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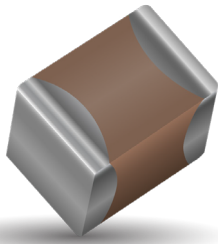
AVX

Multilayer Ceramic Capacitors MLCC - SMD/SMT NEW GLOBAL
PN KAF31GR71H225KU 50V 2.2uF X7R 1206 10% Flex AEC-Q200

Any questions, please feel free to contact us.
info@kaimte.com

Automotive MLCC

General Specifications



GENERAL DESCRIPTION

KYOCERA AVX has supported the Automotive Industry requirements for Multilayer Ceramic Capacitors consistently for more than 25 years. Products have been developed and tested specifically for automotive applications and all manufacturing facilities are QS9000 and VDA 6.4 approved.

KYOCERA AVX is using AECQ200 as the qualification vehicle for this transition. A detailed qualification package is available on request and contains results on a range of part numbers.

HOW TO ORDER

0805	5	A	104	K	4	T	2	A
Size 0402 0603 0805 1206 1210 1812	Voltage 6.3V = 6 10V = Z 16V = Y 25V = 3 35V = D 50V = 5 100V = 1 200V = 2 500V = 7	Dielectric NP0 = A X7R = C X8R = F	Capacitance Code (In pF) 2 Sig. Digits + Number of Zeros e.g. 10 F = 106	Capacitance Tolerance B = ± 0.1pF (<10pF)* C = ± 0.25pF (<10pF)* D = ± 0.5pF (<10pF)* F = ± 1%* G = ± 2%* J = ± 5% (<=1µF) K = ± 10% M = ± 20%	Failure Rate 4=Automotive	Terminations T = Plated Ni and Sn Z = FLEXITERM®*** U = Conductive Epo **X7R X8R only	Packaging 2 = 7" Reel 4 = 13" Reel	Special Code A = Std. Product
					Contact factory for availability of Tolerance Options for Specific Part Numbers.			
					NOTE: Contact factory for non-specified capacitance values 0402 case size available in T termination only.			
					*NPO only			

COMMERCIAL VS AUTOMOTIVE MLCC PROCESS COMPARISON

	Commercial	Automotive
Administrative	Standard Part Numbers. No restriction on who purchases these parts.	Specific Automotive Part Number. Used to control supply of product to Automotive customers.
Lot Qualification (Destructive Physical Analysis - DPA)	As per EIA RS469	Increased sample plan stricter criteria.
Visual/Cosmetic Quality	Standard process and inspection	100% inspection
Application Robustness	Standard sampling for accelerated wave solder on X7R dielectrics	Increased sampling for accelerated wave solder on X7R and NPO followed by lot by lot reliability testing.

All Tests have Accept/Reject Criteria 0/1

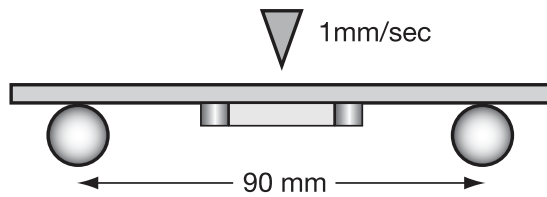
Automotive MLCC

NP0/X7R Dielectric

FLEXITERM FEATURES

a) Bend Test

The capacitor is soldered to the PC Board as shown:



Typical bend test results are shown below:

Style	Conventional	Soft Term
0603	>2mm	>5
0805	>2mm	>5
1206	>2mm	>5

a) Temperature Cycle testing

FLEXITERM® has the ability to withstand at least 1000 cycles between -55°C and +125°C

Automotive MLCC-NP0

Capacitance Range



Case Size		0402			0603					0805						1206							1210								
Length (L)	mm (in.)	1.00 ± 0.10 (0.040 ± 0.004)			1.60 ± 0.15 (0.063 ± 0.006)					2.01 ± 0.20 (0.079 ± 0.008)						3.20 ± 0.20 (0.126 ± 0.008)							3.20 ± 0.20 (0.126 ± 0.008)								
Width (W)	mm (in.)	0.50 ± 0.10 (0.020 ± 0.004)			0.81 ± 0.15 (0.032 ± 0.006)					1.25 ± 0.20 (0.049 ± 0.008)						1.60 ± 0.20 (0.063 ± 0.008)							2.50 ± 0.20 (0.098 ± 0.008)								
Terminal (t)	mm (in.)	0.25 ± 0.15 (0.010 ± 0.006)			0.35 ± 0.15 (0.014 ± 0.006)					0.50 ± 0.25 (0.020 ± 0.010)						0.50 ± 0.25 (0.020 ± 0.010)							0.50 ± 0.25 (0.020 ± 0.010)								
CAP	CAP Code	25	50	100	25	50	100	200	250	25	50	100	200	250	500	630	25	50	100	200	250	500	630	1000	50	100	200	250	500	630	1000
0.5	0R5	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
1	1R0	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
5	5R0	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
10	100	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
12	120	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
15	150	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
18	180	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
22	220	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
27	270	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
33	330	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
39	390	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
47	470	C	C	C	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
56	560	C	C	C	G	G	G	G	G	J	J	J	J	J	N		J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
68	680	C	C	C	G	G	G	G	G	J	J	J	J	J	N		J	J	J	J	J	J	Q	Q	J	J	J	J	J	J	J
82	820	C	C	C	G	G	G	G	G	J	J	J	J	J	N		J	J	J	J	J	J	Q	Q	N	N	N	N	N	N	N
100	101	C	C	C	G	G	G	G	G	J	J	J	J	J	N		J	J	J	J	J	J	Q	Q	N	N	N	N	N	N	N
120	121				G	G	G			J	J	J	J	N			J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
150	151				G	G	G			J	J	J	J	N			J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
180	181				G	G	G			J	J	J	J	N			J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
220	221				G	G	G			J	J	J	J	N			J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
270	271				G	G	G			J	J	J	J	N			J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
330	331				G	G	G			J	J	J	J	N			J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
390	391				G	G	G			J	J	J	J				J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
430	431				G	G				J	J	J	J				J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
470	471				G	G				J	J	J	J				J	J	J	J	J	J	Q	Q	N	N	N	N	P	P	X
560	561				G	G				J	J	J					J	J	J	J	M	Q	Q		N	N	N	N	P	P	
680	681				G	G				J	J	J					J	J	J	J	M	Q	Q		N	N	N	N	P	P	
1,000	102				G	G				J	J	J					J	J	J	J	M	Q	Q		N	N	N	N	P	P	X
1,200	122				G	G				J	J						N	N	N	N					N	N	N	N	P	P	
1,500	152				G	G				J	J						N	N	N	N					N	N	N	N	P	P	
2,200	222				G					J	J						J	J	J	J	J	J			N	N	N	N	P	P	
2,700	272				G					J	J						J	J	J	J	J	J			N	N	N	N	P	P	
3,300	332				G												M	M	M	M	M	M									
3,900	392				G												M	M	M	M	M	M									
4,700	472				G												P	P	P	P	P	P									
5,600	562				G																										
6,800	682				G																										
8,200	822				G																										
10,000	103				G																										
12,000	123																														
15,000	153																														
18,000	183																														
22,000	223																														
27,000	273																														
33,000	333																														
39,000	393																														
47,000	473																														
56,000	563																														
68,000	683																														
82,000	823																														
100,000	104																														

Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSSED							

Automotive MLCC - X8R

Capacitance Range



SIZE			0603			0805			1206	
Soldering			Reflow/Wave			Reflow/Wave			Reflow/Wave	
WVDC	WVDC		25V	50V	100V	25V	50V	100V	25V	50V
472	pF	4700	G	G	G	J	J	J	J	J
562		5600	G	G	G	J	J	J	J	J
682		6800	G	G	G	J	J	J	J	J
822		8200	G	G	G	J	J	J	J	J
103	uF	0.01	G	G	G	J	J	J	J	J
123		0.012	G	G		J	J	N	J	J
153		0.015	G	G		J	J	N	J	J
183		0.018	G	G		J	J	N	J	J
223		0.022	G	G		J	J	N	J	J
273		0.027	G	G		J	J		J	J
333		0.033	G	G		J	J		J	J
393		0.039	G	G		J	J		J	J
473		0.047	G	G		J	J		J	J
563		0.056	G			N	N		M	M
683		0.068	G			N	N		M	M
823		0.082				N	N		M	M
104		0.1				N	N		M	M
124		0.12				N	N		M	M
154		0.15				N	N		M	M
184		0.18				N			M	M
224		0.22				N			M	M
274		0.27							M	M
334		0.33							M	M
394		0.39							M	M
474		0.47							M	Q
684		0.68							Q	Q
824		0.82							Q	Q
105		1							Q	Q
WVDC	WVDC		25V	50V	100V	25V	50V	100V	25V	50V
SIZE			0603			0805			1206	

Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSSSED							

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