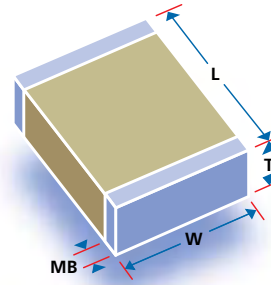
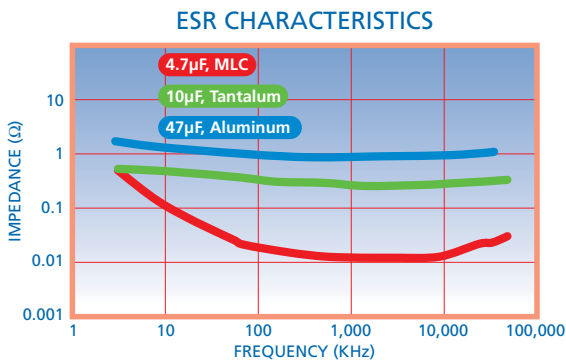
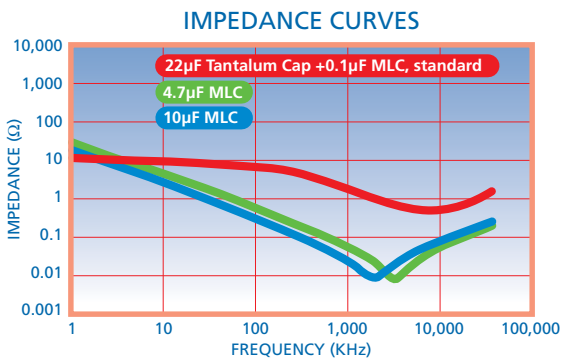


High Capacitance Chip X7R & X5R

A range of High Capacitance value BME MLC chip capacitors, in stable Class II dielectrics X7R & X5R, with a spread of capacitance values offered up to 100 μ F. Comparable circuit designs can be achieved at typically a third to a fifth of the capacitance values because of the low ESR characteristics these parts exhibit. As a consequence they are also ideal to replace Tantalum and Low ESR Electrolytic Capacitors without polarity concerns. They find application as power supply bypass capacitors, smoothing capacitors, input/output filters in DC-DC Converters and in digital circuits and LCD modules. Parts are RoHS Compliant and suitable for reflow soldering process.



Comparison with other dielectric capacitors



Dimensions and Tolerances - inches/mm

Size		L	W	MB
0402	inches	0.040 ± 0.004	0.020 ± 0.004	0.010 ± 0.004
	mm	1.02 ± 0.10	0.51 ± 0.10	0.25 ± 0.10
0603	inches	0.063 ± 0.006	0.032 ± 0.006	0.014 ± 0.010
	mm	1.60 ± 0.15	0.81 ± 0.15	0.36 ± 0.25
0805	inches	0.080 ± 0.008	0.050 ± 0.008	0.020 ± 0.010
	mm	2.00 ± 0.20	1.30 ± 0.20	0.51 ± 0.25
1206	inches	0.126 ± 0.008	0.063 ± 0.008	0.020 ± 0.010
	mm	3.20 ± 0.20	1.60 ± 0.20	0.51 ± 0.30
1210	inches	0.126 ± 0.012	0.100 ± 0.012	0.024 ± 0.012
	mm	3.20 ± 0.31	2.50 ± 0.31	0.61 ± 0.31
1812	inches	0.180 ± 0.016	0.125 ± 0.012	0.035 ± 0.020
	mm	4.60 ± 0.41	3.20 ± 0.31	0.90 ± 0.51

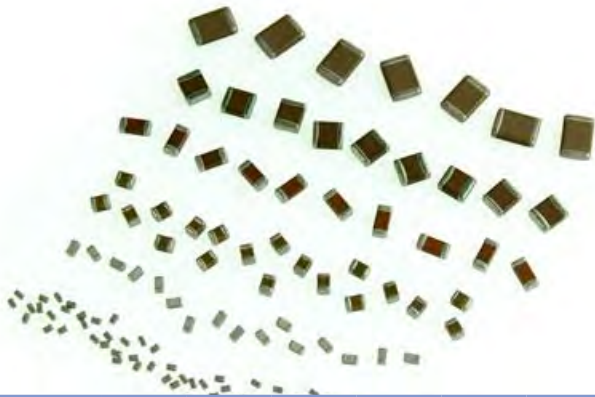
Dielectric Characteristics	X7R (BB) Stable	X5R (BW) Stable
Operating temperature range:	-55°C to 125°C	-55°C to 85°C
Temperature coefficient:	±15% ΔC Max.	±15% ΔC Max.
Dissipation factor:	3.5% max except: 0402 ≥ 0.1 μ F = 5%, 0603 ≥ 0.22 μ F = 10%, 0805 ≥ 1.0 μ F = 5%, 0805 ≥ 2.2 μ F = 10%, 1206 ≥ 2.2 μ F = 10%, 1210 ≥ 4.7 μ F = 5%, 1210 ≥ 22 μ F = 10%	5% max except: 0402 ≥ 1.0 μ F = 10%, 0603 ≥ 1.0 μ F = 10%, 0805 ≥ 4.7 μ F = 10%, 1206 ≥ 4.7 μ F = 10%, 1210 ≥ 10 μ F = 10%
Insulation resistance @25°C:	>10G Ω or >100 Ω F whichever is less	>10G Ω or >100 Ω F whichever is less
Dielectric withstanding voltage:	250%	250%
Aging Rate:	X7R 3.5% typical	X5R 5% typical
Test parameters @ 25°C:	1KHz, 1.0 ±0.2 VRMS	1KHz, 1.0 ±0.2 VRMS 120Hz, 0.5 ±0.1 VRMS for 22 μ F, 47 μ F & 100 μ F

How to Order - High Capacitance Chip Capacitors

1206	W	476	K	6R3	N	X080	T
SIZE See Chart	DIELECTRIC BB* = X7R BW* = X5R	CAPACITANCE Value in Picofarads. Two significant figures, followed by number of zeros: 476 = 47 μ F (47,000,000pF)	TOLERANCE K = ± 10% M = ± 20%	VOLTAGE-VDCW Two significant figures, followed by number of zeros. R denotes decimal point: 6R3 = 6.3V 501 = 500V	TERMINATION N = Nickel Barrier (100%tin) Y = Nickel Barrier (90%tin 10% lead) NG = Nickel Barrier Gold Flash	THICKNESS OPTION Blank = Standard thickness X = special thickness, specified in inches: X085 = 0.085"	PACKING No suffix = Bulk T = Tape & Reel
	*Formally B & W codes						

Note: BME parts available with added high reliability test. Consult factory.

High Capacitance Chip X7R & X5R



- For dielectric characteristics see page 44.
- Nickel Barrier terminations with tin, tin/lead or gold flash
- Capacitance tolerances available: $\pm 10\%$, $\pm 20\%$
- Available with high reliability screening. Contact sales office for details

Note: Capacitance values are shown below as 3 digit code: 2 significant figures followed by the no. of zeros
e.g. 183 = 18,000pF.

Capacitance values

Size	0402		0603		0805		1206		1210				1812	
Tmax	inches:													
	mm:	0.024	0.035	0.054	0.072*	0.085*	0.110*	0.110*	0.085*	0.110*	0.110*	0.110*	0.110*	0.110*
		0.61	0.89	1.37	1.83	2.16	2.79	2.79	2.16	2.79	2.79	2.79	2.79	2.79
Dielectric	X7R	X5R	X7R	X5R	X7R	X5R	X7R	X5R	X7R	X5R	X7R	X5R	X7R	X5R
4V				226†				107†						-
6.3V	224	105 225† 475†		475 106†		226†		476†		476†	476†	107†		-
10V		474	225	475 106†	106†	106	226†	226†		226†		476†		-
16V	153 223 333 473 104	224 474 105	105	225 475	474 105 225 475	475 106	106	106 226†	475† 106†			226†		-
25V	682 103 473	104 224	474 105	224 474 105 225	105 225 475	225 475	225 475 106	475 106	335† 475†	475† 106†	226†			-
35V										225† 475†				-
50V	103	104	224 474	104 474 105	224 474 105	224 474 105	474 105 225 475	475	105		475†	475† 106†		-
100V			104		224		105		105 225				105 225	-

* Denotes non standard chip thickness. Order code needs to have an 'X' inserted together with the dimension in inches -e.g. X072 where dimension is 0.072".

† Denotes only available in $\pm 20\%$ capacitance tolerance

Mouser Electronics

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[1206B471K101NT](#) [1812B474K101NT](#) [1812B105K500NXT](#) [1210B224K101NT](#) [0805B103K101N](#) [1206B224K500NT](#)
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[1210B106M250NX085T](#) [0805B473K500NT](#) [0402W475K6R3NT](#) [0805B103K501NT](#) [1812B105K500NX100T](#)