAGE (V _{DC})	STANDARD PART NUMBER ⁽¹⁾	AUTOMOTIVE PART NUMBER ⁽¹⁾	HIREL PART NUMBER ⁽¹⁾
S	2 GHz	4 GHz	0402	25	BC04208408DXXA	BC04208408DXXA_AU	BC04208408DXXA_5G
S	2 GHz	4 GHz	0402	50	BC04208408DXAA	BC04208408DXAA_AU	BC04208408DXAA_5G
S	2 GHz	4 GHz	0603	25	BC06208408DXXA	BC06208408DXXA_AU	BC06208408DXXA_5G
S	2 GHz	4 GHz	0603	50	BC06208408DXAA	BC06208408DXAA_AU	BC06208408DXAA_5G
S	2 GHz	4 GHz	0603	100	BC06208408DXBA	BC06208408DXBA_AU	BC06208408DXBA_5G
S	2 GHz	4 GHz	0805	50	BC08208408DXAA	BC08208408DXAA_AU	BC08208408DXAA_5G
S	2 GHz	4 GHz	0805	100	BC08208408DXBA	BC08208408DXBA_AU	BC08208408DXBA_5G
C	4 GHz	8 GHz	0402	25	BC04408808DXXA	BC04408808DXXA_AU	BC04408808DXXA_5G
C	4 GHz	8 GHz	0402	50	BC04408808DXAA	BC04408808DXAA_AU	BC04408808DXAA_5G
C	4 GHz	8 GHz	0603	25	BC06408808DXXA	BC06408808DXXA_AU	BC06408808DXXA_5G
C	4 GHz	8 GHz	0603	50	BC06408808DXAA	BC06408808DXAA_AU	BC06408808DXAA_5G
C	4 GHz	8 GHz	0603	100	BC06408808DXBA	BC06408808DXBA_AU	BC06408808DXBA_5G
C	4 GHz	8 GHz	0805	50	BC08408808DXAA	BC08408808DXAA_AU	BC08408808DXAA_5G
C	4 GHz	8 GHz	0805	100	BC08408808DXBA	BC08408808DXBA_AU	BC08408808DXBA_5G
X	8 GHz	12 GHz	0402	25	BC04808129DXXA	BC04808129DXXA_AU	BC04808129DXXA_5G
X	8 GHz	12 GHz	0402	50	BC04808129DXAA	BC04808129DXAA_AU	BC04808129DXAA_5G
X	8 GHz	12 GHz	0603	25	BC06808129DXXA	BC06808129DXXA_AU	BC06808129DXXA_5G
X	8 GHz	12 GHz	0603	50	BC06808129DXAA	BC06808129DXAA_AU	BC06808129DXAA_5G
X	8 GHz	12 GHz	0603	100	BC06808129DXBA	BC06808129DXBA_AU	BC06808129DXBA_5G
Ku	12 GHz	18 GHz	0402	25	BC04129189DXXA	BC04129189DXXA_AU	BC04129189DXXA_5G
Ku	12 GHz	18 GHz	0402	50	BC04129189DXAA	BC04129189DXAA_AU	BC04129189DXAA_5G
Ku	12 GHz	18 GHz	0603	25	BC06129189DXXA	BC06129189DXXA_AU	BC06129189DXXA_5G
Ku	12 GHz	18 GHz	0603	50	BC06129189DXAA	BC06129189DXAA_AU	BC06129189DXAA_5G
Ku	12 GHz	18 GHz	0603	100	BC06129189DXBA	BC06129189DXBA_AU	BC06129189DXBA_5G

Notes

RoHS-compliant

Not RoHS-compliant

(1) Blank digit location defines packaging code

(2) See soldering recommendations www.vishay.com/doc?45034

SELECTION CHART - CUSTOM RANGES ⁽¹⁾

FREQUENCY BAND	FREQUENCY (MIN.)	FREQUENCY (MAX.)	CASE CODE	RATED VOLTAGE (V _{DC})	STANDARD PART NUMBER ⁽¹⁾	AUTOMOTIVE PART NUMBER ⁽¹⁾	HIREL PART NUMBER ⁽¹⁾
Custom	30 MHz	6 GHz	0402	100	BC04306608DXBA	BC04306608DXBA_AU	n/a
Custom	30 MHz	6 GHz	0603	200	BC06306608HXCA	n/a	n/a

Notes

RoHS-compliant

Not RoHS-compliant

(1) For other ranges and more information contact mlcc@vishay.com

(2) Blank digit of part number defines packaging

STANDARD PACKAGING QUANTITIES ⁽¹⁾⁽²⁾⁽³⁾

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

(1) Vishay Vitramon uses embossed plastic carrier tape

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

(3) n/a = not available



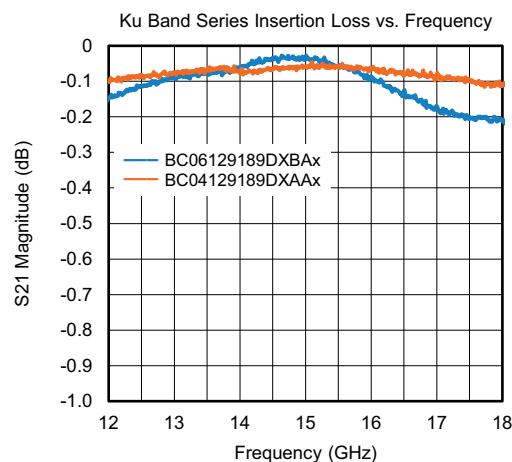
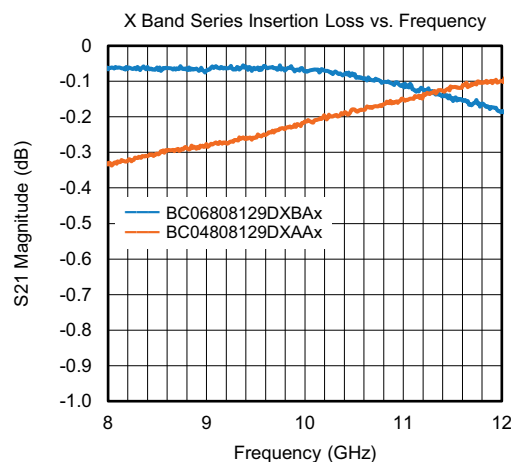
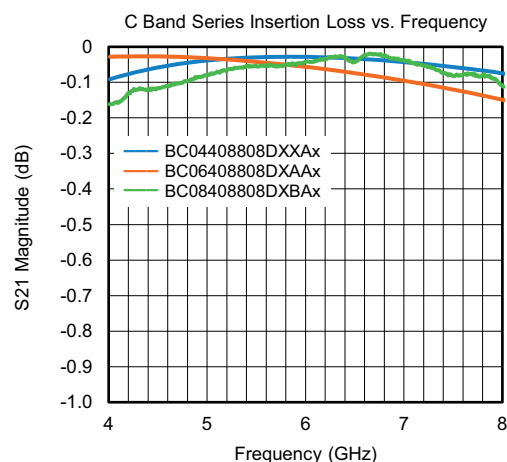
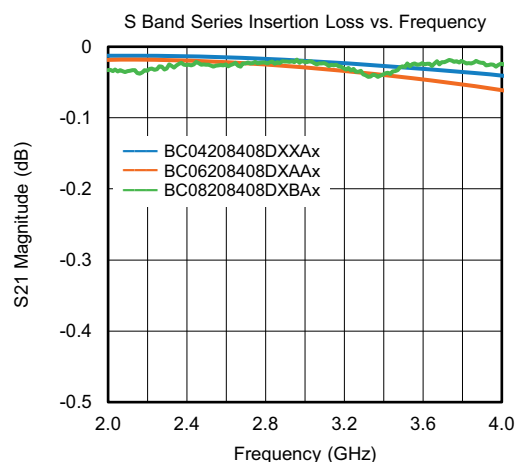
STORAGE AND HANDLING CONDITIONS

- (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



Notes

- Contact mlccrf@vishay.com for s-parameter data outside a part's specified operating frequency range
- Typical attenuation curves for all suffix codes where available



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