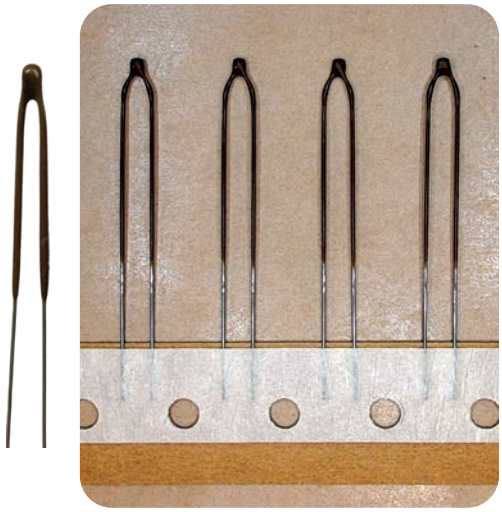
THERMOMETRICS
A COMMITMENT TO EXCELLENCE

Type CR1

Harsh Environment NTC Chip Thermistors



Description

Thermometrics Type CR1 NTC Chip Thermistors consist of NK Type NTC Thermistors, which have Tin (Sn) coated Alloy 52 leads, with a high performance acid and moisture resistant coating. They are ideal for harsh environment applications and high volume assembly.

Features

- AEC Q200 Rev D Qualified (Material Types: 1, 4A, 9A)
- Performance up to 190°C with excellent stability
- Small body diameter
- Fast response - Lead Material: Alloy 52 NiFe
- High thermal shock resistance
- Harsh environment fluid-resistance
- Water immersion, silver migration resistance
- Flexible – Coated leads can be formed
- Insulation resistance to 1kV d.c.
- Designed for accurate temperature measurement, control and compensation
- Tight tolerances on resistance and B value
- Available on bandolier to IEC 286-2 RoHS 2011/65/EU / REACH compliant

Applications

- Automotive
- HVAC
- Battery
- White goods
- Marine
- Aerospace
- Military
- Industrial
- Healthcare

Amphenol
Advanced Sensors

Type CR1 - Specifications

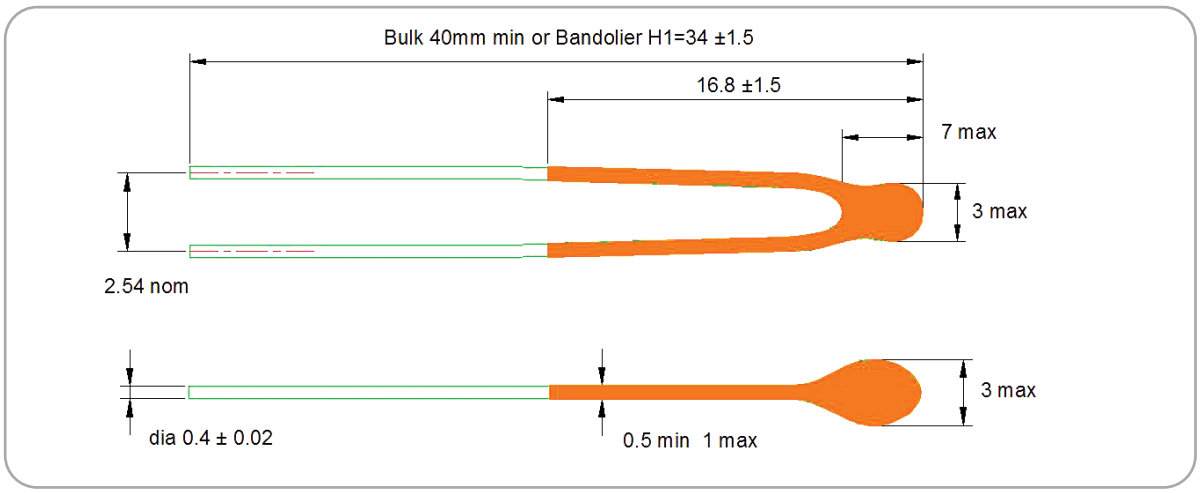
Specification Data	
Minimum Operating Temp:	-40°C
Performance up to:	190°C
Thermal Time Constant:	15s (cooling) 2.4s (ambient change)
Dissipation Factor:	2.2mW/K
Mass:	0.18g
Packing:	1000/box 2000/reel

Options

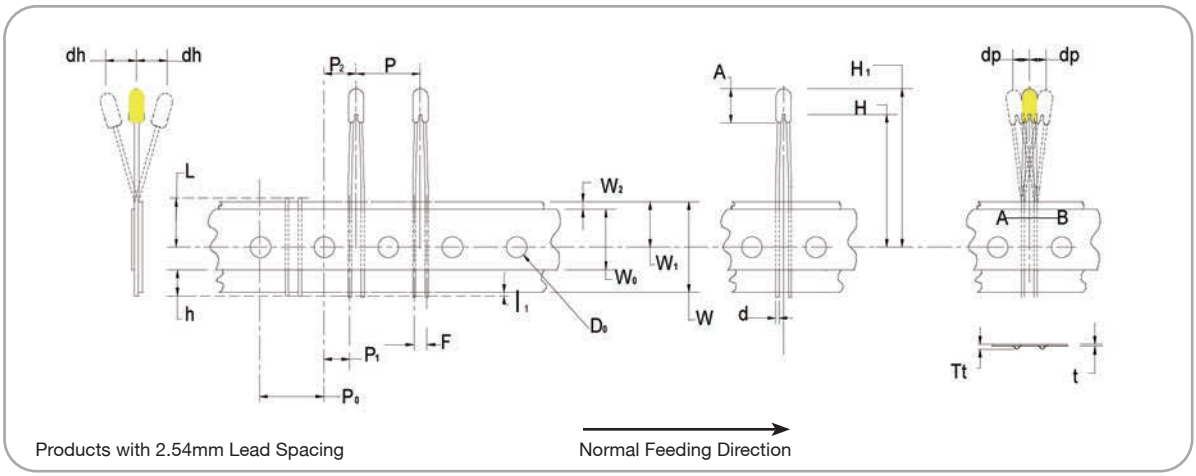
- Other resistance values and B values within the ranges shown
- Alternative reference temperatures: 0°C to 100°C
- Bulk packed or bandolier up to H_1 = 48mm
- Total Length: Bulk up to 45mm max
  - Resin Length: Up to 29.5mm max
- Contact Amphenol for specific application requirements.

* *See Table on page 4 for standard resistance values.*

Typical Dimensions (mm)



Bandolier Schematic



Type CR1 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	± 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	± 3
WIRE SPACING At upper edge of tape	F	2.5 ± 0.5
WIRE DIAMETER	d	0.4 ± 0.02
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	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	5 max

NKA Standard Range Resistance Values

R25 Ω	Material System	B Value 25/85°C K	Maximum# Operating Temp. °C (°F)	Code R25°C ± 1%	Code R25°C ± 2%	Code R25°C ± 3%	Code R25°C ± 5%	Code R25°C ± 10%
5000	4A	3436 ±1%	170 (338)	NKA502C4A*1C	NKA502C4A*2C	NKA502C4A*3C	NKA502C4A*5C	NKA502C4A*10C
10000	4A	3436 ±1%	170 (338)	NKA103C4A*1C	NKA103C4A*2C	NKA103C4A*3C	NKA103C4A*5C	NKA103C4A*10C
2000	9A	3535 ±1%	170 (338)	NKA202C9A*1C	NKA202C9A*2C	NKA202C9A*3C	NKA202C9A*5C	NKA202C9A*10C
2700	1	3977 ±0.75%	170 (338)	NKA272C1*1C	NKA272C1*2C	NKA272C1*3C	NKA272C1*5C	NKA272C1*10C
5000	1	3977 ±0.75%	170 (338)	NKA502C1*1C	NKA502C1*2C	NKA502C1*3C	NKA502C1*5C	NKA502C1*10C
10000	1	3977 ±0.75%	170 (338)	NKA103C1*1C	NKA103C1*2C	NKA103C1*3C	NKA103C1*5C	NKA103C1*10C

*Other resistance values available upon request. Contact Amphenol for details.

Replace * in the table codes shown above as follows:

Loose-packed ..... R

Bandoliered ..... B

See separate tables for resistance - temperature data.

Amphenol

Advanced Sensors

www.amphenol-sensors.com

AAS-920-645J - 09/2020