

NTC Thermistors

Assembly products

NTCGP/NTCDP series

Issue date: September 2012

- All specifications are subject to change without notice.
 - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
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NTC Thermistors

NTCGP, DP Series(Lead Type)

Conformity to RoHS Directive

ASSEMBLY PRODUCTS

PRODUCT IDENTIFICATION

NTC (1) ○ P (2) □□ (3) □□□ (4) ○ (5) ○ (6) ○ (7) ○ (8) ○ (9) ○ (10) ○ (11) ○ (12) ○ (13)

(1) This code denotes NTC thermistors.

(2) Structural classification code

D	Glass sealed diode shape
G	Multilayer element
R	Glass radial

(3) Assembly product

(4) B constant(Resistance temperature characteristics)

This code indicates the value of B constant using a combination of one numeric and one alphabetic character.

Numeric code	B constant(K)	Alphabetic code	B constant(K)
1	1000	A	0 to 50
2	2000	B	51 to 100
3	3000	C	101 to 150
4	4000	D	151 to 200
5	5000	E	201 to 250
		F	251 to 300
		G	301 to 350
		H	351 to 400
		J	401 to 450
		K	451 to 500
		L	501 to 550
		M	551 to 600
		N	601 to 650
		P	651 to 700
		Q	701 to 750
		R	751 to 800
		S	801 to 850
		T	851 to 900
		U	901 to 950
		V	951 to 999

Note: Although B constants are expressed as 1A, 1B, 2A, 2B, etc. using these two tables, the alphabetic characters do not denote tolerances;they have the meaning shown in the example below.

(Example)
 1A=1000(K)
 1A=1050(K)
 That is, the alphabetic character(in this example, A) indicates the range of values that can be specified by the thermistor user.

(5) B constant tolerance

This code indicates tolerances using the following code.

Code	Tolerance(%)
F	±1
G	±2
H	±3
J	±5
K	±10

(6) Nominal resistance

This code indicates the resistance value existing at the specified ambient temperature by two significant digits followed by the digit 0(zero).

(Example)

470Ω	471
5kΩ	502
10kΩ	103
150kΩ	154

(7) Nominal resistance tolerance

Tolerance is identified by the following codes.

Code	Tolerance(%)
F	±1
G	±2
H	±3
J	±5
K	±10

(8) Ambient temperature for nominal resistance

Ambient temperatures for specified nominal-resistance values are indicated using the following codes.

Code	Ambient temperature(°C)
A	-20
B	0
C	25
D	100
E	200
F	300
G	20
X	Others

(9) Envelope structural code

A	ABS resin coating ø8.0mm	J	Dipping type
B	ABS resin coating ø6.8mm	K	Polyester resin mold
C	ABS resin coating ø6.0mm	L	Copper case ø6.0mm
D	Epoxy resin coating ø5.5mm	M	Copper case ø5.0mm
E	Epoxy resin coating ø6.0mm	N	Composite type
F	Epoxy resin coating with screw hole	Z	Lug terminal type
G	PPS resin case	X	Others
H	PPS resin mold		

(10) Dimensional code of length

A	150mm max.	D	501 to 800mm
B	151 to 300mm	E	801 to 1000mm
C	301 to 500mm	F	1000mm min.

(11) Insulation material code of lead wire

A	Vinyl chloride(Heat resistance: 105°C)
B	Cross-link vinyl chloride(Heat resistance: 105°C)
C	Cross-link polyethylene(Heat resistance: 150°C)
D	Silicone
E	Teflon
Z	Others

(12) Terminal shape's code

A	Strip wire	C	With connector
B	With terminal	Z	Others

(13) TDK internal code

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NTCGP Series(Multilayer Element Type NTC Thermistor)

RESIN DIP TYPE

FEATURES

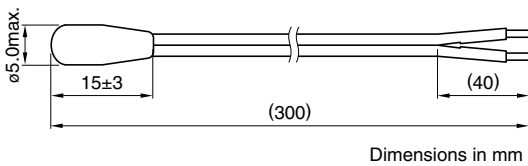
- Employs a multilayer element type thermistor.
- Good heat responsiveness due to its small size.
- Product is lead-free.

APPLICATIONS

- Room temperature detection (air conditioners, fan heaters etc.)
- Temperature maintenance detection (seating surface of toilet seats with warm water washing function etc.)
- Water temperature detection (hot water pots etc.)
- Temperature detection (refrigerator compartments, heated carpets etc.)

PART NO.: NTCGP3UH153HCJDAA

SHAPES AND DIMENSIONS



CHARACTERISTICS

Nominal resistance	$R_{25}=15k\Omega/20k\Omega/50k\Omega\pm 3\%$
B constant	$B_{25/50}=3950K\pm 3\%$
Operating temperature range	-20 to +80°C
Thermal time constant	6s max.[in still water]
Heat dissipation constant	2.8mW/°C[in still air]

- Please contact us for the other specified(nominal resistance value and B constant) products.

SPECIFICATIONS

1 Thermistor	Multilayer element type
2 Resin	Epoxy resin
3 Wires	Seven AWG26 parallel lines with heat proof (105°C) vinyl chloride/0.16 mm, Sn-plated
4 End finish	Different specifications available including stripped, crimped and connector fitted.

LUG TERMINAL TYPE

FEATURES

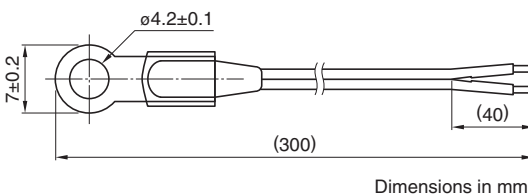
- Possible to affix using a fastening screw and to perform stable temperature detection of the mounting surface.
- Can be used for a wide temperature range; Highly reliable.
- Can be installed in vehicles.

APPLICATIONS

- Temperature detection (Inverters for solar power generation and projectors))
- Substrate temperature detection (Converters for HEVs and EVs)

PART NO.: NTCGP3UG503HCZCCA

SHAPES AND DIMENSIONS



CHARACTERISTICS(TYPICAL VALUE)

Nominal resistance*1	$R_{25}=50k\Omega\pm 3\%$
B constant*1	$B_{25/50}=3950K\pm 2\%$
Operating temperature range*2	-40 to +125°C
Thermal time constant	6s max.[in still water]
Heat dissipation constant	3mW/°C[in still air]

- Please contact us for the other specified(nominal resistance value and B constant) products.

*1 R_{25} : Compatible with the 5k Ω to 50k Ω range, $B_{25/50}$: Compatible with the 3400K to 4100K range

*2 Can be compatible with a heat resistance of +150°C

SPECIFICATIONS

1 Thermistor	Multilayer element type
2 Resin	Epoxy resin
3 Wires	Seven AWG26 parallel lines with polyethylene (125°C) vinyl chloride/0.16 mm, Sn-plated
4 End finish	Different specifications available including stripped, crimped and connector fitted.

NTCDP Series(Glass Sealed Diode Type NTC Thermistor)

EPOXY PLASTIC CASE TYPE

FEATURES

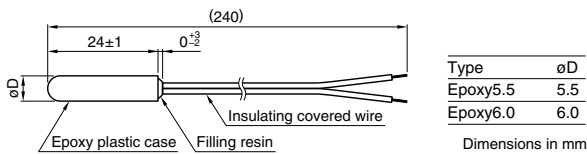
- Excellent in high reliability, high responsiveness, high heat resistance.
- Two types are available.
Epoxy(ø5.5mm) type: Priority given to heat responsiveness
Epoxy(ø6.0mm) type: Compatible with copper case type of ø6.0mm

APPLICATIONS

Temperature detection of refrigerator and vending machine compartments (Air conditioners, refrigerators, vending machines, dishwashers, etc.)

PART NO.: NTCDP4AG103JCDBBA

SHAPES AND DIMENSIONS



CHARACTERISTICS

Nominal resistance	R ₂₅ =10kΩ±5%
B constant	B _{25/85} =4000K±2%
Operating temperature range	-40 to +150°C
Thermal time constant	15s max.[in still water]
Heat dissipation constant	3.3mW/°C[in still air]

- Please contact us for the other specified(nominal resistance value and B constant) products.



EPOXY FASTENING SCREW TYPE

FEATURES

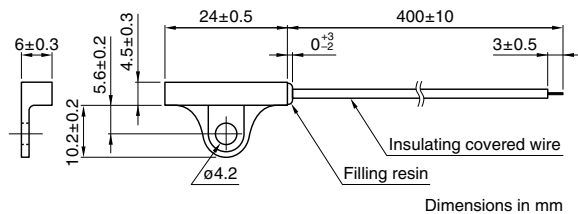
- Excellent in high reliability, high responsiveness, high heat resistance.
- Fastening screw type; Superior surface temperature detection.

APPLICATIONS

Temperature detection of refrigerator and vending machine compartments (Air conditioners, refrigerators, vending machines, dishwashers, etc.)

PART NO.: NTCDP4AG103HCFBBA

SHAPES AND DIMENSIONS



CHARACTERISTICS

Nominal resistance	R ₂₅ =10kΩ±3%
B constant	B _{25/85} =4000K±2%
Operating temperature range	-40 to +150°C
Thermal time constant	15s max.[in still water]
Heat dissipation constant	3.3mW/°C[in still air]

- Please contact us for the other specified(nominal resistance value and B constant) products.



ABS PLASTIC CASE TYPE

FEATURES

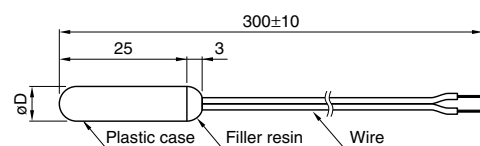
- Uses a plastic case that is compliant to Food Hygiene Act.
- Highly water-proof.
- Inexpensive.

APPLICATIONS

Refrigerators, automatic vending machines, air-conditioners.

PART NO.: NTCDP3SX202XCBBAA

SHAPES AND DIMENSIONS



Type	øD
ABS ø6.0	6.0
ABS ø6.8	6.8
ABS ø8.0	8.0

Dimensions inn mm

CHARACTERISTICS

Nominal resistance	R ₃ =5.6kΩ±0.2kΩ [3°C]
B constant	B _{3/50} =3850K±100K
Operating temperature range	-40 to +85°C
Thermal time constant	30s max.[in still water]
Heat dissipation constant	2.5mW/°C[in still air]

- Please contact us for the other specified(nominal resistance value and B constant) products.



NTCDP Series(Glass Sealed Diode Type NTC Thermistor)

PLASTIC CASE TYPE/ OIL TEMPERATURE SENSOR

FEATURES

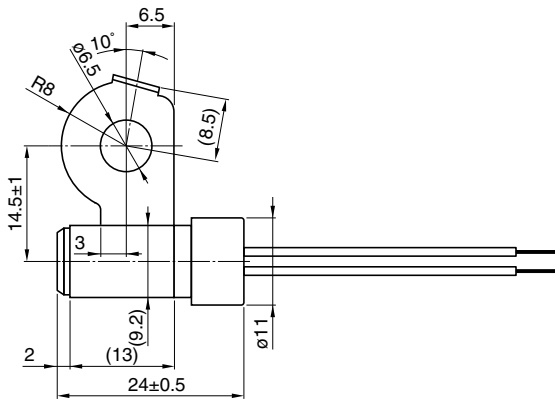
- High heat resistance.
- Excellent oil resistance and ATF resistance.

APPLICATIONS

Oil temperature detection for ATF, transmission oil, oil heaters, etc.

PART NO.: NTCDP3LG252HGHBEA

SHAPES AND DIMENSIONS



Dimensions in mm



CHARACTERISTICS

Nominal resistance	$R_{20}=2.5k\Omega \pm 3\%$ [20°C]
B constant	$B_{20/80}=3520K \pm 2\%$
Operating temperature range	-40 to +165°C
Thermal time constant	60s max.[in still oil]
Heat dissipation constant	5mW/°C[in still air]

- Please contact us for the other specified(nominal resistance value and B constant) products.

PLASTIC CASE TYPE/ ATF OIL TEMPERATURE SENSOR

FEATURES

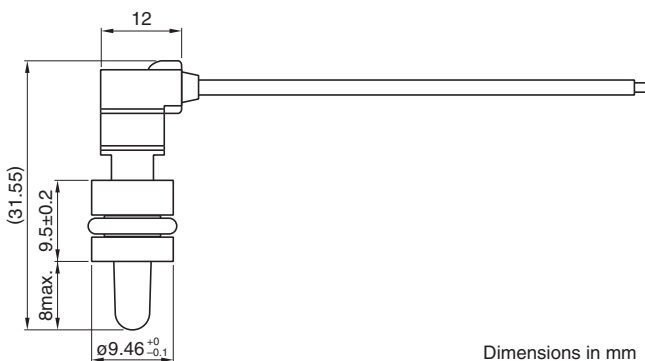
- High heat resistance.
- Excellent oil resistance and ATF resistance.
- Detection portion is sealed by an O-ring allowing for direct detection of oil temperature.

APPLICATIONS

Oil temperature detection for ATF, transmission oil, oil heaters, etc.

PART NO.: NTCDP3LG111XXHBEA

SHAPES AND DIMENSIONS



Dimensions in mm



CHARACTERISTICS

Nominal resistance	$R_{145}=0.111k\Omega \pm 2.5\%$
B constant	$B_{25/85}=3528K \pm 2\%$
Operating temperature range	-40 to +150°C
Thermal time constant	15s max.[in still oil]
Heat dissipation constant	3.5mW/°C[in still air]

- Please contact us for the other specified(nominal resistance value and B constant) products.