

Space Level BME X7R MLCC

ESCC QPL 3009041 Approved



The AVX Space, 3009041, BME (Base Metal Electrode) X7R surface mount MLCC QPL approved since 2015.

The technology utilises the leading edge technology in MLCC construction and processing. This technology delivers high reliability with a superior capacitance voltage capability compared values in the smaller case sizes not only reduces the amount of board space used but also the weight of components. The surface mount components also incorporate Flexitem®, which greatly improves the resistance to the mechanical stress experienced by MLCCs.

BENEFITS

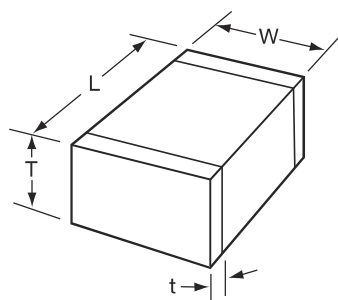
- Space BME enables customers to down size MLCCs and save PCB space.
- The Space BME range provides a high CV range 16 – 100 volts, 2.2 nF – 22 uF
- The range comes with Flexitem® termination which protection against board flexure either during assembly or product lifetime.

HOW TO ORDER

3009041	07	226	J	E
Detailed Spec 3009041	Component Variant	Capacitance Code	Capacitance Tolerance	Voltage
	01 (0402) 02 (0603) 03 (0805) 04 (1206) 05 (1210) 06 (1812) 07 (2220)	2 significant digits + number of zeros e.g. 103 = 10nF 225 = 2.2µF 226 = 22µF	J = 5% K = 10% M = 20%	X = 16V A = 25V C = 50V E = 100V

Please note all parts are terminated with a minimum 10% Pb plating. Parts packed in waffles as standard, tape and reel available upon request. Lot Validation Testing (LVT) can be ordered separately, LVT Groups 3, 2b, 2a, 1.

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 (0.124)	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)

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PREFERRED SIZES ARE SHADED

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

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ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

The measurements shall be performed at $T_{amb} = +22 \pm 3^{\circ}\text{C}$.

Charateristics	Symbol	Test Method and Conditions	Tolerance ($\pm$ %)	Limits		Unit
				Min.	Max.	
Capacitance (Note 1)	C_A	ESCC No. 3009	5 10 20	$0.95C_n$ $0.9C_n$ $0.8C_n$	$1.05C_n$ $1.1C_n$ $1.2C_n$	pF
Tangent of Loss Angle	$\text{tg}\delta$	ESCC No. 3009 For $U_R = 50\text{V}, 100\text{V}$: For $U_R = 16\text{V}, 25\text{V}$:	All	– –	250×10^{-4} 300×10^{-4}	– –
Insulation Resistance	R_I	ESCC No. 3009 For $C_n \leq 10000\text{pF}$: For $C_n > 10000\text{pF}$:	All	100 1000	– –	G Ω G Ω nF
Voltage Proof	VP	ESCC No. 3009	All	$2.5U_R$	–	V

NOTE: 1. 300 max for 16 volt and 25 volt rated components

ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURE

Charateristics	Symbol	Test Method and Conditions (Note 1)	Limits		Unit
			Min.	Max.	
Insulation Resistance	R_I	ESCC No. 3009 For $C_n \leq 10000\text{pF}$: For $C_n > 10000\text{pF}$:	10 100	–	G Ω G Ω nF
Temperature Characteristic	TC	ESCC No. 3009 $T_{amb} = -55 \pm 2^{\circ}\text{C}, +20 \pm 2^{\circ}\text{C}, +125 \pm 2^{\circ}\text{C}$ (Note 2 and 3) For VT = no voltage applied:	–15	+15	%

NOTE: 1. Single Sample, Inspection Level S3, AQL = 2.5%

2. If 1 failure out of 5 parts, then test 100%, 1.0% rejects maximum allowed in case of 100% testing.

3. X7R dielectric: Delta C/C at U_R is typically -10% to -70% dependant on capacitance value, (See curves on next page)

LVT 3009041 TEST DETAIL

L V T Group Test Number	LVT 3009041 Test Detail, Parametric Data Recorded	Min No. Of Pcs for Test
3	Solderability	3
2b	PCB Mounting, Capacitance Temperature Characteristics and Robustness of Termination	3
2a	PCB Mounting, Life testing for 1000 hours, 2 x RV @ 125°C	10
1	PCB Mounting, Rapid Change of Temperature , Steady state humidity testing, (1.5 Volts DC @ 85°C / 85% Hum) 1000 hours, external visual inspection	20

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