

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 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

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 (COG) 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**



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/COG



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	1.00 ± 0.15			1.30 ± 0.15				1.30 ± 0.15				1.60 ± 0.150			
	(in.)	(0.039 ± 0.006)			(0.051 ± 0.006)				(0.051 ± 0.006)				(0.063 ± 0.006)			
Width	mm	1.37 ± 0.15			2.10 ± 0.15				2.10 ± 0.15				3.20 ± 0.20			
	(in.)	(0.054 ± 0.006)			(0.083 ± 0.006)				(0.083 ± 0.006)				(0.126 ± 0.008)			
Max. Thickness	mm	0.66			0.94				0.94				1.35			
	(in.)	(0.026)			(0.037)				(0.037)				(0.053)			
WVDC		16	25	50	16	25	50	100	16	25	50	100	16	25	50	100
1R0	1.0															
1R2	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



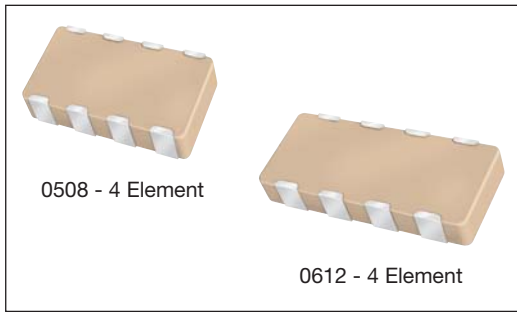
Capacitance Range – X7R/X5R

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	1.60 ± 0.15				1.00 ± 0.15					1.30 ± 0.15					1.30 ± 0.15					1.60 ± 0.150							
	(in.)	(0.063 ± 0.006)				(0.039 ± 0.006)					(0.051 ± 0.006)					(0.051 ± 0.006)					(0.063 ± 0.006)							
Width	mm	0.81 ± 0.15				1.37 ± 0.15					2.10 ± 0.15					2.10 ± 0.15					3.20 ± 0.20							
	(in.)	(0.032 ± 0.006)				(0.054 ± 0.006)					(0.083 ± 0.006)					(0.083 ± 0.006)					(0.126 ± 0.008)							
Max. Thickness	mm	0.50				0.66					0.94					0.94					1.35							
	(in.)	(0.020)				(0.026)					(0.037)					(0.037)					(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	X5R				X7R					X7R					X7R											
121	pF	120	X5R				X7R					X7R					X7R											
151		150	X5R				X7R					X7R					X7R											
181		180	X5R				X7R					X7R					X7R											
221		220	X5R				X7R					X7R					X7R											
271		270	X5R				X7R					X7R					X7R											
331		330	X5R				X7R					X7R					X7R											
391		390	X5R				X7R					X7R					X7R											
471		470	X5R				X7R					X7R					X7R											
561		560	X5R				X7R					X7R					X7R											
681		680	X5R				X7R					X7R					X7R											
821		820	X5R				X7R					X7R					X7R											
102		1000	X5R				X7R					X7R					X7R											
122		1200	X5R				X7R					X7R					X7R											
152		1500	X5R				X7R					X7R					X7R											
182		1800	X5R				X7R					X7R					X7R											
222		2200	X5R				X7R					X7R					X7R											
272		2700	X5R				X7R					X7R					X7R											
332		3300	X5R				X7R					X7R					X7R											
392		3900	X5R				X7R					X7R					X7R											
472		4700	X5R				X7R					X7R					X7R											
562		5600	X5R				X7R					X7R					X7R											
682		6800	X5R				X7R					X7R					X7R											
822		8200	X5R				X7R					X7R					X7R											
103	Cap	0.010	X5R				X7R					X7R					X7R											
123	(µF)	0.012	X5R				X7R					X7R					X7R											
153		0.015	X5R				X7R					X7R					X7R											
183		0.018	X5R				X7R					X7R					X7R											
223		0.022	X5R				X7R					X7R					X7R											
273		0.027	X5R				X7R					X7R					X7R											
333		0.033	X5R				X7R					X7R					X7R											
393		0.039	X5R				X7R					X7R					X7R											
473		0.047	X5R				X7R					X7R					X7R											
563		0.056	X5R				X7R					X7R					X7R											
683		0.068	X5R				X7R					X7R					X7R											
823		0.082	X5R				X7R					X7R					X7R											
104		0.10	X5R				X7R					X7R					X7R											
124		0.12	X5R				X7R					X7R					X7R											
154		0.15	X5R				X7R					X7R					X7R											
184		0.18	X5R				X7R					X7R					X7R											
224		0.22	X5R				X7R					X7R					X7R											
274		0.27	X5R				X7R					X7R					X7R											
334		0.33	X5R				X7R					X7R					X7R											
474		0.47	X5R				X7R					X7R					X7R											
564		0.56	X5R				X7R					X7R					X7R											
684		0.68	X5R				X7R					X7R					X7R											
824		0.82	X5R				X7R					X7R					X7R											
105		1.0	X5R				X7R					X7R					X7R											
125		1.2	X5R				X7R					X7R					X7R											
155		1.5	X5R				X7R					X7R					X7R											
185		1.8	X5R				X7R					X7R					X7R											
225		2.2	X5R				X7R					X7R					X7R											
335		3.3	X5R				X7R					X7R					X7R											
475		4.7	X5R				X7R					X7R					X7R											
106		10	X5R				X7R					X7R					X7R											
226		22	X5R				X7R					X7R					X7R											
476		47	X5R				X7R					X7R					X7R											
107		100	X5R				X7R					X7R					X7R											

- = 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)



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	3	A	4	Y	C	104	K	4	T	2A
Style	Case Size	Array	Number of Caps	Voltage	Dielectric	Capacitance Code (In pF)	Capacitance Tolerance	Failure Rate	Terminations	Packaging & Quantity Code
W = RoHS L = SnPb	1 = 0405 2 = 0508 3 = 0612			Z = 10V Y = 16V 3 = 25V 5 = 50V 1 = 100V	A = NP0 C = X7R F = X8R	Significant Digits + Number of Zeros e.g. 10 μ F=106	*J = \pm 5% *K = \pm 10% M = \pm 20%	4 = Automotive	T = Plated Ni and Sn** Z = FLEXITERM®** B = 5% min lead X = FLEXITERM® with 5% min lead	2A = 7" Reel (4000) 4A = 13" Reel (10000) 2F = 7" Reel (1000)

****RoHS compliant**

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

NP0/COG												
SIZE	0405	0508	0508				0612					
No. of Elements	2	2	4				4					
WVDC	50	50	16	25	50	100	16	25	50	100		
1R0 1R2 1R5	Cap 1.0 (pF) 1.2 1.5											
1R8 2R2 2R7	1.8 2.2 2.7											
3R3 3R9 4R7	3.3 3.9 4.7											
5R6 6R8 8R2	5.6 6.8 8.2											
100 120 150	10 12 15											
180 220 270	18 22 27											
330 390 470	33 39 47											
560 680 820	56 68 82											
101 121 151	100 120 150											
181 221 271	180 220 270											
331 391 471	330 390 470											
561 681 821	560 680 820											
102 122 152	1000 1200 1500											
182 222 272	1800 2200 2700											
332 392 472	3300 3900 4700											
562 682 822	5600 6800 8200											

Light blue = NP0/COG
Dark blue = Under development

SIZE	X7R														X8R
	0508				0508				0612				0405		
	2				4				4				2		
No. of Elements	16				25				50				100		
WVDC	16	25	50	100	16	25	50	100	10	16	25	50	100	16	
101 121 151	Cap 100 (pF) 120 150														
181 221 271	180 220 270														
331 391 471	330 390 470														
561 681 821	560 680 820														
102 122 152	1000 1200 1500														
182 222 272	1800 2200 2700														
332 392 472	3300 3900 4700														
562 682 822	5600 6800 8200														
103 123 153	Cap 0.010 (μ F) 0.012 0.015														
183 223 273	0.018 0.022 0.027														
333 393 473	0.033 0.039 0.047														
563 683 823	0.056 0.068 0.082														
104 124 154	0.10 0.12 0.15														
224	0.22														

Light blue = X7R
Dark blue = X8R
Dark grey = Under development

Not RoHS Compliant



For RoHS compliant products, please select correct termination style.

PART & PAD LAYOUT DIMENSIONS

millimeters (inches)



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)

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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