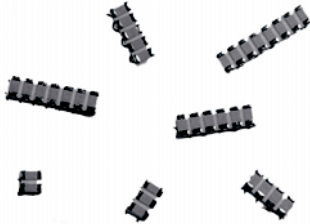


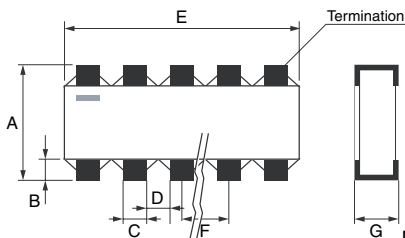
High Precision Resistor Arrays



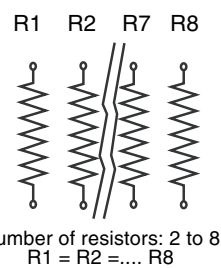
PRA arrays can be used in most applications requiring a matched pair (or set) of resistor elements. The networks provide 1 ppm/°C TCR tracking, a ratio tolerance as tight as 0.01 % and outstanding stability. They are available in 1 mm, 1.35 mm and 1.82 mm pitch.

DIMENSIONS

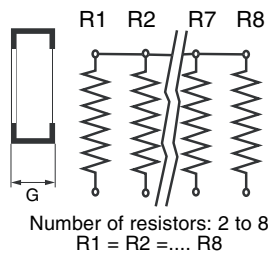
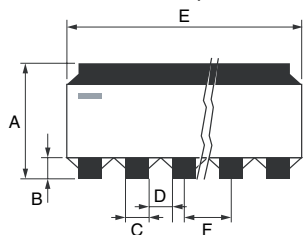
I: Independent resistors



Electrical Diagram



C: One common point N resistors



FEATURES

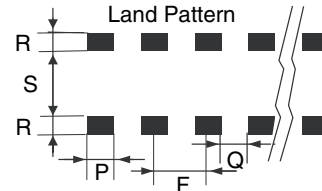
- High stability passivated nichrome resistive layer 0.02 % on ratio, 1000 h at Pn at 70 °C
- Tight TCR (10 ppm/°C) and TCR tracking (to 1 ppm/°C)
- Very low noise < 35 dB and voltage coefficient < 0.01 ppm/V
- Ratio tolerance to 0.01 % ($R \geq 200 R$)
- Pre-tinned terminations over nickel barrier
- Lead (Pb)-free available



RoHS*
COMPLIANT

TYPICAL PERFORMANCE

	ABS	TRACKING
TCR	10 ppm/°C	2 ppm/°C
	ABS	RATIO
TOL	0.1 %	0.05 %



DIM.	PRA100		PRA 135		PRA 182	
	mm	mil	mm	mil	mm	mil
A	1.6 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$	63	1.85 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$	72	3.0 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$	118
B	0.4 $\begin{smallmatrix} +0.2 \\ -0.2 \end{smallmatrix}$	16	0.4 $\begin{smallmatrix} +0.2 \\ -0.2 \end{smallmatrix}$	16	0.4 $\begin{smallmatrix} +0.2 \\ -0.2 \end{smallmatrix}$	16
C	0.65 $\begin{smallmatrix} +0.15 \\ -0.15 \end{smallmatrix}$	25.5	1.05 $\begin{smallmatrix} +0.15 \\ -0.15 \end{smallmatrix}$	41	1.3 $\begin{smallmatrix} +0.35 \\ -0.15 \end{smallmatrix}$	51
D	0.25	10	0.25	10	0.25	10
E ¹⁾	$E = (N \times F) \pm 0.2 \text{ mm}$		$E = (N \times F) \pm 8 \text{ mil}$			
F	1	40	1.35	53.1	1.82	72
G	0.38 $\begin{smallmatrix} +0.2 \\ -0 \end{smallmatrix}$	15	0.38 $\begin{smallmatrix} +0.2 \\ -0 \end{smallmatrix}$	15	0.38 $\begin{smallmatrix} +0.2 \\ -0 \end{smallmatrix}$	15
P	0.7	27.5	1.05	41.3	1.52	59.8
Q	0.3	12	0.3	12	0.3	12
R	1	40	1	40	1	40
S	0.6	23.5	0.8	31.5	1.8	70.8

¹⁾ E depends on number of resistors

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: PRA100I4-5K62BWB T28

GLOBAL MODEL	CONFIGURATION	NUMBER OF RESISTORS	VALUE	ABS. TOL.	RATIO TOL.	TERMINATION	TAPE	SPECIAL
PRA100 PRA135 PRA182	I: Independent C: Common	2 to 8	Decimal R or K For different ohmic values on a given network a specific part number is issued (e.g. CNWxxx)	B = 0.1 % D = 0.5 %	B = 0.1 % W = 0.05 % P = 0.02 % L = 0.01 %	B: SnPb over nickel barrier N: SnAg over nickel barrier G: Gold over nickel barrier	B: lead bearing version N and G: Lead (Pb)-free/ RoHS version	

Historical Part Number example: PRA 100 I4 5K62 0.1 % 0.05 % TR R0028

* Pb containing terminations are not RoHS compliant, exemptions may apply

**STANDARD ELECTRICAL SPECIFICATIONS**

TEST		SPECIFICATIONS	CONDITION
Resistance Range:	PRA 100	100 Ω to 200 k Ω	
	PRA 135	100 Ω to 300 k Ω	
	PRA 182	100 Ω to 1 M Ω	
Tolerance:	Absolute	$\pm 0.5\%$ to $\pm 0.1\%$	
	Ratio	0.1 %, 0.05 %, 0.02 %, 0.01 % ($R \geq 200\text{ R}$)	
TCR:	Absolute	$\pm 10\text{ ppm}/^\circ\text{C}$	- 40 $^\circ\text{C}$ + 125 $^\circ\text{C}$
	Ratio	2 ppm/ $^\circ\text{C}$ (1 ppm/ $^\circ\text{C}$ on request)	- 40 $^\circ\text{C}$ + 125 $^\circ\text{C}$
Power Rating:	PRA 100	100 mW per resistor	at + 70 $^\circ\text{C}$
	PRA 135	100 mW per resistor	at + 70 $^\circ\text{C}$
	PRA 182	100 mW per resistor	at + 70 $^\circ\text{C}$
Operating Temperature Range*		- 55 $^\circ\text{C}$ to + 155 $^\circ\text{C}$	
Noise		$\leq -35\text{ dB}$	
Voltage Coefficient		$\leq 0.01\text{ ppm/V}$	
Limiting Voltage:	PRA 100	35 V	
	PRA 135	75 V	
	PRA 182	100 V	

* For temperature up to 200 $^\circ\text{C}$, please consult factory**MECHANICAL SPECIFICATIONS**

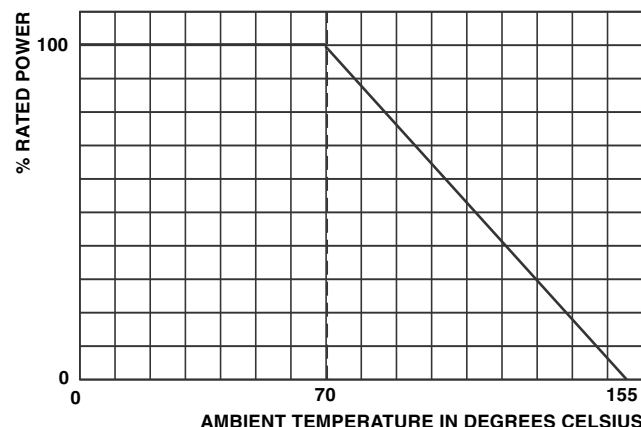
Substrate	Alumina
Technology	Thin Film
Film	Nickel chromium with mineral passivation
Terminations	B type: SnPb over nickel barrier
	N type: SnAg over nickel barrier
	G type: Gold over nickel barrier

SPECIAL FEATURES

Resistance values can be different on a given network ($R_{\text{max.}}/R_{\text{min.}}$ as high as 300). Tooling charges might be required depending on the ohmic values in the same network. Please, consult VISHAY SFERNICE for ohmic values, tolerances and also temperature coefficient (e.g. $\pm 1\text{ ppm}/^\circ\text{C}$) outside the standard range.

PACKAGING

Several types of packaging are available: waffle-pack and tape and reel.

POWER RATING**MARKING**

On the primary package, printed information includes VISHAY S.A. trademark series and model, schematic number of resistors, ohmic value, absolute tolerance, ratio tolerance, type of termination: B tinned over nickel barrier.

PERFORMANCE

TESTS	CONDITIONS CECC REQUIREMENTS	DRIFTS	
		ABSOLUTE PER (Typical Values)	RATIO
Overload	2.5 $U_n/2\text{ s}$	0.05 % $R_n + 0.05\text{ }\Omega$	0.01 % R_n
Climatic Sequences	- 55 $^\circ\text{C}$ + 155 $^\circ\text{C}/5$ moisture cycles	0.1 % $R_n + 0.05\text{ }\Omega$	0.01 % R_n
Thermal Shock	- 55 $^\circ\text{C}$ + 155 $^\circ\text{C}/5$ cycles 30'	0.05 % $R_n + 0.05\text{ }\Omega$	0.01 % R_n
Load Life	1000 h/ P_n at + 70 $^\circ\text{C}$	0.1 % $R_n + 0.05\text{ }\Omega$	0.02 % R_n
Resistance to Solder Heat	260 $^\circ\text{C}/10\text{ s}$	0.05 % $R_n + 0.05\text{ }\Omega$	0.01 % R_n
Moisture Resistance	0.01 P_n at + 40 $^\circ\text{C}$ 93 % RH	0.1 % $R_n + 0.05\text{ }\Omega$	0.01 % R_n
High Temperature Storage	1000 h/no load at + 155 $^\circ\text{C}$	0.1 % $R_n + 0.05\text{ }\Omega$	0.02 % R_n

 R_n : nominal resistance



Notice

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