

## 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%.

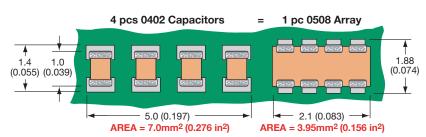
A reduction of 40 placements increases throughput by 18%.

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.

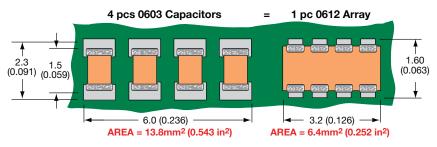
Smaller volume users can also benefit from replacing discrete components with arrays. The total number of placements is reduced thus creating spare capacity on placement machines. This in turn generates the opportunity to increase overall production output without further investment in new equipment.



### 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.

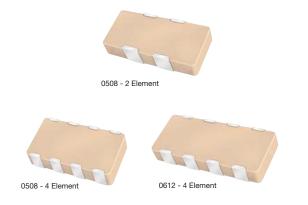
#### W3A (0612) Capacitor Arrays



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.





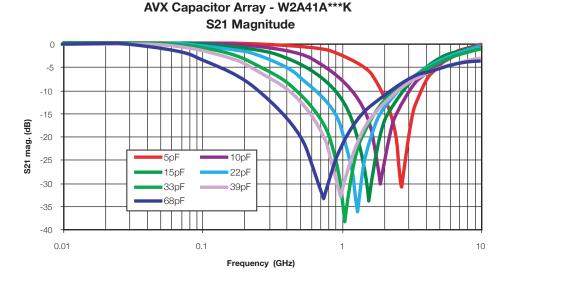


### **GENERAL DESCRIPTION**

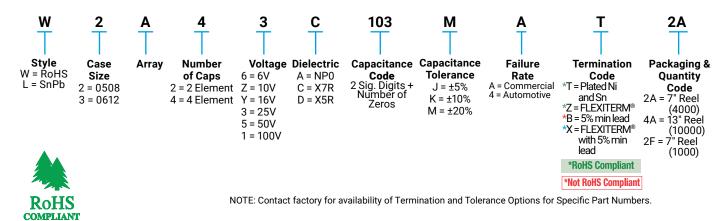
AVX is the market leader in the development and manufacture of capacitor arrays. The array family of products also includes the 0612 4-element device as well as 0508 2-element and 4-element series, all of which have received widespread acceptance in the marketplace.

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.



#### **HOW TO ORDER**







# Elements         4         4           Solderinq         Reflow/Wave         Reflow/Wave           Packaqinq         Paper/Embosed         Paper/Embosed           Length         mm         1.30 ± 0.15         1.60 ± 0.150           Width         (n.0)         (0.051 ± 0.006)         (0.053 ± 0.005)           Width         mm         0.94         1.35           Thickness         (n.0)         (0.033 ± 0.006)         (0.053)           WDC         16         25         50         16         25         50           1R0         Cap         1.0         (0.053)         (0.053)         (0.053)           WDC         16         25         50         16         25         50           1R0         Cap         1.0         1.0         1.0         1.0         1.0         1.0           1R2         (pF)         1.2         1.6         1.5         1.5         1.6         1.5         1.5           1R8         1.8         8.8         1.6         1.6         1.5         1.5         1.5         1.5           1R0         1.8         1.6         1.6         1.5         1.5         1.5         1.5		SIZE		W	2 = 05	08	W3 = 0612					
Solderinq         Reflow/Wave         Reflow/Wave           Packaginq         Paper/Embosed         Paper/Embosed           Length         mm         1.30 to 15         1.60 to 150 $(0.063 \pm 0.006)$ Widt         mm $(0.051 \pm 0.006)$ $(0.023 \pm 0.006)$ $(0.126 \pm 0.008)$ Max         mm $(0.013)$ $(0.126 \pm 0.008)$ $(0.126 \pm 0.008)$ Max         mm $(0.023 \pm 0.006)$ $(0.126 \pm 0.008)$ $(0.126 \pm 0.008)$ Max         mm $(0.023 \pm 0.006)$ $(0.126 \pm 0.008)$ $(0.126 \pm 0.008)$ Max         mm $(0.023 \pm 0.006)$ $(0.126 \pm 0.008)$ $(0.126 \pm 0.008)$ Max         mm $(0.023 \pm 0.006)$ $(0.126 \pm 0.008)$ $(0.126 \pm 0.008)$ Max         file         25         50         16         25         50           Max         file         25         50         16         26 $(0.126 \pm 0.008)$ $(0.126 \pm 0.008)$ Reflex/Max         file         25         50         16 $(0.126 \pm 0.008)$ $(0.126 \pm 0.008)$ Reflex/Max         file         25         50         16	# El	emen	ts		4		4					
				Re	flow/Wa	ave	Reflow/Wave					
$\begin{array}{                                    $				Pap	er/Embo	ssed						
Wdm         (n.) $(0.083 \pm 0.006)$ $(0.126 \pm 0.008)$ Max.         mm $0.94$ $0.037$ $0.033$ WVDC         16         25         50         16         25         50           IR0         Cap         1.0         2         50         16         25         50           IR2         (pF)         1.2         16         2         50         16         25         50           IR8         1.8         1.8         1.8         1.8         1.8         1.9         1.0         1.0         1.0           2R7         2.7         2.7         2.7         2.7         2.7         1.0         1.0         1.0           3R3         3.3         3.9         3.9         3.9         1.0         1.0         1.0         1.0           100         10         1.0         1.0         1.0         1.0         1.0         1.0         1.0           110         18         1.0         1.0         1.0         1.0         1.0         1.0           120         12         120         1.0         1.0         1.0 <th1.0< th=""> <th1.0< th=""> <th1.0< th=""></th1.0<></th1.0<></th1.0<>	Length mm			(0.	051 ± 0.0	06)	1.60 ± 0.150					
Thickness(in.)(0.037)(0.053)INCCap1.02.550162.5501R0Cap1.01R2(pF)1.21R81.82R72.73R33.3 </td <td>Width</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td colspan="6">3.20 ± 0.20</td>	Width						3.20 ± 0.20					
WVDC1625501625501R0Cap1.0IR<	-											
1R0       Cap       1.0			(in.)									
1R2       (pF)       1.2				16	25	50	16	25	50			
1R5       1.5												
1R8       1.8		(p⊦)										
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         390       39         470       47         560       56         688       68         820       82         101       100         121       120         121       120         151       150         181       180         181       180         181       180         181       180         181       180         181       180         181       180         181       180         181       680         681       680         681       680     <												
2R7       2.7												
3R3       3.3       3.9  .												
3R9       3.9												
4R7 $4.7$ <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>												
SR6       5.6       6       6       6       6       6       6       6       6       6       6       6       6       6       6       6       6       6       7 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>												
6R8       6.8       6.8       6.8       6.8       6.8         8R2       8.2       6.8       6.8       6.8       6.8         100       10       10       10       10       10       10         120       12       10												
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         391       390         391       390         471       470         561       560         681       680         821       820         102       1000         122       1200         152       1500         182       1800         222       2200         272       2700         332       3300         332       3300         332       3300         332       3300												
$\begin{array}{ c c c c c c } 150 & 15 & & & & & & & & & & & & & & & & & $												
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	120		12									
220       22       27       27       27         330       33       33       33       33         390       39       39       39       39         560       56       56       56       56         680       68       56       56       56         101       100       100       101       100         121       120       101       100       101         151       150       101       100       101         181       180       101       100       101         151       150       101       100       101         151       150       101       100       101         171       270       101       101       101         102       1000       101       101       101         102       1000       101       101       101         1102       1000       101       101       101         1122       1200       101       101       101         1122       1200       101       101       101         1122       1200       101       101       101	150		15									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	180		18									
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         122       1200         122       2200         271       2700         331       330         332       3300         332       3300         332       3300         332       3300         332       3300         332       3300         332       3300         332       3300         332       3000         332       3000         332       3000         332	220		22									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	270											
$\begin{array}{c c c c c c c c } 470 & 47 & & & & & & & & & & & & & & & & & $												
560         56	1											
680       68       68       68       68       68         820       82       68       68       68       68         101       100       68       68       68       68         121       120       68       68       68       68       68         181       180       68 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>												
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         332       3300         332       3300         332       660         682       6800												
$\begin{array}{ c c c c c c } 121 & 120 & & & & & & & & & & & & & & & & & & &$												
151       150       Image: constraint of the sector												
181       180       221       220         271       270       271         331       330       391         391       390       471         471       470												
221       220       271       270       270         331       330       390       391       390         471       470       470       470       470         561       560       561       560       561         681       680       561       560       561         102       1000       100       100       100         152       1500       100       152       1500         182       1800       100       100       100         222       2200       1000       100       100         332       3300       100       100       100       100         332       3300       100       100       100       100       100         332       3300       100       100       100       100       100       100         332       3300       100												
271       270       270         331       330       200         391       390       200         471       470       200         561       560       200         681       680       200         102       1000       200         152       1500       200         182       1800       222         222       2200       272         332       3300       332         3320       3900       23900         472       4700       200         682       6800       200												
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												
471       470       Image: Constraint of the sector												
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	391		390									
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												
821     820       102     1000       122     1200       152     1500       182     1800       222     2200       272     2700       332     3300       392     3900       472     4700       562     5600       682     6800												
102         1000           122         1200           152         1500           182         1800           222         2200           272         2700           332         3300           392         3900           472         4700           562         5600           682         6800	1											
122       1200         152       1500         182       1800         222       2200         272       2700         332       3300         392       3900         472       4700         562       5600         682       6800						ļ						
152       1500            182       1800             222       2200              332       3300               392       3900												
182       1800         222       2200         272       2700         332       3300         392       3900         472       4700         562       5600         682       6800												
222     2200       272     2700       332     3300       392     3900       472     4700       562     5600       682     6800												
272       2700												
332     3300       392     3900       472     4700       562     5600       682     6800												
392     3900       472     4700       562     5600       682     6800												
472         4700           562         5600           682         6800												
562         5600           682         6800												
682 6800												
822 8200												
	822		8200									



= Supported Values



# **Capacitor Array** Capacitance Range – X7R



# SIZE # Elements W2 = 0508 2 W2 = 0508 4

SIZE W2 = 0508							W2 = 0508							W3 = 0612						
#	Elemer	nts				2						4	-					1		
Soldering		Reflow/Wave				Reflow/Wave							Reflow/Wave							
Packaqinq			All Paper				Paper/Embossed						Paper/Embossed							
Lengt	:h	mm $1.30 \pm 0.15$						1.30 ± 0.15 (0.051 ± 0.006)						$1.60 \pm 0.150$ (0.063 ± 0.006)						
		(in.) $(0.051 \pm 0.006)$							± 0.00 ± 0.15				((			6)				
Width mm (in.)			2.10 ± 0.15 (0.083 ± 0.006)							± 0.15			3.20 ± 0.20 (0.126 ± 0.008)							
Max.		mm		(		.94	/0)			(0	0.	94	•/			(	1.	35	•)	
Thick	ness	(in.)				037)						)37)					(0.0	53)		
	WVDC		6	10	16	25	50	100	6	10	16	25	50	100	6	10	16	25	50	100
101	Cap	100																		
121 151	(PF)	120 150																		
181		180																		
221		220																		
271		270																		
331		330																		
391 471		390 470																		
561		560																		
681		680																		
821		820																		
102		1000																		
122 152		1200																		
182		1500 1800																		
222		2200																		
272		2700																		
332		3300																		
392		3900																		
472 562		4700 5600																		
682		6800																		
822		8200																		
103	Сар	0.010																		
123	(µF)	0.012																		
153 183		0.015											<u> </u>							
223		0.013																		
273		0.027																		
333		0.033																		
393		0.039																		
473 563		0.047																		
683		0.050																		
823		0.082																		
104		0.10																		
124		0.12																		
154 184		0.15																		$\vdash$
224		0.18																		
274		0.27																		
334		0.33																		
474		0.47																		
564 684		0.56					-													$\vdash$
824		0.08																		
105		1.0																		
125		1.2																		
155		1.5																		
185		1.8 2.2																<u> </u>		$\vdash$
335		2.2 3.3																		
475		4.7																		
106		10																		
226		22																		
476		47 100																		
1 10/		100						I	L	I	L		L				1			



单击下面可查看定价,库存,交付和生命周期等信息

# >>AVX