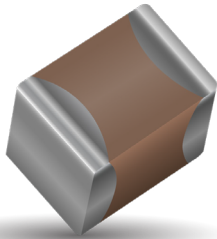


Automotive MLCC, KAM Series

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.

The KAM series are plated with a Nickel/Tin finish. For FLEXITERM® please refer to the KAF series datasheet

HOW TO ORDER

KAM	31	G	R7	1H	475	K	U
Series AEC-Q200 Tin Nickel Finish	Size 03 = 0201 05 = 0402 15 = 0603 21 = 0805 31 = 1206 32 = 1210 42 = 1808 43 = 1812 55 = 2220	Thickness See Cap Chart	Dielectric CG = COG R7 = X7R S7 = X7S T7 = X7T R8 = X8R L8 = X8L G8 = X8G	Voltage 0J = 6.3V 1A = 10V 1C = 16V 1E = 25V 1H = 50V 2A = 100V 2D = 200V 2E = 250V 2H = 500V 2J = 630V 3A = 1000V 3N = 1500V 3D = 2000V 3E = 2500V 3U = 3000V	Capacitance Code Code (in pF) 2 Significant Digits +Number of zeros eg 10uF = 106 10nF = 103 47pF = 470	Capacitance Tolerance B = ± 0.1pF (<10pF)* C = ± 0.25pF (<10pF)* D = ± 0.5pF (<10pF)* F = ± 1%* G = ± 2%* J = ± 5% K = ± 10% M = ± 20% *COG only	Packaging See Table Below

PACKAGING CODES

Code	EIA (inch)	IEC(mm)	7" Paper	7" Embossed	13" Paper	13" Embossed
03	0201	0603	H		N	
05	0402	1005	H		N	
15	0603	1608	T	U	M	L
21	0805	2012	T	U	M	L
31	1206	3216	T	U	M	L
32	1210	3225	T	U	M	L
42	1808	4520		Y		K
43	1812	4532		V		S
55	2220	5750		V		S

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	Increased sampling for accelerated wave solder followed by lot by lot reliability testing.

All Tests have Accept/Reject Criteria 0/1

Automotive MLCC - X7R, 630V to 3000V

Capacitance Range



PREFERRED SIZES ARE SHADED

Case Size	1206					1210				1808						1812						2220																																																																														
Soldering	Reflow/Wave					Reflow/Wave				Reflow Only						Reflow Only						Reflow Only																																																																														
(L) Length	3.2 ± 0.2 (0.126 ± 0.008)					3.2 ± 0.2 (0.126 ± 0.008)				4.57 ± 0.25 (0.18 ± 0.01)						4.5 ± 0.3 (0.177 ± 0.012)						5.7 ± 0.5 (0.224 ± 0.02)																																																																														
(W) Width	1.6 ± 0.2 (0.063 ± 0.008)					2.5 ± 0.2 (0.098 ± 0.008)				2.03 ± 0.25 (0.08 ± 0.01)						3.2 ± 0.2 (0.126 ± 0.008)						5 ± 0.4 (0.197 ± 0.016)																																																																														
(t) Terminal	0.5 ± 0.25 (0.02 ± 0.01)					0.5 ± 0.25 (0.02 ± 0.01)				0.61 ± 0.36 (0.024 ± 0.014)						0.61 ± 0.36 (0.024 ± 0.014)						0.64 ± 0.39 (0.025 ± 0.015)																																																																														
Voltage (V)	630	1000	1500	2000	2500	630	1000	1500	2000	630	1000	1500	2000	2500	3000	630	1000	1500	2000	2500	3000	630	1000	1500	2000	2500	3000	630	1000	1500	2000	3000																																																																				
Cap (pF)	101	100	121	120	151	150	181	180	221	220	271	270	331	330	391	390	471	470	561	560	681	680	821	820	102	1000	122	1220	152	1500	182	1800	222	2200	272	2700	332	3300	392	3900	472	4700	562	5600	682	6800	822	8200	103	0.01	123	0.012	153	0.015	183	0.018	223	0.022	273	0.027	333	0.033	393	0.039	473	0.047	563	0.056	683	0.068	823	0.082	104	0.1	124	0.12	154	0.15	224	0.22	334	0.33	474	0.47	684	0.68	105	1	155	1.5	225	2.2	335	3.3	475	4.7	106	10	226	22
WVDC	630	1000	1500	2000	2500	630	1000	1500	2000	630	1000	1500	2000	2500	3000	630	1000	1500	2000	2500	3000	630	1000	1500	2000	2500	3000	630	1000	1500	2000	3000																																																																				
Size	1206					1210				1808						1812						2220																																																																														

NOTE: Contact factory for non-specified capacitance values

Case Size	1206(KAM31)			1210(KAM32)		1808(KAM42)			1812(KAM43)			2220(KAM55)		
Thickness Letter	B	D	A	H		B	C	E	F	J	Z	C		
Max Thickness	0.94	1.45	1.80	1.80		1.80	2.21	1.80	2.21	2.80	2.21	2.80		
Carrier Tape	PAPER	EMB	EMB	EMB		EMB	EMB	EMB	EMB	EMB	EMB	EMB		
Packaging Code 7' reel	T	U	U	U		Y	Y	V	V	V	V	V		
Packaging Code 13' reel	M	L	L	L		K	K	S	S	S	S	S		
	Paper					EMBOSSSED (EMB)								

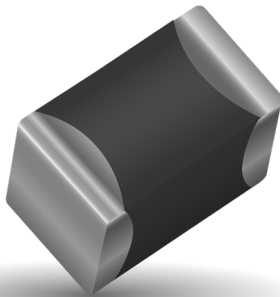


Automotive MLCC - X8R / X8L

General Specifications

APPLICATIONS FOR X8R AND X8L CAPACITORS

- All market sectors with a 150°C requirement
- Automotive on engine applications
- Oil exploration applications
- Hybrid automotive applications
 - Battery control
 - Inverter / converter circuits
 - Motor control applications
 - Water pump
- Hybrid commercial applications
 - Emergency circuits
 - Sensors
 - Temperature regulation

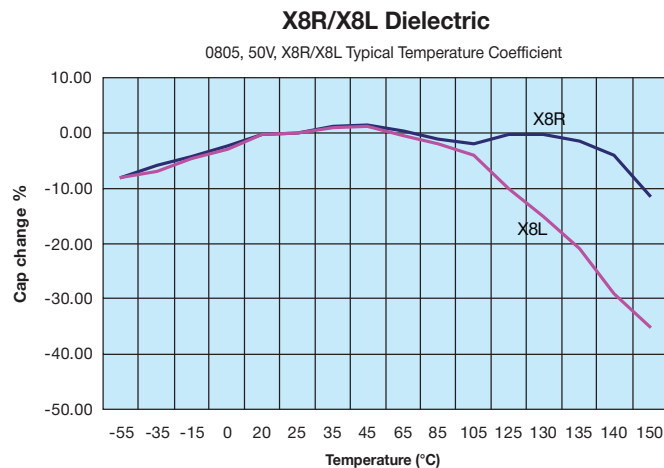


ADVANTAGES OF X8R AND X8L MLC CAPACITORS

- Both ranges are qualified to the highest automotive AEC-Q200 standards
- Excellent reliability compared to other capacitor technologies
- RoHS compliant
- Low ESR / ESL compared to other technologies
- Tin solder finish
- FLEXITERM® available
- 100V range available

ENGINEERING TOOLS FOR HIGH VOLTAGE MLC CAPACITORS

- Samples
- Technical Articles
- Application Engineering
- Application Support



Automotive X8G (-55°C to 150°C , ±30ppm/°C)

Capacitance Range

SIZE		0402		0603		0805	
Soldering		Reflow/Wave		Reflow/Wave		Reflow/Wave	
(L) Length	mm (in.)	1 ± 0.1 (0.04 ± 0.004)		1.6 ± 0.15 (0.063 ± 0.006)		2.01 ± 0.2 (0.079 ± 0.008)	
(W) Width	mm (in.)	0.5 ± 0.1 (0.02 ± 0.004)		0.81 ± 0.15 (0.032 ± 0.006)		1.25 ± 0.2 (0.049 ± 0.008)	
(t) Terminal	mm (in.)	0.25 ± 0.15 (0.01 ± 0.006)		0.35 ± 0.15 (0.014 ± 0.006)		0.5 ± 0.25 (0.02 ± 0.01)	
WVDC		25V	50V	25V	50V	50V	100V
0R5	0.5			A	A	B	B
1R0	1.0			A	A	B	B
1R2	1.2			A	A	B	B
1R5	1.5			A	A	B	B
1R8	1.8			A	A	B	B
2R2	2.2			A	A	B	B
2R7	2.7			A	A	B	B
3R3	3.3			A	A	B	B
3R9	3.9			A	A	B	B
4R7	4.7			A	A	B	B
5R0	5			A	A	B	B
5R6	5.6			A	A	B	B
6R8	6.8			A	A	B	B
8R2	8.2			A	A	B	B
100	10			A	A	B	B
120	12			A	A	B	B
150	15			A	A	B	B
180	18			A	A	B	B
220	22			A	A	B	B
270	27			A	A	B	B
330	33			A	A	B	B
390	39			A	A	B	B
470	47	A	A	A	A	B	B
510	51	A	A	A	A	B	B
560	56	A	A	A	A	B	B
680	68	A	A	A	A	B	B
820	82	A	A	A	A	B	B
101	100	A	A	A	A	B	B
121	120			A	A	B	B
151	150			A	A	B	B
181	180			A	A	B	B
221	220			A	A	B	B
271	270			A	A		
331	330			A	A		
391	390			A	A		
471	470			A	A		
561	560						
681	680						
821	820						
102	1000						
122	1200						
152	1500						
182	1800						
222	2200						
272	2700						
332	3300						
392	3900						
472	4700						
562	5600						
682	6800						
103	10nF						
WVDC		25V	50V	25V	50V	50V	100V
Size		0402		0603		0805	

Case Size	0402(KAM05)	0603(KAM15)	0805(KAM21)
Letter	A	A	B
Max Thickness mm	0.56	0.90	0.94
Carrier Tape	Paper	Paper	Paper
Packaging Code 7' reel	H	T	T
Packaging Code 13' reel	N	M	M
	Paper		

单击下面可查看定价，库存，交付和生命周期等信息

[>>Kyocera\(京瓷\)](#)