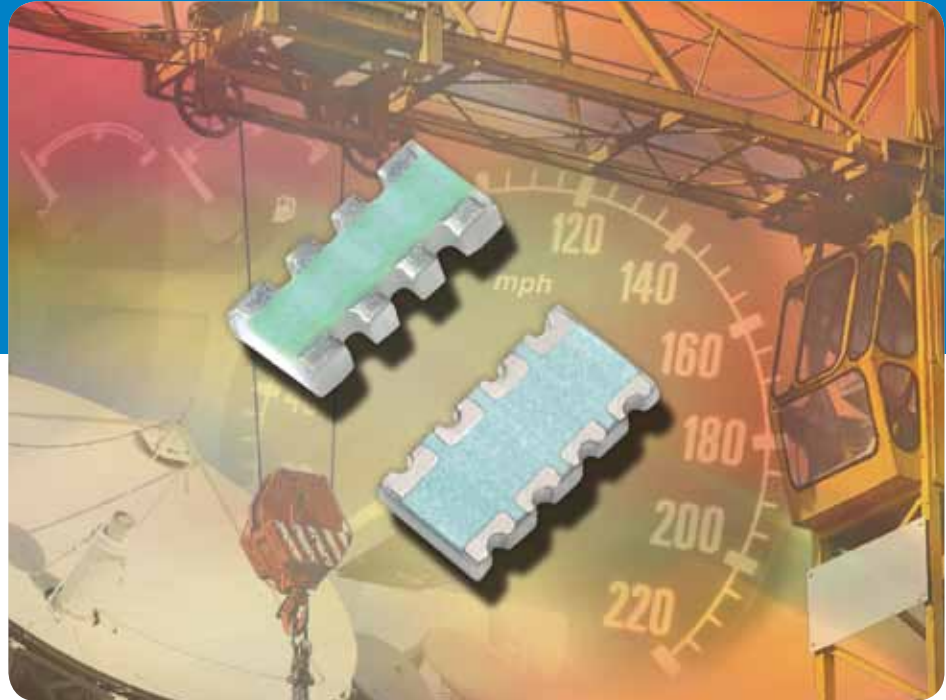




# THIN FILM CHIP RESISTOR ARRAYS

ACAC 0612 and ACAS 0612 Precision Series



## Precision Thin Film Chip Resistor Arrays

### KEY BENEFITS

- Four resistors in one package
- Two pairs or four equal resistor values
- TCR tracking down to 10 ppm/K ( $\pm 5$  ppm/K)
- Tolerance matching down to 0.1 % ( $\pm 0.05$  %)
- Pure Sn termination on Ni barrier layer
- Compliant to RoHS directive 2002/95/EC

### APPLICATIONS

- Voltage dividers
- Feedback circuits
- Signal conditioning
- Measurement bridges
- DC/DC converters
- Power supplies

### Precision Thin Film Chip Resistor Array

#### FEATURES

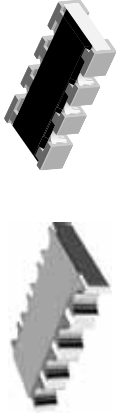
- Advanced thin film technology
- Two pairs or four equal resistor values
- TCR tracking down to 10 ppm/K ( $\pm 5$  ppm/K)
- Tolerance matching down to 0.1 % ( $\pm 0.05$  %)
- Pure Sn termination on Ni barrier layer
- Compliant to RoHS directive 2002/95/EC



RoHS COMPLIANT

#### APPLICATIONS

- Precision analogue circuits
- Voltage divider
- Feedback circuits
- Signal conditioning



ACAC 0612 (concave terminations) and ACAS 0612 (convex terminations) thin film chip resistor arrays combine the proven reliability of precision thin film chip resistor products with the advantages of chip resistor arrays. Defined tolerance matching and TCR tracking make this product perfectly suited for applications with outstanding requirements towards stable fixed resistor ratios. A small package enables the design of high density circuits in combination with reduction of assembly costs. Four equal resistor values or two pairs are available.

TECHNICAL SPECIFICATIONS	
DESCRIPTION	ACAC 0612, ACAS 0612
EIA size	0612
Metric size	RR 1632M
Configuration, isolated	4 x 0603
Design:	AE TP
All Equal	
Two Pairs	
Resistance values	47.0 to 221 k $\Omega$ (1)
Absolute tolerance	$\pm 0.5$ %; $\pm 0.25$ %
Tolerance matching (2)	0.5 % (equivalent to $\pm 0.25$ %) 0.25 % (equivalent to $\pm 0.125$ %) 0.1 % (equivalent to $\pm 0.05$ %)
Absolute temperature coefficient	$\pm 50$ ppm/K; $\pm 25$ ppm/K
Temperature coefficient tracking (2)	50 ppm/K (equivalent to $\pm 25$ ppm/K) 25 ppm/K (equivalent to $\pm 12.5$ ppm/K) 15 ppm/K (equivalent to $\pm 7.5$ ppm/K) 10 ppm/K (equivalent to $\pm 5$ ppm/K)
Max. resistance ratio $R_{max}/R_{min}$	1:5
Rated dissipation, $P_0$ (3)	0.1 W 0.3 W 0.75 V 125 °C (4)
Element	75 V
Package, 4 x 0603	
Operating voltage	
Permissible film temperature	
Insulation voltage ( $U_{ins}$ ) against ambient and between isolated resistors, continuous	

#### Notes

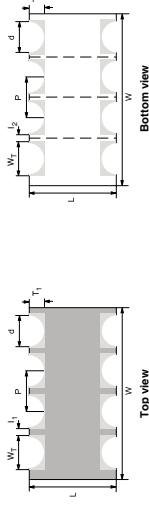
- Resistance values to be selected from E24 and E96
- In applications with defined resistance ratios like voltage dividers or feedback circuits, an array with a defined tracking of e.g. 10 ppm/K is required to replace discrete resistors with a temperature coefficient of resistance of  $\pm 5$  ppm/K. Furthermore, in order to achieve the same tolerance of  $\pm 0.05$  % of individual resistors, an array requires a matching of 0.1 %.
- The power dissipation on the resistor generates a temperature rise against the local ambient, depending on the heat flow support of the printed-circuit board (thermal resistance). The rated dissipation applies only if the permitted film temperature is not exceeded. These resistors do not feature a limited lifetime when operated within the permissible limits.
- For higher max. film temperature and AEC-Q200 qualification please refer to data sheet ACAS 0606 AT, ACAS 0612 AT - Precision available on our web site at [www.vishay.com/doc28720](http://www.vishay.com/doc28720)

MAXIMUM RESISTANCE CHANGE AT RATED POWER (1)	
DESCRIPTION	ACAC 0612, ACAS 0612
Configuration, isolated	4 x 0603
Operation mode	Precision
Standard	Standard
Rated power per element, $P_0$	0.1 W
Rated power per packaging, $P_{70}$	0.3 W
Film temperature	125 °C
Operating voltage, $U_{max}$ , ACDC	75 V
Max. resistance change at $P_0$	$\pm 0.1$ % $\pm 0.25$ %
$\Delta R/R$ max., after:	
1000 h	$\pm 0.1$ % (2)
8000 h	$\pm 0.25$ % (3)
Max. relative resistance change (relative drift) at $P_0$	
1000 h	0.1 % (2)
8000 h	0.25 % (4)

#### Notes

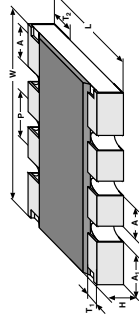
- Figures are given for arrays with equal values, design type AE
- Equivalent to  $\pm 0.05$  %
- Equivalent to  $\pm 0.125$  %
- Equivalent to  $\pm 0.25$  %

#### DIMENSIONS ACAC 0612



DIMENSIONS - Chip resistor array, mass and relevant physical dimensions											
TYPE	L (mm)	W (mm)	H (mm)	P (mm)	W <sub>t</sub> (mm)	T <sub>1</sub> (mm)	T <sub>2</sub> (mm)	d (mm)	h <sub>1</sub> (mm)	h <sub>2</sub> (mm)	MASS (mg)
ACAC 0612	1.6 $\pm$ 0.15	3.2 $\pm$ 0.15	0.55 $\pm$ 0.1	0.8 $\pm$ 0.1	0.5 $\pm$ 0.15	0.3 $\pm$ 0.15	0.4 $\pm$ 0.1	0.3 $\pm$ 0.1	min. 0.15	min. 0.25	9.6

#### DIMENSIONS ACAS 0612



DIMENSIONS - Chip resistor array, mass and relevant physical dimensions										
TYPE	L (mm)	W (mm)	H (mm)	P (mm)	A <sub>1</sub> (mm)	A <sub>2</sub> (mm)	T <sub>1</sub> (mm)	T <sub>2</sub> (mm)	MASS (mg)	
ACAS 0612	1.5 $\pm$ 0.15	3.2 $\pm$ 0.15	0.45 $\pm$ 0.1	0.8 $\pm$ 0.1	0.6 $\pm$ 0.1	0.4 $\pm$ 0.1	0.3 $\pm$ 0.15	0.4 $\pm$ 0.15	6.6	

Build Vishay into your Design

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For technical questions, contact [tf3resistors@vishay.com](mailto:tf3resistors@vishay.com)