

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%.

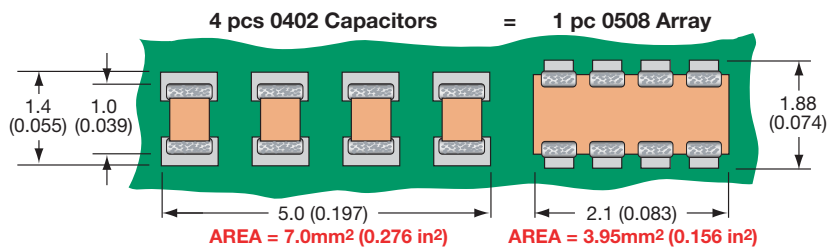
For high volume users of cap arrays using the very latest placement equipment capable of placing 10 components per second, the increase in throughput can be very significant and can have the overall effect of reducing the number of placement machines required to mount components:

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.

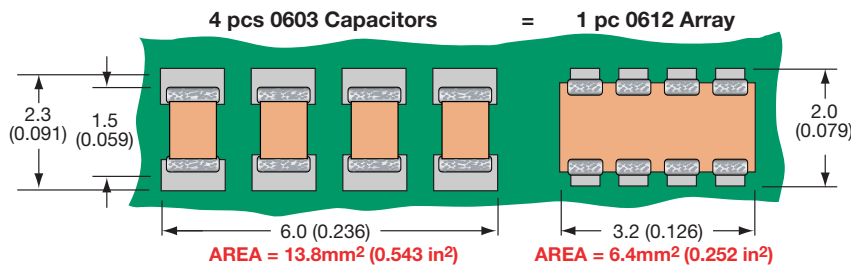
Smaller volume users can also benefit from replacing discrete components with arrays. The total number of placements is reduced thus creating spare capacity on placement machines. This in turn generates the opportunity to increase overall production output without further investment in new equipment.

W2A (0508) Capacitor Arrays



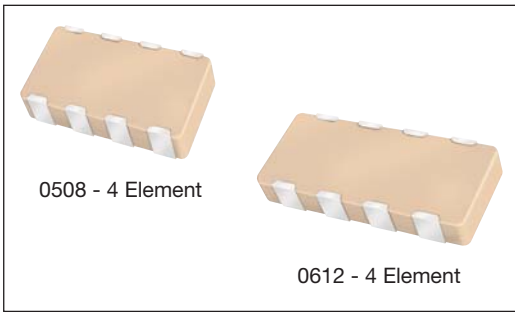
The 0508 4-element capacitor array gives a PCB space saving of over 40% vs four 0402 discretés and over 70% vs four 0603 discrete capacitors.

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 complement 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	No. of Elements	W2 = 0508				W3 = 0612			
		4				4			
	WVDC	16	25	50	100	16	25	50	100
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								

■ = NPO/COG

		X7R												
SIZE	No. of Elements	W2 = 0508				W2 = 0508				W3 = 0612				
		2				4				4				
	WVDC	16	25	50	100	16	25	50	100	10	16	25	50	100
101	Cap 100													
121	(pF) 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	(µF) 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	0.10													
124	0.12													
154	0.15													
224	0.22													

■ = X7R

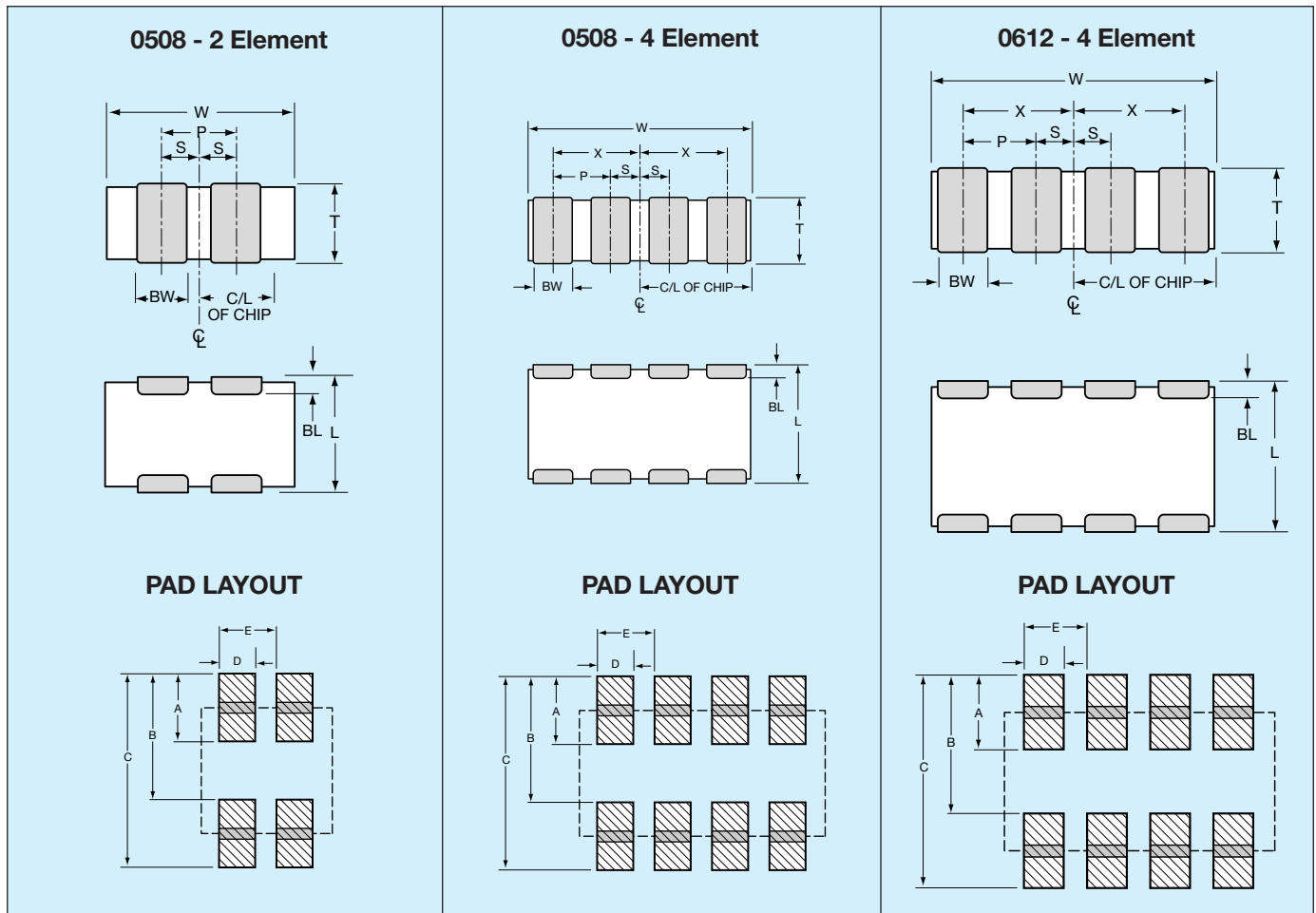
Not RoHS Compliant



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)

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