

Capacitor Array (IPC)

BENEFITS OF USING CAPACITOR ARRAYS

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%.

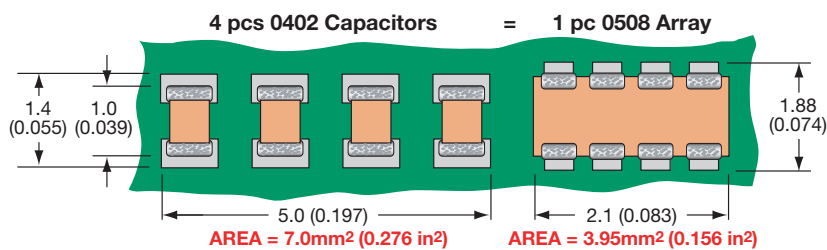
For high volume users of cap arrays using the very latest placement equipment capable of placing 10 components per second, the increase in throughput can be very significant and can have the overall effect of reducing the number of placement machines required to mount components:

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.

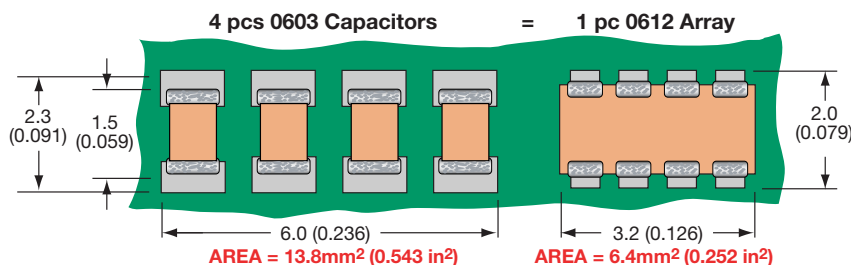
Smaller volume users can also benefit from replacing discrete components with arrays. The total number of placements is reduced thus creating spare capacity on placement machines. This in turn generates the opportunity to increase overall production output without further investment in new equipment.

W2A (0508) Capacitor Arrays



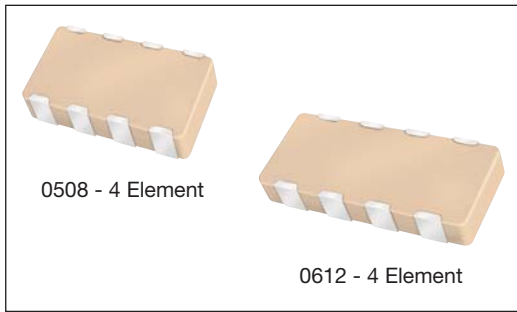
The 0508 4-element capacitor array gives a PCB space saving of over 40% vs four 0402 discretés and over 70% vs four 0603 discrete capacitors.

W3A (0612) Capacitor Arrays



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

Automotive Capacitor Array (IPC)



As the market leader in the development and manufacture of capacitor arrays AVX is pleased to offer a range of AEC-Q200 qualified arrays to compliment our product offering to the Automotive industry. Both the 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 AVX automotive capacitor array production facilities are certified to ISO/TS 16949:2002.

HOW TO ORDER

W Style W = RoHS L = SnPb	3 Case Size 2 = 0508 3 = 0612	A Array	4 Number of Caps	Y Voltage Z = 10V Y = 16V 3 = 25V 5 = 50V 1 = 100V	C Dielectric A = NPO C = X7R F = X8R	104 Capacitance Code (In pF) Significant Digits + Number of Zeros e.g. 10µF=106	K Capacitance Tolerance *J = ±5% *K = ±10% M = ±20%	4 Failure Rate 4 = Automotive	T Terminations *T = Plated Ni and Sn *Z = FLEXITERM® B = 5% min lead X = FLEXITERM® with 5% min lead	2A Packaging & Quantity Code 2A = 7" Reel (4000) 4A = 13" Reel (10000) 2F = 7" Reel (1000)
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***RoHS compliant**

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

NPO/COG												
SIZE	W2 = 0508				W3 = 0612							
	4				4							
No. of Elements	16	25	50	100	16	25	50	100				
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												

■ = NPO/COG

X7R													
SIZE	W2 = 0508				W2 = 0508				W3 = 0612				
	2				4				4				
No. of Elements	16	25	50	100	16	25	50	100	10	16	25	50	100
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													
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

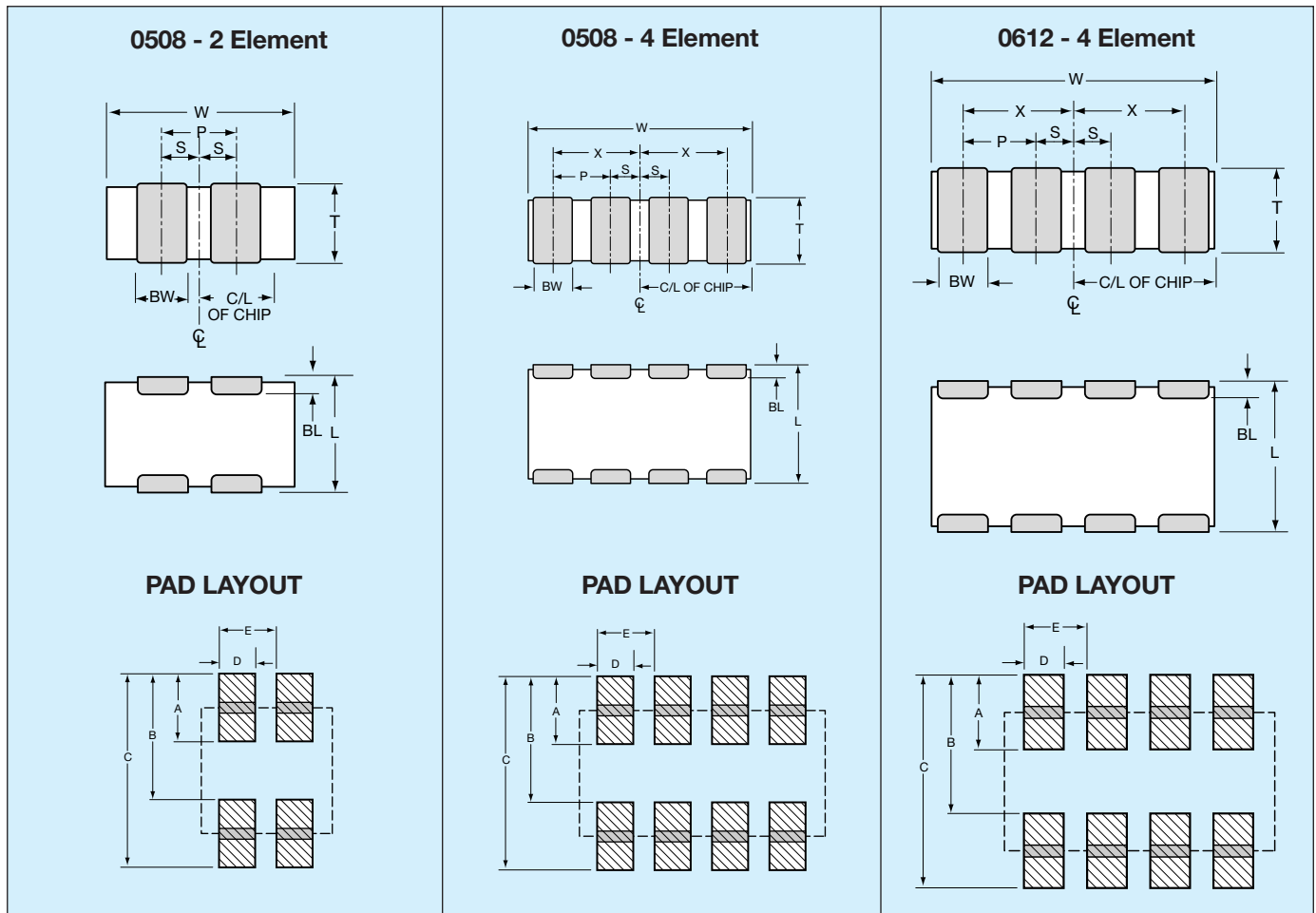
Not RoHS Compliant



For RoHS compliant products, please select correct termination style.

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)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

AVX:

[W2A2YC102MAT2A](#) [W2A2YC103MAT2A](#) [W2A41A330KAT2A](#) [W2A43A470KAT2A](#) [W2A45A101KAT2A](#)
[W2A45C103KAT2A](#) [W2A45C471MAT2A](#) [W2A4YC103KAT2A](#) [W2A4YC103MAT2A](#) [W2A4YC104MAT2A](#)
[W2A4ZC103MAT2A](#) [W2A4ZC104MAT2A](#) [W3A41A220KAT2A](#) [W3A41A221KAT2A](#) [W3A41A331KAT2A](#)
[W3A41C103KAT2A](#) [W3A41C103MAT2A](#) [W3A41C222KAT2A](#) [W3A41C471K4T2A](#) [W3A41C472KAT2A](#)
[W3A43A221KAT2A](#) [W3A43C102MAT2A](#) [W3A43C332KAT2F](#) [W3A45A101JAT2F](#) [W3A45A101KAT2A](#)
[W3A45A330KAT2A](#) [W3A45A470KAT2A](#) [W3A45C103KAT2A](#) [W3A45C103MAT2A](#) [W3A45C222KAT2A](#)
[W3A45C333MAT2F](#) [W3A45C471MAT2A](#) [W3A4YC102MAT2A](#) [W3A4YC103MAT2A](#) [W3A4YC104KAT2A](#)
[W3A4YC104MAT2A](#) [W3A45A471KAT2A](#) [W3A45C472MAT2A](#) [W3A45C102MAT2A](#) [W3A45C473MAT2A](#)
[W3A43C332MAT2F](#) [W3A4YC104MAT1A](#) [W3A45A151KAT2A](#) [W2A43C103M4T2A](#) [W3A43C472KAT2A](#)
[W2A4YC222KAT2A](#) [W3A43A181KAT2A](#) [W3A45A100KAT2A](#) [W3A41A151KAT2A](#) [W3A45A220KAT2A](#)
[W2A4YA181KAT2A](#) [W3A45C331KAT2A](#) [W2A2YA101KAT2A](#) [W2A2ZC103MAT2A](#) [W2A2ZC473MAT2A](#)
[W2A21A101KAT2A](#) [W2A23A101KAT2A](#) [W2A23C103MAT2A](#) [W2A25A101KAT2A](#) [W2A25C103MAT2A](#)
[W2A4YA100KAT2A](#) [W2A4YA101JAT2A](#) [W2A4YA101KAT2A](#) [W2A4YA120KAT2A](#) [W2A4YA150KAT2A](#)
[W2A4YA180KAT2A](#) [W2A4YA201KAT2F](#) [W2A4YA220KAT2A](#) [W2A4YA221KAT2A](#) [W2A4YA270KAT2A](#)
[W2A4YA330KAT2A](#) [W2A4YA330KAT4A](#) [W2A4YA680KAT2A](#) [W2A4YC102MAT2A](#) [W2A4YC103MAT2F](#)
[W2A4YC103M4T2A](#) [W2A4YC152KAT2A](#) [W2A4YC183KAT2F](#) [W2A4YC222MAT2F](#) [W2A4YC331KAT2A](#)
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