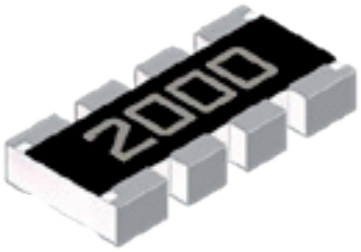
Resistors

Precision Chip Array

OBSOLETE

PCA Series



- Precision thin film technology
- Four elements in 1206 footprint
- Tight tolerance down to ±0.1%
- Low TCR down to ±10ppm/°C
- Better TCR tracking and tolerance matching than using discrete parts

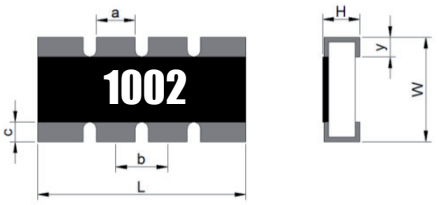
RoHS All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Electrical Data

		PCA164
Power rating per resistor @70°C	watts	0.0625
Limiting element voltage	volts	50
Maximum overload voltage	volts	100
Resistance range	ohms	24R9 – 100K
Resistance tolerance	%	±1, ±0.5, ±0.25, ±0.1,
Matching tolerance	%	±0.5, ±0.25, ±0.1
TCR	ppm/°C	±50, ±25, ±15, ±10
Tracking TCR	ppm/°C	±50, ±25, ±15
Standard values		E96
Ambient temperature range	°C	-55 to +155

Physical Data

Dimensions in mm and weight in mg								
Type	**L**	**W**	**H**	**a**	**b**	**c**	**y**	**Wt. nom**
PCA164	3.20 ±0.15	1.60 ±0.15	0.55 ±0.1	0.50 ±0.15	0.80 ±0.05	0.30 ±0.15	0.30 ±0.15	9.0



Marking

4-digit marking is used on the component. E.g. 1002 = 10kΩ. All relevant information is recorded on the primary package or reel.

Solvent Resistance

The component is resistant to all normal industrial cleaning solvents suitable for printed circuits.

Construction

A thin-film material is selectively deposited on an alumina substrate together with metallic contacts at each end of the resistor. The unadjusted resistors are heat treated to give the required TCR and stability, and then a precisely controlled laser trim process adjusts the resistance value. Epoxy protection is applied and wrap-around terminations are added and plated with nickel then tin. Each resistor is measured immediately before packing into tape.

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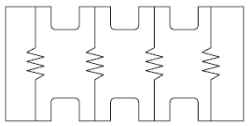
Performance Data

Test	Method	±ΔR%	
		Typical	Maximum
Load life	1000 hours rated power @ 70°C	0.05	0.15
Humidity	1000 hours @40°C, 90-95% RH	0.05	0.25
Short term overload	Lesser of 6.25 x rated power & max. overload voltage for 5 secs	0.01	0.1
Temperature cycle	100 cycles-55°C to +150°C	0.05	0.25
Dry heat	1000 hours @ 125°C	0.10	0.25
Resistance to solder heat	260 ±5°C for 10secs	0.02	0.2
Solderability	245 ±5°C for 3secs	95% min. coverage	

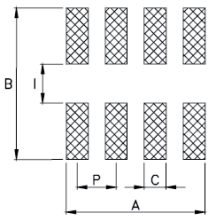
Tolerance & TCR Availability

Tolerance Availability			TCR Availability		
Absolute Tol.	**Matching Tol.**	**Resistance Range**	**Absolute TCR**	**Tracking TCR**	**Resistance Range**
±0.1%	Unspecified	24R9- 100K	±10ppm/°C	Unspecified	24R9- 2K0
	±0.1%			±15ppm/°C	
±0.25%	Unspecified		±15ppm/°C	Unspecified	
	±0.25%			±15ppm/°C	
	±0.1%		±25ppm/°C	Unspecified	24R9- 100K
±0.5%	Unspecified			±25ppm/°C	
	±0.5%			±15ppm/°C	
	±0.25%		±50ppm/°C	Unspecified	
±1%	Unspecified			±50ppm/°C	
	±0.5%			±25ppm/°C	

Equivalent Circuit Diagram



Recommended Land Pattern



Dimensions mm	A	B	C	I	P
PCA164	3.10	2.85	0.45	0.80	0.80

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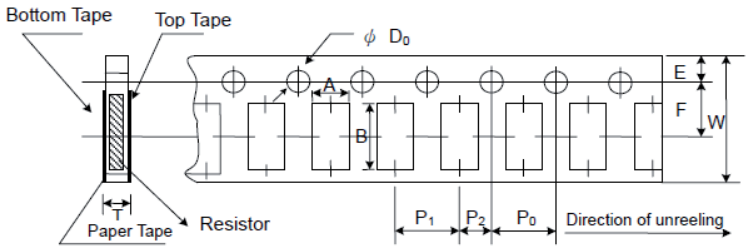
Packaging

PCA164 is packed in 8mm paper tape on a 7 inch reel of 5000 pieces.



Dimensions mm	A	B	W	E	F	P0	P1	P2	ØD0	T
PCA164	1.95 ±0.1	3.50 ±0.1	8.0 ±0.2	1.75 ±0.1	3.5 ±0.05	4.0 ±0.1	4.0 ±0.05	2.0 ±0.05	1.55 ±0.05	0.85 ±0.1

Ordering Procedure

Example: PCA164CD-4K75CBT5 (PCA164 with TCR of 50ppm/°C absolute and 25ppm/°C tracking, 4.75 kilohms, tolerance of 0.25% absolute and 0.1% ratio, 5000 reel, Pb-free)

P	C	A	1	6	4	C	D	-	4	K	7	5	C	B	T	5
1						2	3		4				5	6	7	

1 Type	2 Absolute TCR	3 Tracking TCR[1]	4 Value	5 Absolute Tolerance	6 Ratio Tolerance[1]	7 Packing
PCA164	T = ±10ppm/°C	Y = ±15ppm/°C	3/4 characters R = ohms K = kilohms	B = ±0.1%	B = ±0.1%	T5 = 5000/reel
	Y = ±15ppm/°C	D = ±25ppm/°C		C = ±0.25%	C = ±0.25%	
	D = ±25ppm/°C	C = ±50ppm/°C		D = ±0.5%	D = ±0.5%	
	C = ±50ppm/°C			F = ±1%		

Note 1 – Optional characters. See Tolerance and TCR Availability table for valid combinations.