

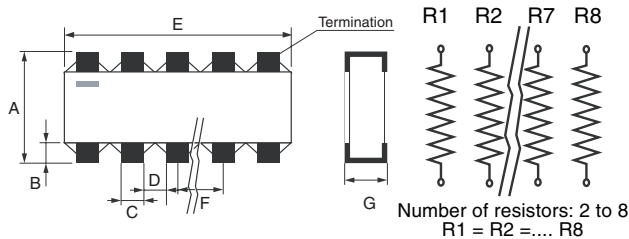
## High Precision Resistor Arrays



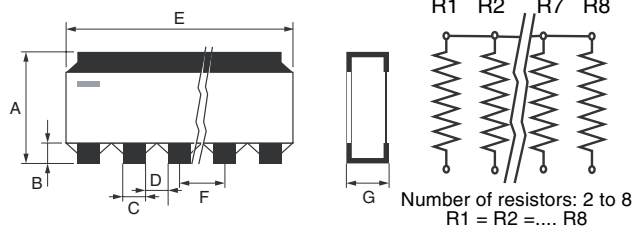
PRA arrays can be used in most applications requiring a matched pair (or set) of resistor elements. The networks provide 1 ppm/°C TCR tracking, a ratio tolerance as tight as 0.01 % and outstanding stability. They are available in 1 mm, 1.35 mm and 1.82 mm pitch.

### DIMENSIONS

I: Independent resistors



C: One common point N resistors



### FEATURES

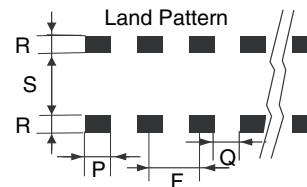
- High stability passivated nichrome resistive layer 0.02 % on ratio, 1000 h at Pn at 70 °C
- Tight TCR (10 ppm/°C) and TCR tracking (to 1 ppm/°C)
- Very low noise < 35 dB and voltage coefficient < 0.01 ppm/V
- Ratio tolerance to 0.01 % (R ≥ 200 R)
- Pre-tinned terminations over nickel barrier
- Lead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



RoHS\* COMPLIANT

### TYPICAL PERFORMANCE

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



DIM.	PRA100		PRA 135		PRA 182	
	mm	mil	mm	mil	mm	mil
A	1.6 <sup>+0.2</sup> <sub>-0.1</sub>	63	1.85 <sup>+0.2</sup> <sub>-0.1</sub>	72	3.0 <sup>+0.2</sup> <sub>-0.1</sub>	118
B	0.4 <sup>+0.2</sup> <sub>-0.2</sub>	16	0.4 <sup>+0.2</sup> <sub>-0.2</sub>	16	0.4 <sup>+0.2</sup> <sub>-0.2</sub>	16
C	0.65 <sup>+0.15</sup> <sub>-0.15</sub>	25.5	1.05 <sup>+0.15</sup> <sub>-0.15</sub>	41	1.3 <sup>+0.35</sup> <sub>-0.15</sub>	51
D	0.25	10	0.25	10	0.25	10
E <sup>1)</sup>	E = (N × F) ± 0.2 mm			E = (N × F) ± 8 mil		
F	1	40	1.35	53.1	1.82	72
G	0.38 <sup>+0.2</sup> <sub>-0</sub>	15	0.38 <sup>+0.2</sup> <sub>-0</sub>	15	0.38 <sup>+0.2</sup> <sub>-0</sub>	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

<sup>1)</sup> E depends on number of resistors

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: PRA100I4-5K62BWBT28

P R A 1 0 0 I 4 - 5 K 6 2 B W B T 2 8

GLOBAL MODEL	CONFIGURATION	NUMBER OF RESISTORS	VALUE	ABS. TOL.	RATIO TOL.	TERMINATION	PACKAGING	OPTION
PRA100 PRA135 PRA182	I: Independent C: Common	2 to 8	Decimal R or K	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	Blank = Waffle Pack *T = Tape & Reel	Leave blank if no option

For different ohmic values on a given network a specific part number is used:

CNW	1368
GLOBAL MODEL	REFERENCE

Historical Part Number example: PRA 100 I 4 5K62 0.1 % 0.05 % TR R0028

PRA100	I	4	5K62	0.1 %	0.05 %	TR	R0028
HISTORICAL MODEL	CONFIGURATION	NUMBER OF RESISTORS	OHMIC VALUE	ABS. TOL.	RATIO TOL.	PACKAGING	OPTION

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

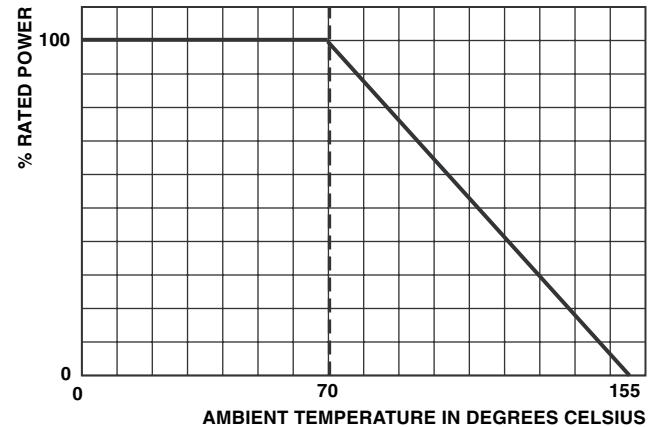


STANDARD ELECTRICAL SPECIFICATIONS			
TEST		SPECIFICATIONS	CONDITION
Resistance Range:	PRA 100	100 Ω to 200 kΩ	
	PRA 135	100 Ω to 300 kΩ	
	PRA 182	100 Ω to 1 MΩ	
Tolerance:	Absolute	± 0.5 % to ± 0.1 %	
	Ratio	0.1 %, 0.05 %, 0.02 %, 0.01 % (R ≥ 200 R)	
TCR:	Absolute	± 10 ppm/°C	- 40 °C + 125 °C
	Ratio	2 ppm/°C (1 ppm/°C on request)	- 40 °C + 125 °C
Power Rating:	PRA 100	100 mW per resistor	at + 70 °C
	PRA 135	100 mW per resistor	at + 70 °C
	PRA 182	100 mW per resistor	at + 70 °C
Operating Temperature Range*		- 55 °C to + 155 °C	
Noise		≤ - 35 dB	
Voltage Coefficient		≤ 0.01 ppm/V	
Limiting Voltage:	PRA 100	35 V	
	PRA 135	75 V	
	PRA 182	100 V	

\* For temperature up to 200 °C, please consult factory

MECHANICAL SPECIFICATIONS	
Substrate	Alumina
Technology	Thin Film
Film	Nickel chromium with mineral passivation
Terminations	<b>B type:</b> SnPb over nickel barrier
	<b>N type:</b> SnAg over nickel barrier
	<b>G type:</b> Gold over nickel barrier

**POWER RATING**



**SPECIAL FEATURES**

Resistance values can be different on a given network (R max./R 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. ± 1 ppm/°C) outside the standard range.

**PACKAGING**

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

**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 Un/2 s	0.05 % Rn + 0.05 Ω	0.01 % Rn
Climatic Sequences	- 55 °C + 155 °C/5 moisture cycles	0.1 % Rn + 0.05 Ω	0.01 % Rn
Thermal Shock	- 55 °C + 155 °C/5 cycles 30'	0.05 % Rn + 0.05 Ω	0.01 % Rn
Load Life	1000 h/Pn at + 70 °C	0.1 % Rn + 0.05 Ω	0.02 % Rn
Resistance to Solder Heat	260 °C/10 s	0.05 % Rn + 0.05 Ω	0.01 % Rn
Moisture Resistance	0.01 Pn at + 40 °C 93 % RH	0.1 % Rn + 0.05 Ω	0.01 % Rn
High Temperature Storage	1000 h/no load at + 155 °C	0.1 % Rn + 0.05 Ω	0.02 % Rn

Rn: nominal resistance



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