

Buried Broadband™ Capacitors How To Order

Quick Select by Application and Resonant Free Bandwidth

Size	Resonant Free Bandwidth**	Typical Insertion Loss (S21)***	2 Cap Values in Parallel (pF)	Temp. Coeff.	Working VDC	FIT Calc. using cont. op. temp. @	Global Part Number
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Fiber Optic

0502	16 kHz to 40 GHz	-0.2 dB at 10 GHz	100,000 & 82	± 15%	16 VDC	85°C	MBB0502X104MG__N8_*
0502	16 kHz to 40 GHz	-0.2 dB at 10 GHz	100,000 & 82	± 15%	20 VDC	65°C	LBB0502X104MH__N8_*
0603	10 kHz to 20 GHz	-0.45 dB at 10 GHz	150,000 & 220	± 15%	16 VDC	85°C	MBB0603X154MG__N2_*
0805	10 kHz to 20 GHz	-0.5 dB at 10 GHz	150,000 & 220	± 15%	16 VDC	85°C	MBB0805X154MG__N2_*
0805	30 kHz to 20 GHz	-0.6 dB at 10 GHz	56,000 & 220	± 15%	75 VDC	85°C	MBB0805X563ML__N2_*

Microwave

0502	160 kHz to 40 GHz	-0.3 dB at 10 GHz	10,000 & 82	± 15%	75 VDC	85°C	MBB0502X103ML__N8_*
0603	450 kHz to 30 GHz	-0.5 dB at 10 GHz	4,000 & 220	± 15%	50 VDC	85°C	MBB0603X402M2__N2_*
0805	450 kHz to 20 GHz	-0.5 dB at 10 GHz	4,000 & 220	± 15%	50 VDC	85°C	MBB0805X402M2__N2_*

Test Instruments

0302	130 kHz to 100 GHz	-1.2 dB at 100 GHz	12,000 & 82	± 15%	16 VDC	85°C	MBB0302X123MG__N8_*
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High Reliability Space

0502	160 kHz to 40 GHz	-0.35 dB at 10 GHz	10,000 & 82	± 15%	12 VDC	100°C	SBB0502X103MF__N8_*
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RoHS Compliant

0502	16 kHz to 40 GHz	-0.2 dB at 10 GHz	100,000 & 82	± 15%	16 VDC	85°C	MBB0502X104MG__R8_*
0502	16 kHz to 40 GHz	-0.2 dB at 10 GHz	100,000 & 82	± 15%	20 VDC	65°C	LBB0502X104MH__R8_*
0502	24 kHz to 40 GHz	-0.2 dB at 10 GHz	68,000 & 82	± 15%	16 VDC	85°C	MBB0502B683MG__R8_*
0502	24 kHz to 40 GHz	-0.2 dB at 10 GHz	68,000 & 82	± 15%	20 VDC	65°C	LBB0502B683MH__R8_*

* Insert codes for Termination, Packaging, and Design-In Code

** -3.0 dB low frequency point

*** Average de-embedded data

Consult factory for higher
voltage ratings

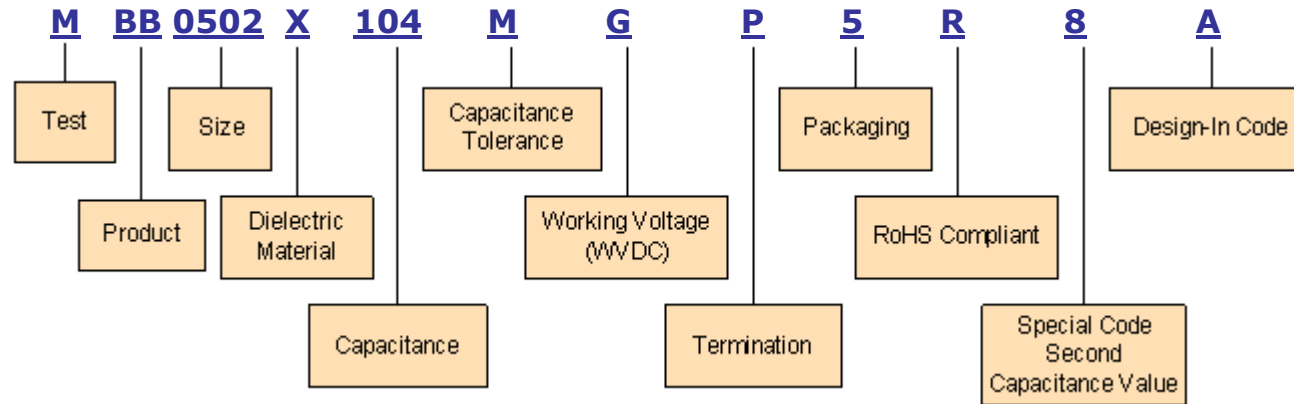
Global Part Number Example



PRESIDIO COMPONENTS, INC.

7169 Construction Court, San Diego, CA 92121 USA • Tel: 858-578-9390 • Fax: 800-538-3880 or 858-578-6225
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Testing Codes

Presidio Components' quality system is ISO 9001 compliant and approved to Mil-I-45208 and Mil-Std-790

Code Description

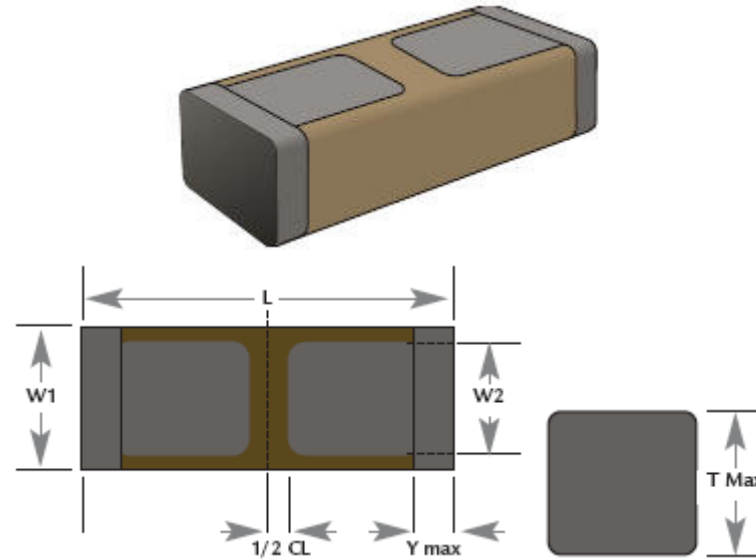
- L Industrial Applications; FIT Calculation Using 65C Continuous Operating Temperature**
Electrical: 100% capacitance, AQL Level II 1% per ANSI/ASQ Z1.4 for insulation resistance (IR) & dielectric withstanding voltage (DWV)
Visual: 100%, as per Mil-Std-883, Method 2032
- M Industrial Applications; FIT Calculation Using 85C Continuous Operating Temperature**
Electrical: 100% capacitance, AQL Level II 1% per ANSI/ASQ Z1.4 for insulation resistance (IR) & dielectric withstanding voltage (DWV)
Visual: 100%, as per Mil-Std-883, Method 2032
- S High Reliability SR Capacitors**
 For more information please see our testing capabilities for high reliability "SR" capacitors



Buried Broadband™ Capacitors

How To Order

Dimensions



Inches						
Size	Ceramic Body Length L	Ceramic Body Width W1	Ceramic Body Height T max.	Band Y max.	Gap Between Surface Pads CL	Surface Pad Width W2
0302	0.031 ± 0.003	0.020 ± 0.002	0.020	0.008	0.00425 ± 0.0015	0.010 ± 0.002
0502	0.050 ± 0.006	0.022 ± 0.004	0.038	0.010	0.005 ± 0.003	0.020 ± 0.002
0603	0.065 ± 0.006	0.032 ± 0.006	0.038	0.015	0.006 ± 0.004	0.023 ± 0.003
0805	0.080 ± 0.010	0.050 ± 0.010	0.038	0.020	0.006 ± 0.004	0.040 ± 0.003
0805*	0.080 ± 0.010	0.050 ± 0.010	0.038	0.020	0.004 ± 0.004	0.032 ± 0.005



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Millimeters (reference only)						
Size	Ceramic Body Length L	Ceramic Body Width W1	Ceramic Body Height T max.	Band Y max.	Gap Between Surface Pads CL	Surface Pad Width W2
0302	0.787 ± 0.076	0.508 ± 0.051	0.508	0.203	0.108 ± 0.038	0.254 ± 0.051
0502	1.270 ± 0.152	0.559 ± 0.102	0.965	0.254	0.127 ± 0.076	0.508 ± 0.051
0603	1.651 ± 0.152	0.813 ± 0.152	0.965	0.381	0.152 ± 0.102	0.584 ± 0.076
0805	2.032 ± 0.254	1.270 ± 0.254	0.965	0.508	0.152 ± 0.102	1.016 ± 0.076
0805*	2.032 ± 0.254	1.270 ± 0.254	0.965	0.508	0.102 ± 0.102	0.813 ± 0.127

* This dimension applies only to MBB0805X402M2__N2__

Dielectric Material Code and Electrical Specifications

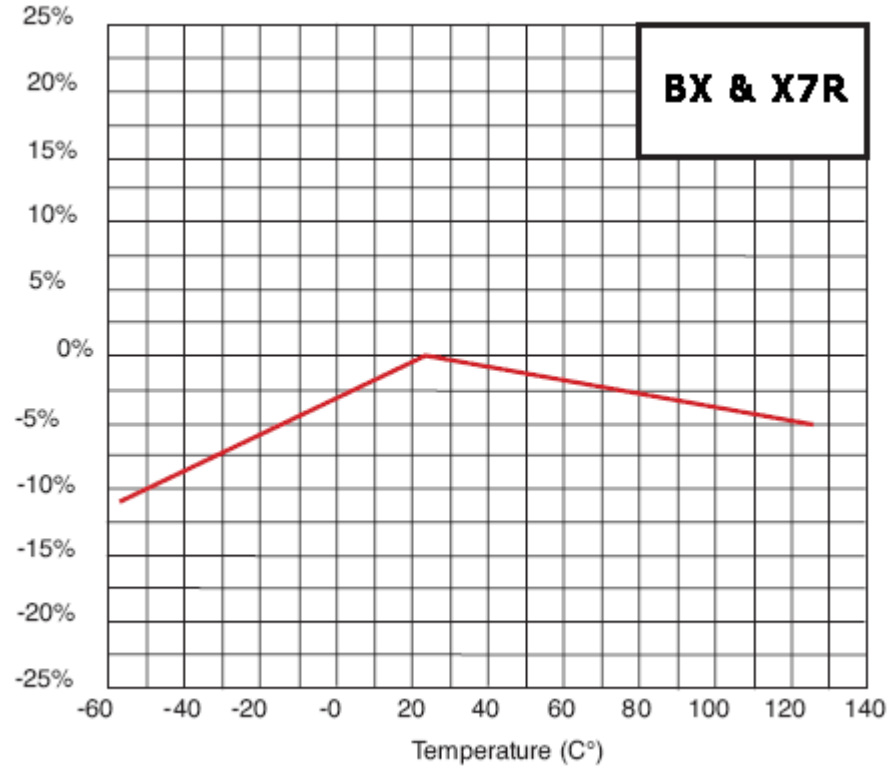
Material:	X7R	BX
Code:	X	B
Dissipation Factor:	4.0% max.	4.0% max.
Insulation Resistance at 25°C:	$> 10^5 \text{ M}\Omega$	$> 10^5 \text{ M}\Omega$
Dielectric Withstanding Voltage:	2.5 x WVDC	2.5 x WVDC
Working Voltage (WVDC):	See working voltage table below	See working voltage table below
Temperature Coefficient over Operating Temperature:	$\pm 15\%$	$\pm 15\%$
Operating Temperature:	-55°C to +125°C	-55°C to +125°C
Aging Rate:	2.5% max. per decade/hour	2.5% max. per decade/hour



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Capacitance Codes for Multilayer Capacitor

First two digits = Significant figures of capacitance in picofarads

Third digit = Additional number of zeros

Example: 100 = 10 pF
102 = 1,000 pF
104 = 100,000 pF



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Product Code

BB Buried Broadband Capacitor

Special Codes for Second Capacitor Value

Code	Nominal Capacitance
8	82 pF
2	220 pF

Working Voltage Codes

Code	WVDC
F	12
G	16
H	20
1	25
2	50
L	75

Standard Capacitance Tolerance Code

Code	Tolerance
M	± 20%

Packaging Codes

Code	Description
1	Tape and Reel
5	Waffle Pack

RoHS Compliance Code

Code	Compliant
N	No
R	Yes



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Termination Codes

Code	RoHS Compliant	Typical Application	Termination Build Up	Recommended Reflow Temperature
T	Yes	Solder Reflow	Palladium-Silver Nickel Barrier Plated 100% Tin	220°C to 260°C typical*
N	No	Solder Reflow by IR, vapor phase, wave, convection tunnel oven	Palladium-Silver Nickel Barrier Plated 90/10 Tin Lead	220°C to 260°C typical*
P	Yes	Conductive Epoxy Non-Magnetic	Palladium-Silver	Cure Epoxy as per manufacturer's spec.
G	Yes	Conductive Epoxy, Wire Bondable.	Palladium-Silver Nickel Barrier 100 μ" thick Gold typical	Cure Epoxy as per manufacturer's spec.

*** Typical temperature guidelines for solder attachment:**

Reflow: Preheating -- 2°C/seconds up to 100 seconds
Soldering -- 220°C to 260°C for 20 to 60 seconds

Gradual Cooling: Exit less than 100°C



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