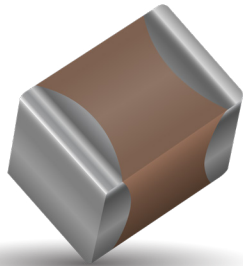


NASA Space Level BME X7R MLCC

S311-P838 Approved



KYOCERA AVX is the first company to be awarded the NASA S311-P838 specification for its Space BME X7R MLCC technology. This technology delivers an advanced capacitance voltage capability compared to conventional PME (Precious Metal Electrode) technologies while meeting the reliability levels demanded by NASA's space industry. The technology has several key benefits, downsizing case sizes, reducing weight and allowing more efficient use of the PCB area available. The range is tested using Mil spec standards and methods including 100% ultrasonic examination in compliance with the NASA space specification. These surface mount components also incorporate Flexitem[®], which greatly enhances resistance to any of the mechanical stress experienced by MLCCs during PCB assembly and in operation.

FEATURES

- Higher CV capability than standard capacitors resulting in reduced size / weight of components and saving in PCB space required.
- Every production lot will have a C of C, DPA and a summary data package.
- Use of Flexitem[®] technology for enhanced mechanical stress resistance.
- Case sizes: 0603 - 1812, cap values 2.2nF - 8.2uF available.
- Voltages: 16 - 100 Volts

HOW TO ORDER

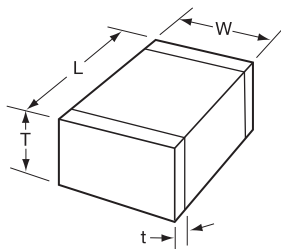
G311P838	A	F	X	825	J	1	R	3
GSFC Identifier	Ultrasonic Examination A = 100%	Size Code A = 0402 B = 0603 C = 0805 D = 1206 E = 1210 F = 1812	Dielectric Type X = X7R	Capacitance in pF 2 significant digits + number of zeros e.g. 103 = 10nF 225 = 2.2μF	Tolerance J = ±5% K = ±10% M = ±20%	Voltage 1 = 25Vdc 2 = 50Vdc 3 = 100Vdc 6 = 16Vdc	Termination R = Sn/Pb plated	Packaging/ Marking 1 = T/R unmarked capacitors 2 = T/R marked capacitors 3 = Waffle Pack, unmarked capacitors 4 = Waffle Pack, marked capacitors

Please note all parts are terminated with a minimum 10% Pb plating.

DIMENSIONS

mm (inches)

Size	0603		0805		1206		1210		1812	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
(L) Length	1.48 (0.058)	1.75 (0.069)	1.79 (0.070)	2.29 (0.090)	3.00 (0.118)	3.40 (0.134)	3.00 (0.118)	3.40 (0.134)	4.19 (0.165)	4.95 (0.195)
(W) Width	0.66 (0.026)	0.97 (0.038)	1.01 (0.040)	1.45 (0.057)	1.40 (0.055)	1.80 (0.071)	2.25 (0.088)	2.70 (0.108)	2.79 (0.115)	3.56 (0.140)
(T) Thickness	1.02 (0.040) Max.		1.52 (0.060) Max.		1.80 (0.071) Max.		2.80 (0.110) Max.		2.80 (0.110) Max.	
(t) terminal	0.20 (0.008)	0.50 (0.020)	0.25 (0.010)	0.75 (0.030)	0.25 (0.010)	0.75 (0.030)	0.25 (0.010)	0.75 (0.030)	0.25 (0.010)	0.95 (0.037)



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PREFERRED SIZES ARE SHADED

Case Sizes		B (0603)				C (0805)				D (1206)				E (1210)				F (1812)				
Code	Value	16V	25V	50V	100V	16V	25V	50V	100V	16V	25V	50V	100V	16V	25V	50V	100V	16V	25V	50V	100V	
222	2.2 (nF)																					
272	2.7																					
332	3.3																					
392	3.9																					
472	4.7																					
562	5.6																					
682	6.8																					
822	8.2																					
103	10																					
123	12																					
153	15																					
183	18																					
223	22																					
273	27																					
333	33																					
393	39																					
473	47																					
563	56																					
683	68																					
823	82																					
104	100																					
124	120																					
154	150																					
184	180																					
224	220																					
274	270																					
334	330																					
394	390																					
474	470																					
564	560																					
684	680																					
824	820																					
105	1 (µF)																					
125	1.2																					
155	1.5																					
185	1.8																					
225	2.2																					
275	2.7																					
335	3.3																					
395	3.9																					
475	4.7																					
565	5.6																					
685	6.8																					
825	8.2																					
106	10																					

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ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

Charateristics	Symbol	Test Method and Conditions	Tolerance (± %)	Limits		Unit
				Min.	Max.	
Capacitance	C _A	MIL-STD-202 Method 305 25°C, 1KHz, 1Vrms	5	0.95C _n	1.05C _n	pF
			10	0.9C _n	1.1C _n	
			20	0.8C _n	1.2C _n	
Insulation Resistance	R _I	MIL-STD-202 Method 302 120 sec, 25°C For C _n ≤ 10000pF: For C _n > 10000pF:	All	100	–	GΩ
				1000	–	GΩ nF
Dissipation Factor	Df	Measured 25°C, 1KHz, 1Vrms, 16-25 Volts > 25 Volts	All		3.5	%
					2.5	%
Voltage Proof	VP	MIL-STD-202 Method 301 60 sec	All	2.5U _R	–	V

ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURE

Charateristics	Symbol	Test Method and Conditions (Note 1)	Limits		Unit
			Min.	Max.	
Insulation Resistance	R _I	MIL-STD-202 Method 302 For C _n ≤ 10000pF: For C _n > 10000pF:	100	–	GΩ
			1000		GΩ nF