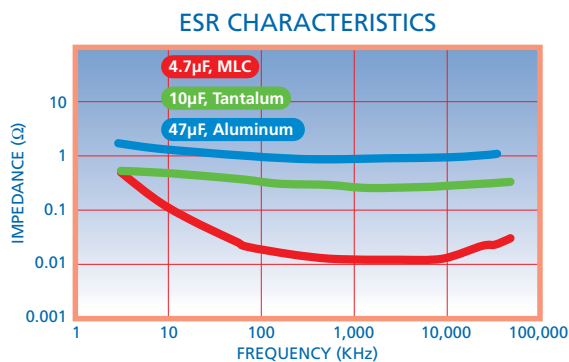
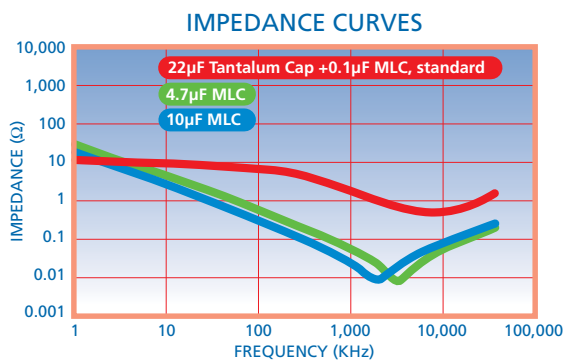


High Capacitance Chip X7R & X5R

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

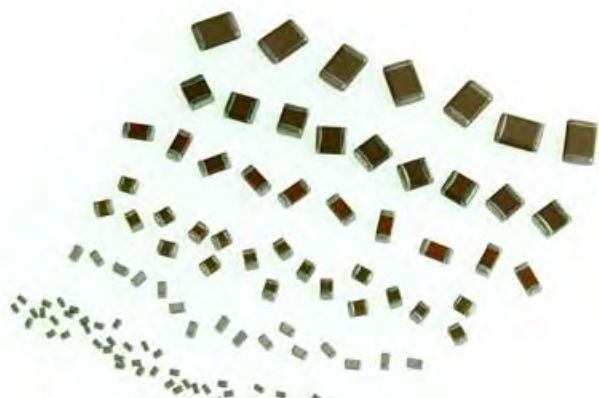
Dielectric Characteristics	X7R (BB) Stable	X5R (BW) Stable
Operating temperature range:	-55°C to 125°C	-55°C to 85°C
Temperature coefficient:	$\pm$ 15% Δ C Max.	$\pm$ 15% Δ C Max.
Dissipation factor:	3.5% max except: 0402 $\geq$ 0.1 μ F = 5%, 0603 $\geq$ 0.22 μ F = 10%, 0805 $\geq$ 1.0 μ F = 5%, 0805 $\geq$ 2.2 μ F = 10%, 1206 $\geq$ 2.2 μ F = 10%, 1210 $\geq$ 4.7 μ F = 5%, 1210 $\geq$ 22 μ F = 10%	5% max except: 0402 $\geq$ 1.0 μ F = 10%, 0603 $\geq$ 1.0 μ F = 10%, 0805 $\geq$ 4.7 μ F = 10%, 1206 $\geq$ 4.7 μ F = 10%, 1210 $\geq$ 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 $\pm$ 0.2 VRMS	1KHz, 1.0 $\pm$ 0.2 VRMS 120Hz, 0.5 $\pm$ 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 = $\pm$ 10% M = $\pm$ 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 0.61		0.035 0.89		0.054 1.37		0.072* 1.83		0.085* 2.16		0.110* 2.79		0.110* 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