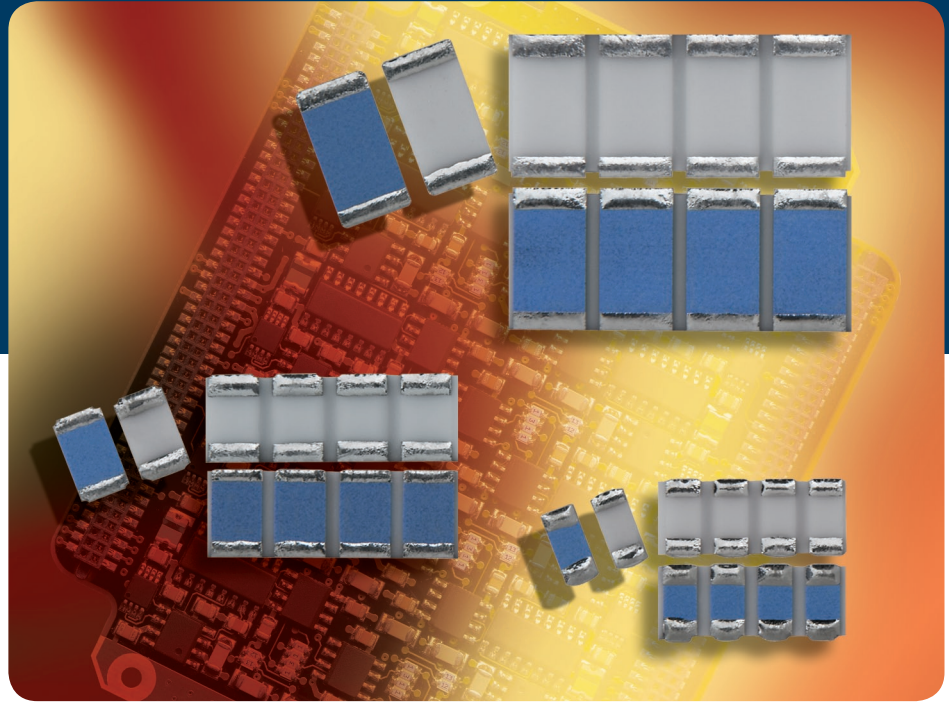




RESISTOR ARRAYS

PRA



High-Precision Resistor Arrays

KEY BENEFITS

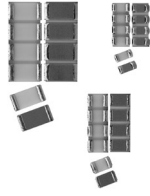
- Unique ultra-stable resistive layer: 0.02 % drift on ratio after 1000 hours at nominal power at 70 °C
- Outstanding contacts between resistive and conductive layers
- Special patterning and laser trimming
- Registered to ESCC - EPPL
- Less than 0.03 % combined relative error. Within a set of resistors, combined error is the sum of:
 - the initial ratio tolerancing at room temperature
 - the reversible drift in the range (– 40 °C to + 125 °C)
 - the load life drift after 2000 hours at 70 °C under Pn
- RoHS available

APPLICATIONS

- Applications requiring precision sets of resistor elements
- Instrumentation
- Calibration
- Data conversion

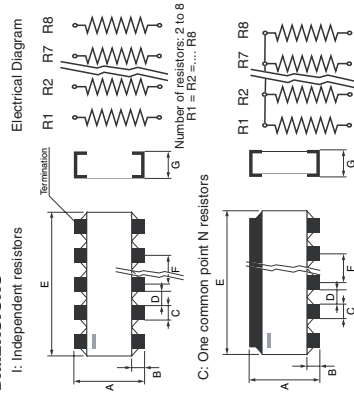
Datasheet is available on our web site at www.vishay.com
for PRA - <http://www.vishay.com/doc?53033>

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.

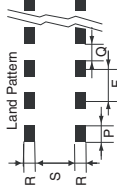
DIMENSIONS



- #### 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-terminated terminations over nickel barrier
 - Lead (Pb)-free available

TYPICAL PERFORMANCE

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



DIM.	PRA 100	PRA 135	PRA 182
A	1.6 ^{+0.2} _{-0.1}	63	1.85 ^{+0.2} _{-0.1}
B	0.4 ^{-0.2} _{-0.1}	16	0.4 ^{-0.2} _{-0.1}
C	0.65 ^{+0.15} _{-0.15}	25.5	1.05 ^{+0.15} _{-0.15}
D	0.25	10	0.25
E ¹⁾	E = (N x F) ± 0.2 mm		
F	1	40	1.35
G	0.38 ^{-0.2} _{-0.1}	15	0.38 ^{-0.2} _{-0.1}
P	0.7	27.5	1.05
Q	0.3	12	0.3
R	1	40	1
S	0.6	23.5	0.8

¹⁾ E depends on number of resistors

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: PRA100A-5K62BWBT28

P	R	A	1	0	0	1	4	-	5	K	6	2	B	W	B	T	2	8
GLOBAL MODEL	CONFIGURATION	NUMBER OF RESISTORS	VALUE	ABS. TOL.	RATIO TOL.	TERMINATION	TAPE	SPECIAL										
PRA100	I: Independent	2 to 8	Decimal R or K	B = 0.1 % D = 0.5 %	B = 0.1 % W = 0.05 % L = 0.01 %	B: Sn/Pb 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											

For different number is issued on a specific part (e.g. CNVX00)

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

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

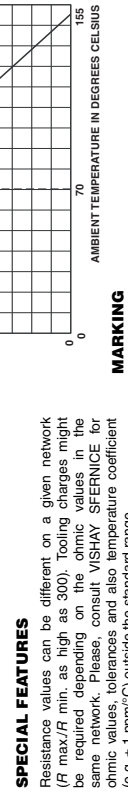
STANDARD ELECTRICAL SPECIFICATIONS

TEST	PRA 100	PRA 135	PRA 182	CONDITION
Resistance Range:	100 Ω to 200 kΩ	100 Ω to 300 kΩ	100 Ω to 1 MΩ	
Tolerance:	± 0.5 % to ± 0.1 %			
TCR:	± 10 ppm/°C			
Power Rating:	100 mW per resistor			
Operating Temperature Range*	-55 °C to +155 °C			
Voltage Coefficient	≤ 0.01 ppm/V			
Limiting Voltage:	35 V			
Power Rating	75 V			
Power Rating	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 type: Sn/Pb 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 max/R min as high as 300). Tolerances 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: wafer-pack and tape and reel.

PERFORMANCE

TESTS	CONDITIONS	CECC REQUIREMENTS	ABSOLUTE PER (Typical Values)	DRIFTS	RATIO
Overload	2.5 U _I /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
Lead Life	1000 h/Pn at +70 °C		0.1 % Rn + 0.05 Ω		0.02 % Rn
Resistance to Solder Heat	260 °C/T10 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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