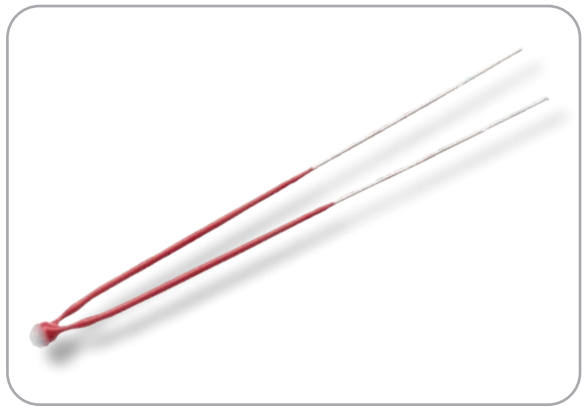
THERMOMETRICS
A COMMITMENT TO EXCELLENCE

Type NKA

Automotive
NTC Chip Thermistors



Description

Thermometrics Type NKA NTC Chip Thermistors are optimized for automotive applications and high volume assembly with Sn-coated Alloy 52 leads and alternative epoxy, HTF1 silicone, and CR1 FKM coatings.

Features

- Tested to AEC Q200
- Designed for accurate temperature measurement, control and compensation
- Tight tolerances on resistance and B value
- Operation up to 170°C with excellent stability
- Small body diameter
- Fast response
- Coating option up to 29mm
- High thermal shock resistance
- Automotive/Aerospace fluids resistance
- Water immersion (CR1)
- Flexible – HTF1/CR1 coated leads can be formed
- Insulation Resistance: 500Vd.c. (1kV - CR1)
- Available on bandolier to IEC 286-2
- Compliance: RoHS 2011/65/EU, REACH

Applications

- Automotive - EV, EGR, TMAP, OAT, HVAC
- White Goods

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Type NKA Specifications

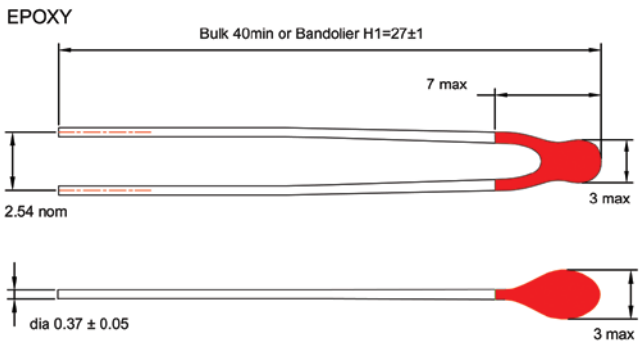
Specification Data	
Minimum Operating Temperature	-40°C
Maximum Operating Temperature	Epoxy 155°C, HTF1 170°C, CR1 190°C
Thermal Time Constant	10 - 15s (cooling) 2.4s (ambient change)
Dissipation Factor	2.2mW/K
Mass	0.18g
Packing / MOQ	1000/box (loose) 2000 min/reel

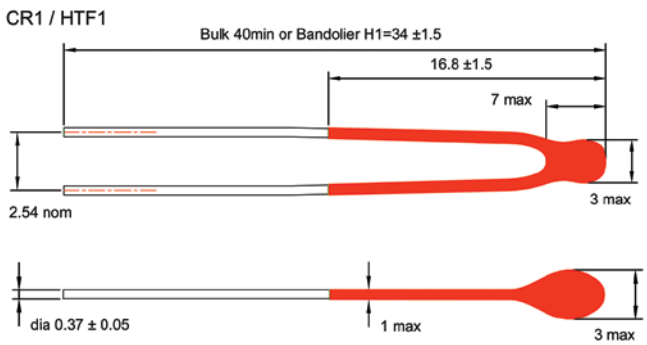
Options

- Other resistance values within the ranges shown
- Alternative reference temperatures: 0°C to 100°C
- Bulk packed or bandoliered up to H=45mm
- Lead materials: Steel/Alloy52/Cu
- Coatings: Epoxy (standard), HTF1, CR1 (Materials 1, 4A only)
- Color-coded tip
- Contact Amphenol for specific application requirements.

See Table on page 4 for standard resistance values and coding.

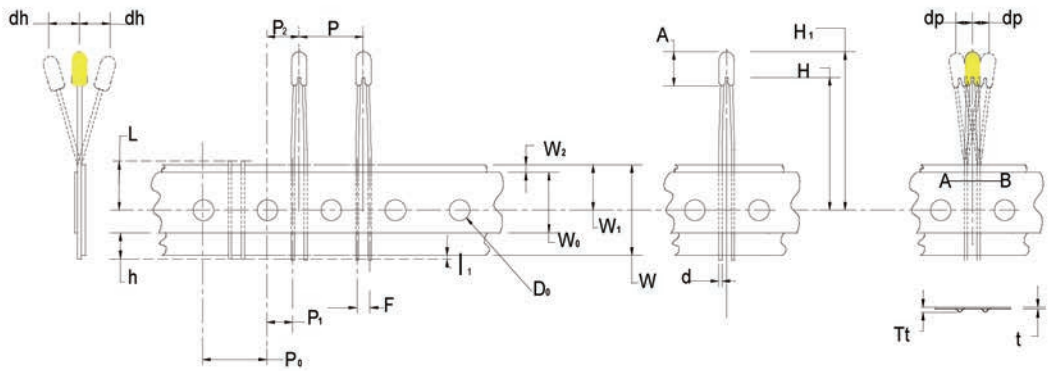
Typical Dimensions (mm)





Note: NKA272 head dia 3.5mm max

Bandolier Schematic



Products with 2.54mm Lead Spacing

Normal Feeding Direction

Type NKA Bandolier Specifications

Item	Symbol	Value (mm)
TOTAL BAND THICKNESS	t	0.7 ± 0.2
MAXIMUM BAND THICKNESS Including component lead/splices	Tt	1.5 MAXIMUM
CARRIER TAPE WIDTH	W	18 + 1.0 / - 0.5
ADHESION TAPE WIDTH The hold-down tape shall not protrude beyond either edge of the carrier tape	W0	6.0 MINIMUM
POSITION OF ADHESION TAPE Gap between upper edges of carrier tape and hold-down tape	W2	3.0 MAXIMUM
SPROCKET HOLE POSITION	W1	9.0 ± 0.5
SPROCKET HOLE DIAMETER	D0	4.0 ± 0.2
PITCH OF COMPONENT	P	12.7 ± 1.0
SPROCKET HOLE PITCH	P0	12.7 ± 0.3
PITCH TOLERANCE OVER ANY 20 PITCHES		± 1.0
WIRE POSITION Distance between the ordinate and the first lead of the following component in the direction of unreeling or feeding (valid from upper edge of the tape to the seating plane)	P1	5.08 ± 0.7
HOLE CENTER TO COMPONENT CENTER	P2	6.35 ± 1.3
IN-PLANE COMPONENT DEVIATION Maximum deviation of the component body in the tape plane (from the nominal position)	dp	± 1.3
FRONT TO REAR DEVIATION The maximum lateral deviation of the component from the nominal position measured at the bottom center of the component body. Maximum alignment deviation of the leads (valid from the upper edge of the tape to the seating plane) when dh is taken as zero, shall be 0.2mm. This dimension must remain in limits after the device has been cropped from the bandolier.	dh	± 1.3
WIRE SPACING At upper edge of tape	F	2.5 ± 0.5
WIRE DIAMETER	d	0.37 ± 0.05
SEATING HEIGHT Distance between the abscissa and the seating plane of the component body with straight leads	H	See H1
HEAD HEIGHT Distance between the abscissa and the top of the component body	H1	Epoxy 27±1 HTF1/CR1 34±1.5
WIRE PROTRUSION (Adhesive tape) Protrusion of wires beyond the lower side of the adhesive tape	h	5 MAXIMUM
WIRE PROTRUSION (Carrier) Protrusion of wires beyond the lower side of the carrier tape	l1	NO PROTRUSION PERMITTED
CUT WIRE LENGTH For cut-out components the length of the residual leads beyond the upper edge of the carrier tape measured from the abscissa	L	12 Nom
COMPONENT HEAD LENGTH	A	7 max

Type NKA Standard Range Resistance Values

(Other values available upon request)

R25 Ω	Material System	B Value 25/85°C K	Maximum Operating Temp[1] °C (°F)	Code R25°C ± 1%	Code R25°C ± 2%	Code R25°C ± 3%	Code R25°C ± 5%	Code R25°C ± 10%
500	2	3540 ± 1%	155 (311)	NKA501C2*1	NKA501C2*2	NKA501C2*3	NKA501C2*5	NKA501C*R10
500	2A	3627 ± 1%	155 (311)	NKA501C2A*1	NKA501C2A*2	NKA501C2A*3	NKA501C2A*5	NKA501C2A*10
500	7	3977± 1%	155 (311)	NKA501C7*1	NKA501C7*2	NKA501C7*3	NKA501C7*5	NKA501C7*10
1000	2	3540 ± 1%	155 (311)	NKA102C2*1	NKA102C2*2	NKA102C2*3	NKA102C2*5	NKA102C2*10
1000	2A	3627 ± 1%	155 (311)	NKA102C2A*1	NKA102C2A*2	NKA102C2A*3	NKA102C2A*5	NKA102C2A*10
1000	7	3977± 1%	155 (311)	NKA102C7*1	NKA102C7*2	NKA102C7*3	NKA102C7*5	NKA102C7*10
2000	2	3540 ± 1%	155 (311)	NKA202C2*1	NKA202C2*2	NKA202C2*3	NKA202C2*5	NKA202C2*10
2000	2A	3627 ± 1%	155 (311)	NKA202C2A*1	NKA202C2A*2	NKA202C2A*3	NKA202C2A*5	NKA202C2A*10
2000	7	3977± 1%	155 (311)	NKA202C7*1	NKA202C7*2	NKA202C7*3	NKA202C7*4	NKA202C7*10
2700	1	3977 ± 0.75%	155 (311)	NKA272C1*1	NKA272C1*2	NKA272C1*3	NKA272C1*5	NKA272C1*10
5000	4A	3436 ± 1%	155 (311)	NKA502C4A*1	NKA502C4A*2	NKA502C4A*3	NKA502C4A*5	NKA502C4A*10
5000	1	3977 ± 0.75%	155 (311)	NKA502C1*1	NKA502C1*2	NKA502C1*3	NKA502C1*5	NKA502C1*10
10000	4A	3436 ± 1%	155 (311)	NKA103C4A*1	NKA103C4A*2	NKA103C4A*3	NKA103C4A*5	NKA103C4A*10
10000	5	3740 ± 1%	155 (311)	NKA103C5*1	NKA103C5*2	NKA103C5*3	NKA103C5*5	NKA103C5*10
10000	1	3977 ± 0.75%	155 (311)	NKA103C1*1	NKA103C1*2	NKA103C1*3	NKA103C1*5	NKA103C1*10
12000	5	3740 ± 1%	155 (311)	NKA123C5*1	NKA123C5*2	NKA123C5*3	NKA123C5*5	NKA123C5*10
30000	8	3977± 1%	155 (311)	NKA303C8*1	NKA303C8*2	NKA303C8*3	NKA303C8*5	NKA303C8*10
50000	8	3977± 1%	155 (311)	NKA503C8*1	NKA503C8*2	NKA503C8*3	NKA503C8*5	NKA503C8*10

1. Epoxy 155°C, HTF1 170°C, CR1 170°C (Material 1 190°C)

Replace * in the table codes shown above as follows:

Loose-packed ..... R

Bandoliered ..... B

Coating Suffix

Epoxy ..... no suffix

CR1 (ceramic materials 1, 4A only) C

HTF1.....H

Example Coding

NKA103C1R3C (loose pack, ±3% tolerance, CR1 coating)

See separate tables for resistance - temperature data.

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