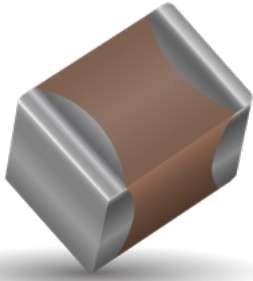


Engineering Module (EM) Range X7R BME MLCC for Non Flight Prototype

Design Covering ESCC 3009041, NASA S311-P838 and Mil 32535 Ranges



GENERAL DESCRIPTION

The EM series has been created to meet the growing demand for the space customers when a new design must be developed in a short time. KYOCERA AVX recommend using its -EM series of part numbers to meet this demand for nonflight/prototype designs.

Based upon its Space BME (3009041, NASA S311, Mil 32535 ranges) X7R & NP0 surface mount MLCCs the EM series use the same internal design and materials but without the final testing/screening (ESCC/QPL) for shorter lead times making it the ideal choice.

The EM series can be selected across the 3009041, NASA S311 and Mil 32535 ranges by selecting the matching dielectric, case size, voltage, capacitance value and capacitance tolerance.

BENEFITS

- EM Series allows customers to select non flight values from the ESCC 3009041/NASA S311-P838¹/Mil 32535 ranges for prototype design work.
- The EM range is finished with Sn/Pb and Flexitem® termination which protects against board flexure either during assembly or product lifetime.
- The EM range provides a high CV X7R range 16 – 100 volts, 2.2 nF – 22 uF and NP0 range 10 –100 Volts, 68 – 1500 pF.
- The EM range has shortened lead times to meet the customers' needs.
- With the EM range there is no Minimum Order Quantity.²

HOW TO ORDER

2220	5	C	106	K	A	R	6	-EM
Case Size	Voltage Code	Temp. Characteristics	Capacitance Value	Capacitance Tolerance	Reliability Level	Termination Finish	Packaging	Part Level
0402 0603 0805 1206 1210 1812 2220	4 V = 4 6.3V = 6 10V = Z 16V = Y 25V = 3 50V = 5 100V = 1	C = X7R A = NP0	10 nF = 103 100 nF = 104 1 uF = 105 4.7 uF = 475 10 uF = 106	± 5% = J ± 10% = K	Non Space = A	Sn/Pb with Flexitem® = R	Waffle = 6 Tape & Reel = 1	Engineering Module = EM

DIMENSIONS mm (inches)

Size	0402		0603		0805		1206		1210		1812		2220	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
(L) Length	0.90 (0.035)	1.15 (0.045)	1.45 (0.057)	1.75 (0.069)	1.80 (0.071)	2.20 (0.087)	3.00 (0.118)	3.40 (0.134)	3.00 (0.118)	3.40 (0.134)	4.20 (0.165)	4.80 (0.189)	5.3 (0.208)	6.1 (0.24)
(W) Width	0.41 (0.016)	0.61 (0.024)	0.65 (0.026)	0.95 (0.037)	1.05 (0.041)	1.45 (0.057)	1.40 (0.055)	1.80 (0.071)	2.30 (0.091)	2.70 (0.106)	3.00 (0.118)	3.40 (0.124)	4.60 (0.18)	5.41 (0.213)
(T) Thickness	0.61 Max. (0.024)		1.00 Max. (0.039)		1.52 Max. (0.060)		1.80 Max. (0.071)		2.80 Max. (0.110)		2.80 Max. (0.110)		2.80 Max. (0.110)	
(t) terminal	0.1 (0.004)	0.40 (0.015)	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)	0.25 (0.009)	1.03 (0.041)

Engineering Module (EM) Range X7R BME MLCC for
 Non Flight Prototype
 Design Covering ESCC 3009041, NASA S311-P838 and Mil 32535 Ranges



PREFERRED SIZES ARE SHADED

Case Sizes		0402			0603			0805			1206			1210			1812			2220		
Code	Value	16/25V	50V	100V	16/25V	50V	100V	16/25V	50V	100V	16/25V	50V	100V	16/25V	50V	100V	16/25V	50V	100V	16/25V	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																					
126	12																					
156	15																					
186	18																					
226	22																					

Note 1, NASA S311-P838 does not include 0402 and 2220 values currently.
 Note 2, with the EM range there is no Minimum Order Quantity check with the production plant for confirmation.

Engineering Module (EM) Range NP0 BME MLCC for
Non Flight Prototype
Design Covering Mil 32535 NP0 Ranges



PREFERRED SIZES ARE SHADED

			M3253502					M3253503					M3253503				
Case Sizes			0402					0603					0805				
Code	Value	Cap Tol	4-10 V	16 V	25 V	50 V	100 V	4-10 V	16 V	25 V	50 V	100 V	4-10 V	16 V	25 V	50 V	100V
680	68 pF	F,G,J,K															
820	82 pF	F,G,J,K															
101	100 pF	F,G,J,K															
121	120 pF	F,G,J,K															
151	150 pF	F,G,J,K															
181	180 pF	F,G,J,K															
221	220 pF	F,G,J,K															
271	270 pF	F,G,J,K															
331	330 pF	F,G,J,K															
391	390 pF	F,G,J,K															
471	470 pF	F,G,J,K															
561	560 pF	F,G,J,K															
681	680 pF	F,G,J,K															
821	820 pF	F,G,J,K															
102	1000pF	F,G,J,K															
122	1200pF	F,G,J,K															
152	1500pF	F,G,J,K															
182	1800pF	F,G,J,K															
202	2000pF	F,G,J,K															
222	2200pF	F,G,J,K															
272	2700pF	F,G,J,K															
332	3300pF	F,G,J,K															
392	3900pF	F,G,J,K															
472	4700pF	F,G,J,K															

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