Sensors

Temperature Sensors
NTC Thermistors

NTCGP, DP Series(Lead Type)

ASSEMBLY PRODUCTS
PRODUCT IDENTIFICATION

NTC	○	P	□□	○	□□□	○	○	○	○	○	○	○○○
(1)	(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
C	Single chip
G	Multilayer chip

(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)
1	1000
2	2000
3	3000
4	4000
5	5000

Alphabetic code	B constant(K)
A	0 to 50
B	51 to 100
C	101 to 150
D	151 to 200
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 99

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) Tolerance on B constant
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)Tolerance on nominal resistance
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	G	PPS resin case
B	ABS resin coating ø6.8mm	H	PPS resin mold
C	ABS resin coating ø6.0mm	J	Dipping type
D	Epoxy resin coating ø5.5mm	K	Polyester resin mold
E	Epoxy resin coating ø6.0mm	L	Copper case ø6.0mm
F	Epoxy resin coating with screw hole		

(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: 105°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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RESIN MOLDED TYPE WITH BUILT-IN MULTILAYER CHIP TYPE NTC THERMISTOR

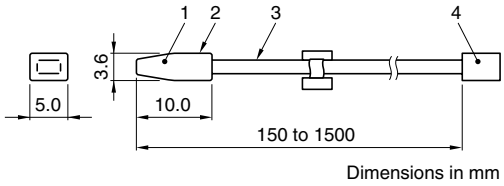
FEATURES

- Employs a multilayer chip type thermistor for less fluctuation.
- A variety of shapes are possible with our molding production method.
- A wide range of NTC thermistor characteristics are available.
- Good heat responsiveness due to its small size.
- Product is lead-free.

APPLICATIONS

- Room temperature detection (air conditioners, fan heaters, toilet seats with warm water washing function, automobile air conditioners 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.: NTCGPGG103HCKBAC
(STRIP WIRE LENGTH: 300mm, WITH CONNECTOR)
SHAPES AND DIMENSIONS



Dimensions in mm

1	Thermistor	Multilayer chip type NTC thermistor (Type 1005)
2	Resin	Polyester 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.

CHARACTERISTICS

No.	Nominal resistance value [at 25°C]	B constant [25/85°C]	B constant [25/50°C]ref.
1	5kΩ	3300K	3248K
2	5kΩ	3450K	3392K
3	5kΩ	3850K	3782K
4	5kΩ	3980K	3911K
5	10kΩ	3435K	3382K
6	10kΩ	3980K	3911K
7	10kΩ	3980K	3911K
8	10kΩ	4100K	4067K
9	50kΩ	4150K	4085K

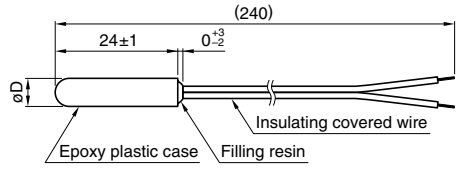
Operating temperature range	–40 to +80°C
Thermal time constant	10s max.[in still water]
Heat dissipation constant	2.8mW/°C[in still air]

EPOXY PLASTIC CASE TYPE

FEATURES

- Excellent in high reliability, high responsiveness, high heat resistance.
- Three types are available.
  Epoxy(ø5.5mm) type: Priority given to heat responsiveness
  Epoxy(ø6.0mm) type: Compatible with copper case type of ø6.0mm
  Epoxy screw fix type: Superior surface temperature detection

APPLICATIONS: TEMPERATURE DETECTION(MAINLY FOR AUTOMATIC VENDING MACHINES, REFRIGERATORS)
PART NO.: NTCDP4AG103JCDBAB
SHAPES AND DIMENSIONS



Type	øD
Epoxy5.5	5.5
Epoxy6.0	6.0

Dimensions in mm

APPLICATIONS

Air-conditioners, refrigerators, automatic vending machines, water sinks, dish washer-dryers, garbage crashers.

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.

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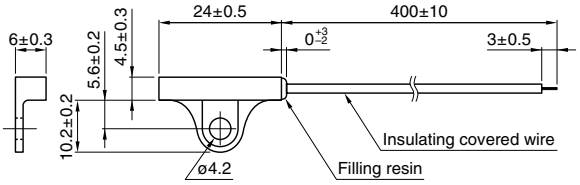
EPOXY PLASTIC CASE TYPE
APPLICATIONS: SURFACE TEMPERATURE DETECTION (MAINLY FOR REFRIGERATORS, AIR-CONDITIONERS)
PART NO.: NTCDP4AG103JCFBAC
SHAPES AND DIMENSIONS



Dimensions in mm

CHARACTERISTICS

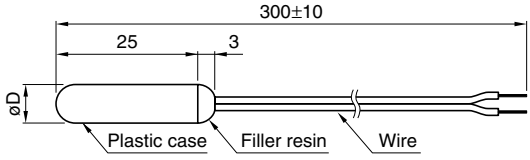
Nominal resistance	R_{25}=10kΩ±3%
B constant	$B_{25/85}$=4000K±2%
Operating temperature range	–40 to +150°C
Thermal time constant	15s max.[in still water]
Heat dissipation constant	3.3mW/°C[in still air]

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

ASSEMBLY PRODUCTS
ABS PLASTIC CASE TYPE
FEATURES

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

PART NO.: NTCDP3SX202XCBAAB
SHAPES AND DIMENSIONS



Dimensions in mm

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

APPLICATIONS
Refrigerators, automatic vending machines, air-conditioners.

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]

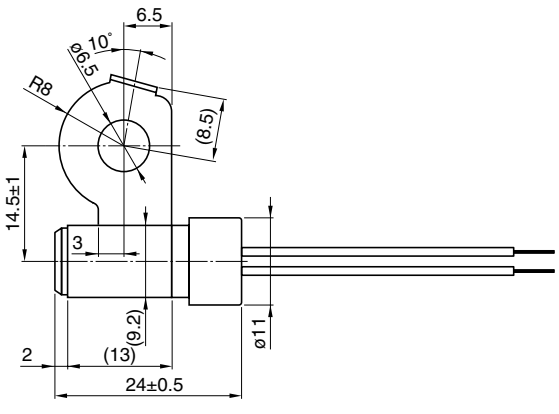
- Please contact us for the other specified(nominal resistance value and B constant) products.

PS PLASTIC CASE TYPE
FEATURES

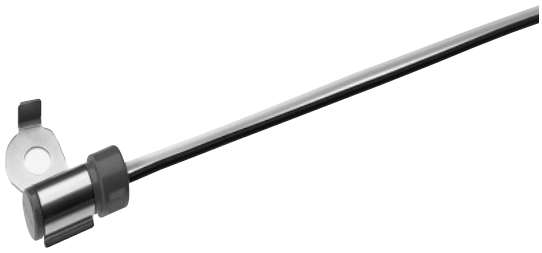
- High heat resistance.
- Excellent oil resistance.

APPLICATIONS
Mission oil, oil heater for automobiles

APPLICATIONS: OIL TEMPERATURE DETECTION(AUTOMATIC GEARBOX)
PART NO.: NTCDP3LG202HCHEAB
SHAPES AND DIMENSIONS



Dimensions in mm



CHARACTERISTICS

Nominal resistance	R_{20}=2.5kΩ±3%[20°C]
	R_{80}=0.325kΩ±7%[80°C]
B constant	$B_{20/80}$=3520K±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.