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 discretes 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 discretes and over 70% vs four 0805 discrete capacitors.

Capacitor Array

Capacitor Array (IPC)

GENERAL DESCRIPTION

AVX is the market leader in the development and manufacture of capacitor arrays. The smallest array option available from AVX, the 0405 2-element device, has been an enormous success in the Telecommunications market. 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.

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. 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.

AVX Capacitor Array - W2A41A*K**
S21 Magnitude

HOW TO ORDER

W	2	A	4	3	C	103	M	A	T	2A
Style W = RoHS L = SnPb	**Case Size** 1 = 0405 2 = 0508 3 = 0612 5 = 0306	**Array**	**Number of Caps**	**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 (4000) 4A = 13" Reel (10000) 2F = 7" Reel (1000)

Not RoHS Compliant

RoHS Compliant

LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

For RoHS compliant products, please select correct termination style

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

Capacitor Array

Capacitance Range – NP0/C0G

SIZE	0405			0508				0508				0612			
# Elements	2			2				4				4			
Soldering	Reflow Only			Reflow/Wave				Reflow/Wave				Reflow/Wave			
Packaging	All Paper			All Paper				Paper/Embossed				Paper/Embossed			
Length mm (in.)	1.00 ± 0.15 (0.039 ± 0.006)			1.30 ± 0.15 (0.051 ± 0.006)				1.30 ± 0.15 (0.051 ± 0.006)				1.60 ± 0.150 (0.063 ± 0.006)			
Width mm (in.)	1.37 ± 0.15 (0.054 ± 0.006)			2.10 ± 0.15 (0.083 ± 0.006)				2.10 ± 0.15 (0.083 ± 0.006)				3.20 ± 0.20 (0.126 ± 0.008)			
Max. Thickness mm (in.)	0.66 (0.026)			0.94 (0.037)				0.94 (0.037)				1.35 (0.053)			
WVDC	16	25	50	16	25	50	100	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															

Capacitor Array

Capacitance Range – X7R/X5R

SIZE	0306				0405					0508						0508						0612					
# Elements	4				2					2						4						4					
Soldering	Reflow Only				Reflow Only					Reflow/Wave						Reflow/Wave						Reflow/Wave					
Packaging	All Paper				All Paper					All Paper						Paper/Embossed						Paper/Embossed					
Length mm (in.)	1.60 ± 0.15 (0.063 ± 0.006)				1.00 ± 0.15 (0.039 ± 0.006)					1.30 ± 0.15 (0.051 ± 0.006)						1.30 ± 0.15 (0.051 ± 0.006)						1.60 ± 0.150 (0.063 ± 0.006)					
Width mm (in.)	0.81 ± 0.15 (0.032 ± 0.006)				1.37 ± 0.15 (0.054 ± 0.006)					2.10 ± 0.15 (0.083 ± 0.006)						2.10 ± 0.15 (0.083 ± 0.006)						3.20 ± 0.20 (0.126 ± 0.008)					
Max. Thickness mm (in.)	0.50 (0.020)				0.66 (0.026)					0.94 (0.037)						0.94 (0.037)						1.35 (0.053)					
WVDC	6	10	16	25	6	10	16	25	50	6	10	16	25	50	100	6	10	16	25	50	100	6	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																											
184 0.18																											
224 0.22																											
274 0.27																											
334 0.33																											
474 0.47																											
564 0.56																											
684 0.68																											
824 0.82																											
105 1.0																											
125 1.2																											
155 1.5																											
185 1.8																											
225 2.2																											
335 3.3																											
475 4.7																											
106 10																											
226 22																											
476 47																											
107 100																											

= Currently available X7R

= Currently available X5R

= Under development X7R, contact factory for advance samples

= Under development X5R, contact factory for advance samples

Automotive Capacitor Array (IPC)

0508 - 4 Element

0612 - 4 Element

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	3	A	4	Y	C	104	K	4	T	2A
Style W = RoHS L = SnPb	**Case Size** 1 = 0405 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 **RoHS compliant	**Packaging & Quantity Code** 2A = 7" Reel (4000) 4A = 13" Reel (10000) 2F = 7" Reel (1000)

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

NP0/C0G

SIZE		0405	0508	0508				0612			
No. of Elements		2	2	4				4			
	WVDC	50	50	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

■ = Under development

X7R / X8R

SIZE		0508				0508				0612					0405
No. of Elements		2				4				4					2
	WVDC	16	25	50	100	16	25	50	100	10	16	25	50	100	16
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

■ = X8R

■ = Under development

Not RoHS Compliant

LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

For RoHS compliant products, please select correct termination style.

PART & PAD LAYOUT DIMENSIONS

millimeters (inches)

0405 - 2 Element

PAD LAYOUT

0612 - 4 Element

PAD LAYOUT

0508 - 2 Element

PAD LAYOUT

0508 - 4 Element

PAD LAYOUT

PART DIMENSIONS

0405 - 2 Element

L	W	T	BW	BL	P	S
1.00 ± 0.15 (0.039 ± 0.006)	1.37 ± 0.15 (0.054 ± 0.006)	0.66 MAX (0.026 MAX)	0.36 ± 0.10 (0.014 ± 0.004)	0.20 ± 0.10 (0.008 ± 0.004)	0.64 REF (0.025 REF)	0.32 ± 0.10 (0.013 ± 0.004)

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

0405 - 2 Element

A	B	C	D	E
0.46 (0.018)	0.74 (0.029)	1.20 (0.047)	0.30 (0.012)	0.64 (0.025)

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)

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
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Данный компонент на территории Российской Федерации

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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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