

# KEMET

## BME Technology Advancements Allows KEMET to Enter the High Cap Ceramic Arena

KEMET Electronics Corp's family of outstanding ceramic chip capacitors for Surface Mount now includes extended capacitance range in the 1206 and 1210 size X5R dielectric. KEMET capacitors in this range are rated at 10 and 16 volts DC with both ratings available in our standard tolerances of M and K. The packaging is plastic tape on 7 and 13" reels.

KEMET has delayed entering into the high cap ceramic arena until the new BME (Base Metal Electrode) technology platform was fully launched into manufacturing. This new BME technology replaces the much more costly palladium-silver electrode with silver termination system with a nickel electrode with copper termination materials system. The BME platform was in development for over three years. It involves not only the changes to the electrode and termination materials, but also a complete change over in dielectric materials and firing processing, involving all new suppliers and new equipment. Once the new technology was developed, KEMET spent the last two years scaling up the manufacturing process. This new technology will now allow KEMET to be more cost competitive with other suppliers, and to offer the high capacitance X5R products the market requires. In addition to the X5R dielectric, KEMET has developed Y5V and X7R dielectrics using this new BME technology, and has delivered products using these dielectrics to market.

Metric Size Code	EIA Size Code	L – Length mm (in)	W – Width mm (in)	Max	
				T – Thickness mm (in)	B - Band Width mm (in)
3216	1206	3.2 (.126) ± 0.2 (.008)	1.6 (.063) ± 0.2 (.008)	1.8 (.071)	0.5 (.02) ± 0.2 (.008)
3225	1210	3.2 (.126) ± 0.2 (.008)	2.5 (.098) ± 0.2 (.008)	2.3 (.091)	0.5 (.02) ± 0.2 (.008)

Capacitance Value (uF)	KEMET Part Number	Capacitance Tolerance	C1206		C1210
			10V	16V	10V
1.5	C1206C155(1)(2)PAC	K, M	155	155	
2.2	C1206C225(1)(2)PAC	K, M	225	225	
3.3	C1206C335(1)(2)PAC	K, M	335	335	
4.7	C1206C475(1)(2)PAC	K, M	475	475	
4.7	C1206C475(1)8PAC	K, M			475
6.8	C1206C685(1)8PAC	K, M			685
10.0	C1206C106(1)8PAC	K, M			106

- (1) Tolerance Code = K or M  
 (2) Voltage Code = 8 for 10V, 4 for 16V

Typical applications for the X5R are very similar to those for the X7R and Y5V. The single largest application is power supply decoupling, where the low ESR and the good temperature stability of the X5R may give it an edge over some electrolytics, and also over the Y5V. The X5R is typically used in telecommunications, computers, and instrumentation. Automotive applications will be limited, since under-hood temperatures may exceed the 85°C normal rating. However, there may still be applications for entertainment systems or navigational systems.