

## 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.

# 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

<b>W</b>	<b>2</b>	<b>A</b>	<b>4</b>	<b>3</b>	<b>C</b>	<b>103</b>	<b>M</b>	<b>A</b>	<b>T</b>	<b>2A</b>
<b>Style</b> W = RoHS L = SnPb	<b>Case Size</b> 1 = 0405 2 = 0508 3 = 0612 5 = 0306	<b>Array</b>	<b>Number of Caps</b>	<b>Voltage</b> 6 = 6V Z = 10V Y = 16V 3 = 25V 5 = 50V 1 = 100V	<b>Dielectric</b> A = NP0 C = X7R D = X5R	<b>Capacitance Code</b> 2 Sig Digits + Number of Zeros	<b>Capacitance Tolerance</b> J = ±5% K = ±10% M = ±20%	<b>Failure Rate</b> A = Commercial 4 = Automotive	<b>Termination Code</b> T = Plated Ni and Sn** Z = FLEXITERM®** B = 5% min lead X = FLEXITERM® with 5% min lead	<b>Packaging &amp; Quantity Code</b> 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



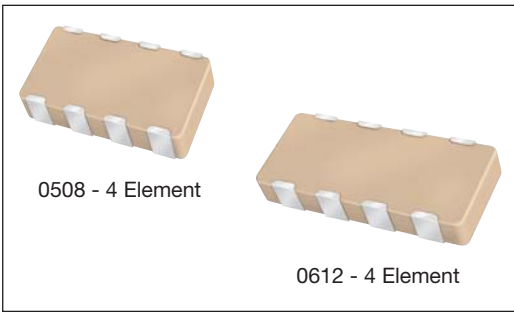
## Capacitance Range – X7R/X5R

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 (in.)					mm (in.)					mm (in.)					mm (in.)					mm (in.)									
Width	mm (in.)					mm (in.)					mm (in.)					mm (in.)					mm (in.)									
Max. Thickness	mm (in.)					mm (in.)					mm (in.)					mm (in.)					mm (in.)									
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																														
121 100																														
151 120																														
181 150																														
221 180																														
271 220																														
331 270																														
391 330																														
471 390																														
561 470																														
681 560																														
821 680																														
102 820																														
122 1000																														
152 1200																														
182 1500																														
222 1800																														
272 2200																														
332 2700																														
392 3300																														
472 3900																														
562 4700																														
682 5600																														
822 6800																														
103 Cap																														
123 0.010																														
153 0.012																														
183 0.015																														
223 0.018																														
273 0.022																														
333 0.027																														
393 0.033																														
473 0.039																														
563 0.047																														
683 0.056																														
823 0.068																														
104 0.082																														
124 0.10																														
154 0.12																														
184 0.15																														
224 0.18																														
274 0.22																														
334 0.27																														
474 0.33																														
564 0.47																														
684 0.56																														
824 0.68																														
105 0.82																														
125 1.0																														
155 1.2																														
185 1.5																														
225 1.8																														
335 2.2																														
475 3.3																														
106 4.7																														
226 10																														
476 22																														
107 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)



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

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

		NP0/COG											
SIZE		0405		0508				0612					
No. of Elements		2	2	4				4					
	WVDC	50	50	16	25	50	100	16	25	50	100		
1R0	Cap 1.0 (pF)												
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												
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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 (µF)												
123	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												

NP0/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 (pF)														
121	120														
151	150														
181	180														
221	220														
271	270														
331	330														
391	390														
471	470														
561	560														
681	680														
821	820														
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103	Cap 0.010 (µF)														
123	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



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 <sup>+0.25</sup> <sub>-0.08</sub> (0.007 <sup>+0.010</sup> <sub>-0.003</sub> )	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 «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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