



THE DATASHEET OF W3A41A101KAT2A

Capacitor Array

Capacitor Array (IPC)

BENEFITS OF USING CAPACITOR ARRAYS

KYOCERA AVX capacitor arrays offer designers the opportunity to lower placement costs, increase assembly line output through lower component count per board and to reduce real estate requirements.

Reduced Costs

Placement costs are greatly reduced by effectively placing one device instead of four or two. This results in increased throughput and translates into savings on machine time. Inventory levels are lowered and further savings are made on solder materials, etc.

Space Saving

Space savings can be quite dramatic when compared to the use of discrete chip capacitors. As an example, the 0508 4-element array offers a space reduction of >40% vs. 4 x 0402 discrete capacitors and of >70% vs. 4 x 0603 discrete capacitors. (This calculation is dependent on the spacing of the discrete components.)

Increased Throughput

Assuming that there are 220 passive components placed in a mobile phone:

A reduction in the passive count to 200 (by replacing discrete components with arrays) results in an increase in throughput of approximately 9%.

A reduction of 40 placements increases throughput by 18%.

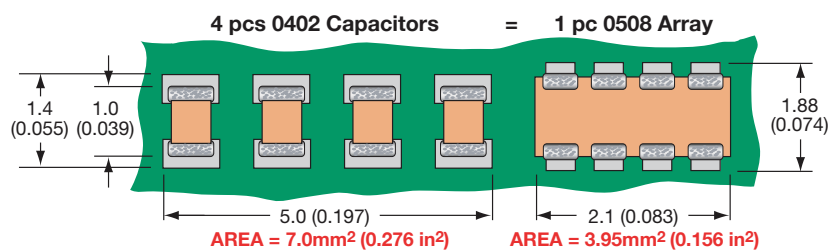
For high volume users of cap arrays using the very latest placement equipment capable of placing 10 components per second, the increase in throughput can be very significant and can have the overall effect of reducing the number of placement machines required to mount components:

If 120 million 2-element arrays or 40 million 4-element arrays were placed in a year, the requirement for placement equipment would be reduced by one machine.

During a 20Hr operational day a machine places 720K components. Over a working year of 167 days the machine can place approximately 120 million. If 2-element arrays are mounted instead of discrete components, then the number of placements is reduced by a factor of two and in the scenario where 120 million 2-element arrays are placed there is a saving of one pick and place machine.

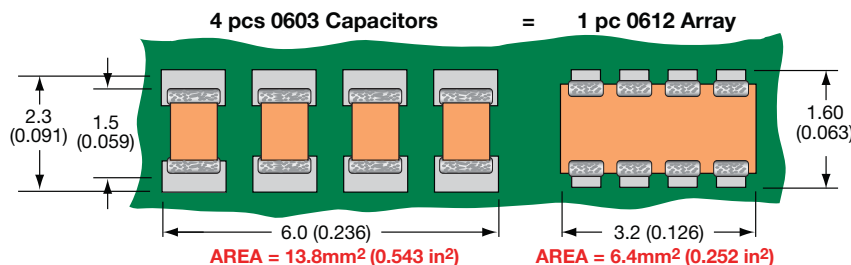
Smaller volume users can also benefit from replacing discrete components with arrays. The total number of placements is reduced thus creating spare capacity on placement machines. This in turn generates the opportunity to increase overall production output without further investment in new equipment.

W2A (0508) Capacitor Arrays



The 0508 4-element capacitor array gives a PCB space saving of over 40% vs four 0402 discrettes and over 70% vs four 0603 discrete capacitors.

W3A (0612) Capacitor Arrays



The 0612 4-element capacitor array gives a PCB space saving of over 50% vs four 0603 discrettes and over 70% vs four 0805 discrete capacitors.

Capacitor Array

Capacitor Array (IPC)

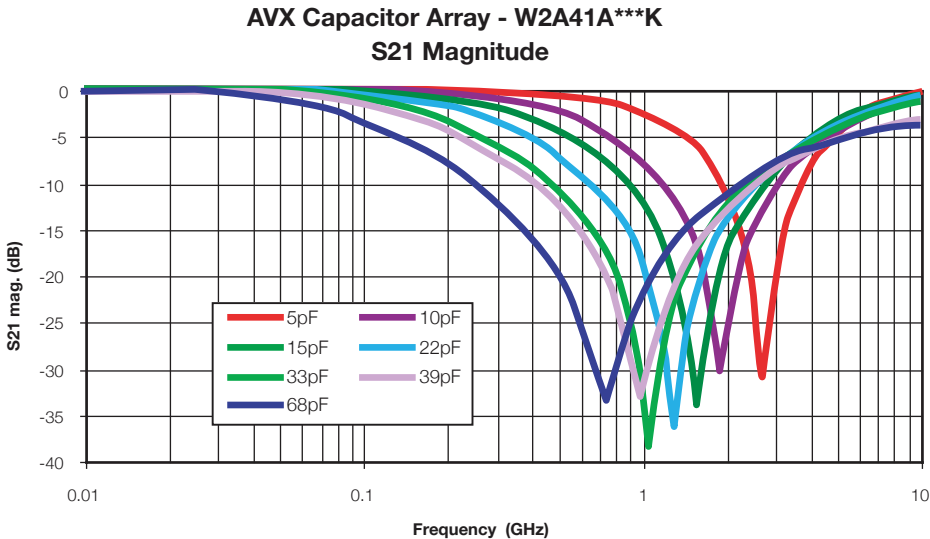
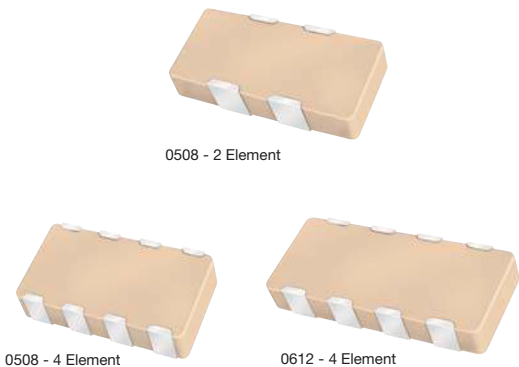


GENERAL DESCRIPTION

KYOCERA AVX is the market leader in the development and manufacture of capacitor arrays. The array family of products also includes the 0612 4-element device as well as 0508 2-element and 4-element series, all of which have received widespread acceptance in the marketplace.

KYOCERA AVX capacitor arrays are available in X5R, X7R and NP0 (C0G) ceramic dielectrics to cover a broad range of capacitance values. Voltage ratings from 6.3 Volts up to 100 Volts are offered. KYOCERA AVX also now offers a range of automotive capacitor arrays qualified to AEC-Q200 (see separate table).

Key markets for capacitor arrays are Mobile and Cordless Phones, Digital Set Top Boxes, Computer Motherboards and Peripherals as well as Automotive applications, RF Modems, Networking Products, etc.



HOW TO ORDER

W	2	A	4	3	C	103	M	A	T	2A
Style W = RoHS L = SnPb	Case Size 2 = 0508 3 = 0612	Array	Number of Caps 2 = 2 Element 4 = 4 Element	Voltage 6 = 6V Z = 10V Y = 16V 3 = 25V 5 = 50V 1 = 100V	Dielectric A = NP0 C = X7R D = X5R	Capacitance Code 2 Sig. Digits + Number of Zeros	Capacitance Tolerance J = ±5% K = ±10% M = ±20%	Failure Rate A = Commercial 4 = Automotive	Termination Code *T = Plated Ni and Sn *Z = FLEXITERM® *B = 5% min lead *X = FLEXITERM® with 5% min lead	Packaging & Quantity Code 2A = 7" Reel 4A = 13" Reel 2F = 7" Reel (1000)
									*RoHS Compliant	
									*Not RoHS Compliant	




NOTE: Contact factory for availability of Termination and Tolerance Options for Specific Part Numbers.

Capacitor Array

Capacitance Range – NP0/C0G

SIZE			W2 = 0508			W3 = 0612		
# Elements			4			4		
Soldering			Reflow/Wave			Reflow/Wave		
Packaging			Paper/Embossed			Paper/Embossed		
Length	mm		1.30 ± 0.15			1.60 ± 0.150		
	(in.)		(0.051 ± 0.006)			(0.063 ± 0.006)		
Width	mm		2.10 ± 0.15			3.20 ± 0.20		
	(in.)		(0.083 ± 0.006)			(0.126 ± 0.008)		
Max. Thickness	mm		0.94			1.35		
	(in.)		(0.037)			(0.053)		
WVDC			16	25	50	16	25	50
1R0	Cap	1.0						
1R2	(pF)	1.2						
1R5		1.5						
1R8		1.8						
2R2		2.2						
2R7		2.7						
3R3		3.3						
3R9		3.9						
4R7		4.7						
5R6		5.6						
6R8		6.8						
8R2		8.2						
100		10						
120		12						
150		15						
180		18						
220		22						
270		27						
330		33						
390		39						
470		47						
560		56						
680		68						
820		82						
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		1200						
152		1500						
182		1800						
222		2200						
272		2700						
332		3300						
392		3900						
472		4700						
562		5600						
682		6800						
822		8200						

 = Supported Values

Capacitor Array

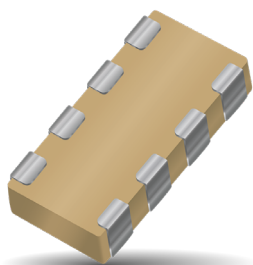
Capacitance Range – X7R



SIZE		W2 = 0508						W2 = 0508						W3 = 0612					
# Elements		2						4						4					
Soldering		Reflow/Wave						Reflow/Wave						Reflow/Wave					
Packaging		All Paper						Paper/Embossed						Paper/Embossed					
Length	mm	1.30 ± 0.15						1.30 ± 0.15						1.60 ± 0.150					
	(in.)	(0.051 ± 0.006)						(0.051 ± 0.006)						(0.063 ± 0.006)					
Width	mm	2.10 ± 0.15						2.10 ± 0.15						3.20 ± 0.20					
	(in.)	(0.083 ± 0.006)						(0.083 ± 0.006)						(0.126 ± 0.008)					
Max. Thickness	mm	0.94						0.94						1.35					
	(in.)	(0.037)						(0.037)						(0.053)					
WVDC		6	10	16	25	50	100	6	10	16	25	50	100	6	10	16	25	50	100
101	Cap (pF)	100																	
121		120																	
151		150																	
181		180																	
221		220																	
271		270																	
331		330																	
391		390																	
471		470																	
561		560																	
681		680																	
751		750																	
821		820																	
102		1000																	
122		1200																	
152		1500																	
182		1800																	
222		2000																	
272		2700																	
332		3300																	
392		3900																	
472		4700																	
562		5600																	
682		6800																	
822		8200																	
103	Cap (µF)	0.010																	
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		0.100																	
154		0.150																	
224		0.220																	
274		0.270																	
334		0.330																	
394		0.390																	
474		0.470																	
564		0.560																	
684		0.680																	
824		0.820																	
105		1.000																	

Capacitor Array

Automotive Capacitor Array (IPC)



As the market leader in the development and manufacture of capacitor arrays KYOCERA AVX is pleased to offer a range of AEC-Q200 qualified arrays to complement our product offering to the Automotive industry. Both the KYOCERA AVX 0612 and 0508 4-element capacitor array styles are qualified to the AEC-Q200 automotive specifications.

AEC-Q200 is the Automotive Industry qualification standard and a detailed qualification package is available on request.

All KYOCERA AVX automotive capacitor array production facilities are certified to ISO/TS 16949:2002.

HOW TO ORDER

W	3	A	4	Y	C	104	K	4	T	2A
Style W = RoHS L = SnPb	Case Size 2 = 0508 3 = 0612	Array	Number of Caps	Voltage Z = 10V Y = 16V 3 = 25V 5 = 50V 1 = 100V	Dielectric A = NP0 C = X7R F = X8R	Capacitance Code (In pF) Significant Digits + Number of Zeros e.g. 10µF=106	Capacitance Tolerance *J = ±5% *K = ±10% *M = ±20%	Failure Rate 4 = Automotive	Terminations *T = Plated Ni and Sn *Z = FLEXITERM® B = 5% min lead X = FLEXITERM® with 5% min lead	Packaging & Quantity Code 2A = 7" Reel 4A = 13" Reel 2F = 7" Reel (1000)

*RoHS Compliant

*Contact factory for availability by part number for K = ±10% and J = ±5% tolerance.

NP0/COG

SIZE	W3 = 0612
No. of Elements	Reflow/Wave
WVDC	16 25 50
1R0 Cap 1.0	
1R2 Cap 1.2	
1R5 Cap 1.5	
1R8 1.8	
2R2 2.2	
2R7 2.7	
3R3 3.3	
3R9 3.9	
4R7 4.7	
5R6 5.6	
6R8 6.8	
8R2 8.2	
100 10	
120 12	
150 15	
180 18	
220 22	
270 27	
330 33	
390 39	
470 47	
560 56	
680 68	
820 82	
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 1200	
152 1500	
182 1800	
222 2200	
272 2700	
332 3300	
392 3900	
472 4700	
562 5600	
682 6800	
822 8200	

■ = NP0/COG

X7R

SIZE	W2 = 0508	W2 = 0508	W3 = 0612
No. of Elements	2	4	4
WVDC	16 25 50 100	16 25 50 100	10 16 25 50 100
101 Cap 100			
121 Cap 120			
151 Cap 150			
181 180			
221 220			
271 270			
331 330			
391 390			
471 470			
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			
822 8200			
103 Cap 0.010			
123 Cap 0.012			
153 Cap 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 0.10			
124 0.12			
154 0.15			
224 0.22			

■ = X7R

*Not RoHS Compliant



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



RoHS
COMPLIANT

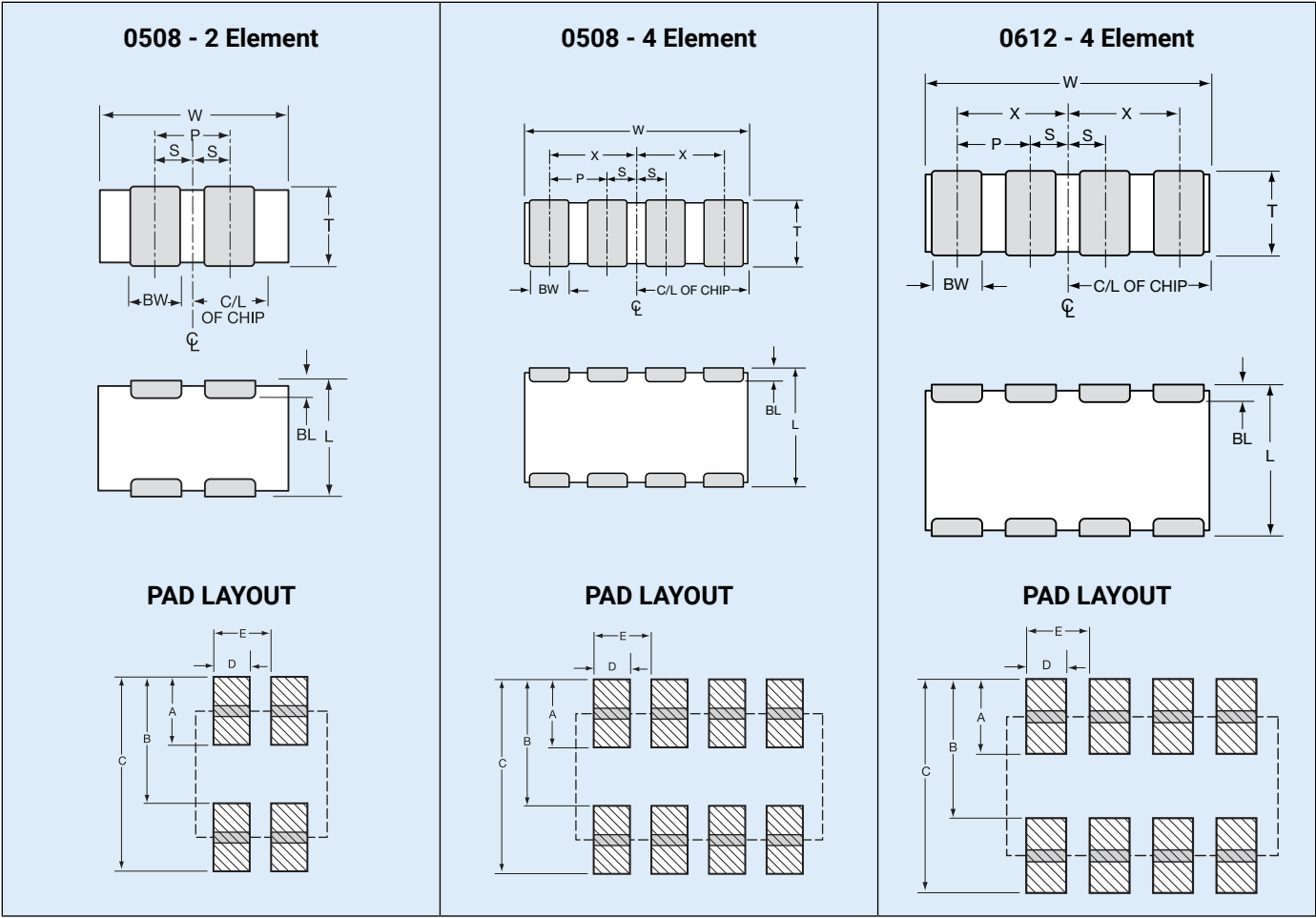
Capacitor Array

Part & Pad Layout Dimensions



PART & PAD LAYOUT DIMENSIONS

millimeters (inches)



PART DIMENSIONS

0508 - 2 Element

L	W	T	BW	BL	P	S
1.30 ± 0.15 (0.051 ± 0.006)	2.10 ± 0.15 (0.083 ± 0.006)	0.94 MAX (0.037 MAX)	0.43 ± 0.10 (0.017 ± 0.004)	0.33 ± 0.08 (0.013 ± 0.003)	1.00 REF (0.039 REF)	0.50 ± 0.10 (0.020 ± 0.004)

0508 - 4 Element

L	W	T	BW	BL	P	X	S
1.30 ± 0.15 (0.051 ± 0.006)	2.10 ± 0.15 (0.083 ± 0.006)	0.94 MAX (0.037 MAX)	0.25 ± 0.06 (0.010 ± 0.003)	0.20 ± 0.08 (0.008 ± 0.003)	0.50 REF (0.020 REF)	0.75 ± 0.10 (0.030 ± 0.004)	0.25 ± 0.10 (0.010 ± 0.004)

0612 - 4 Element

L	W	T	BW	BL	P	X	S
1.60 ± 0.20 (0.063 ± 0.008)	3.20 ± 0.20 (0.126 ± 0.008)	1.35 MAX (0.053 MAX)	0.41 ± 0.10 (0.016 ± 0.004)	0.18 ^{+0.25} _{-0.08} (0.007 ^{+0.010} _{-0.003})	0.76 REF (0.030 REF)	1.14 ± 0.10 (0.045 ± 0.004)	0.38 ± 0.10 (0.015 ± 0.004)

PAD LAYOUT DIMENSIONS

0508 - 2 Element

A	B	C	D	E
0.68 (0.027)	1.32 (0.052)	2.00 (0.079)	0.46 (0.018)	1.00 (0.039)

0508 - 4 Element

A	B	C	D	E
0.56 (0.022)	1.32 (0.052)	1.88 (0.074)	0.30 (0.012)	0.50 (0.020)

0612 - 4 Element

A	B	C	D	E
0.89 (0.035)	1.65 (0.065)	2.54 (0.100)	0.46 (0.018)	0.76 (0.030)