

# NTC Thermistors

## Assembly products

### NTCGP/NTCDP/NTCRP series

Issue date: February 2013

- 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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## NTCGP Series (Built-in Multilayer Element Type NTC Thermistor)

### RESIN DIP TYPE

#### FEATURES

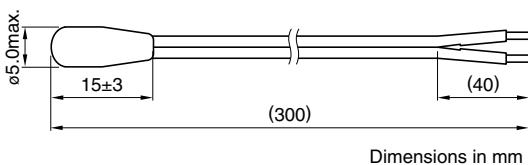
- Adopts a multilayer element type NTC thermistor.
- Fast heat responsiveness due to its small size.
- Lead-free product.

#### APPLICATIONS

- Room temperature detection (air conditioners, fan heaters etc.)
- Temperature control (surface of toilet seats with warm water washing feature, 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]

- Contact us for the other specification product about nominal resistance value and B constant.

#### SPECIFICATIONS

1 Thermistor	Multilayer element type
2 Resin	Epoxy resin
3 Wires	AWG26 (Sn-plated $\phi 0.16\text{mm}\times 7$ ) parallel cable with vinyl chloride sheath (heat proof 105°C)
4 End finish	Different specifications available including stripped, crimped and connector fitted.

### LUG TERMINAL TYPE

#### FEATURES

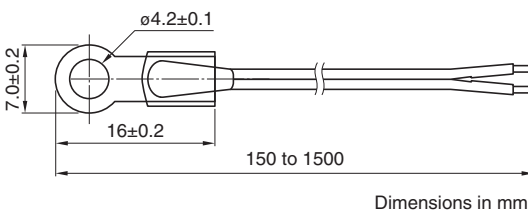
- Possible to affix using a fastening screw and to perform stable temperature detection of the mounting surface.
- Can be used for a wide temperature range; Highly reliable.
- Can be installed in vehicles.

#### 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]

- Contact us for the other specification product about nominal resistance value and B constant.

\*1  $R_{25}$ : Compatible with the 5k $\Omega$  to 50k $\Omega$  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 (Built-in Glass Sealed Diode Type NTC Thermistor)

### EPOXY PLASTIC CASE TYPE

#### FEATURES

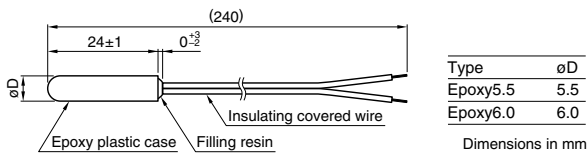
- Excellent in high reliability, high responsiveness, high heat resistance.
- Two types are available.  
Epoxy (ø5.5mm) type: Priority given to heat responsiveness  
Epoxy (ø6.0mm) type: Compatible with copper case type of ø6.0mm

#### 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	$R_{25}=10k\Omega \pm 5\%$
B constant	$B_{25/85}=4000K \pm 2\%$
Operating temperature range	-40 to +150°C
Thermal time constant	15s max.[in still water]
Heat dissipation constant	3.3mW/°C[in still air]

- Contact us for the other specification product about nominal resistance value and B constant.

### EPOXY FASTENING SCREW TYPE

#### FEATURES

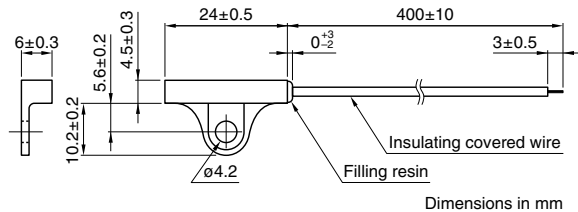
- Excellent in high reliability, high responsiveness, high heat resistance.
- Fastening screw type; Superior surface temperature detection.

#### 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	$R_{25}=10k\Omega \pm 3\%$
B constant	$B_{25/85}=4000K \pm 2\%$
Operating temperature range	-40 to +150°C
Thermal time constant	15s max.[in still water]
Heat dissipation constant	3.3mW/°C[in still air]

- Contact us for the other specification product about nominal resistance value and B constant.

### ABS PLASTIC CASE TYPE

#### FEATURES

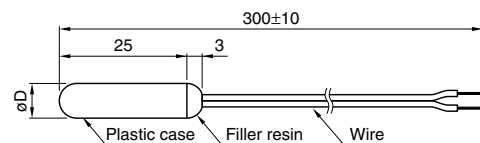
- Uses a plastic case that is compliant to Food Hygiene Act.
- Highly water-proof.
- Inexpensive.

#### 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	$R_3=5.6k\Omega \pm 0.2k\Omega [3^\circ C]$
B constant	$B_{3/50}=3850K \pm 100K$
Operating temperature range	-40 to +85°C
Thermal time constant	30s max.[in still water]
Heat dissipation constant	2.5mW/°C[in still air]

- Contact us for the other specification product about nominal resistance value and B constant.

## NTCDP Series (Built-in Glass Sealed Diode Type NTC Thermistor)

### PLASTIC CASE TYPE/ OIL TEMPERATURE SENSOR

#### FEATURES

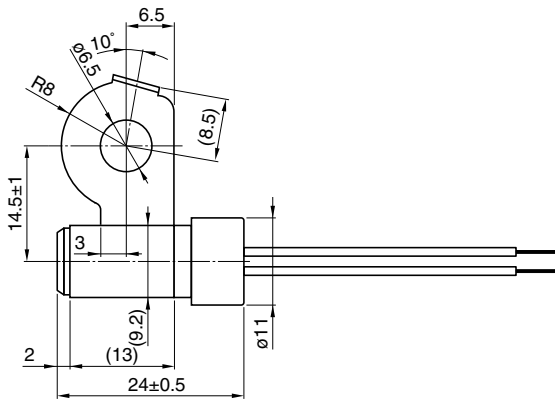
- High heat resistance.
- Excellent oil resistance and ATF resistance.

#### APPLICATIONS

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

**PART NO.:** NTCDP3LG252HGHBEA

#### SHAPES AND DIMENSIONS



Dimensions in mm



#### CHARACTERISTICS

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

- Contact us for the other specification product about nominal resistance value and B constant.

### PLASTIC CASE TYPE/ ATF OIL TEMPERATURE SENSOR

#### FEATURES

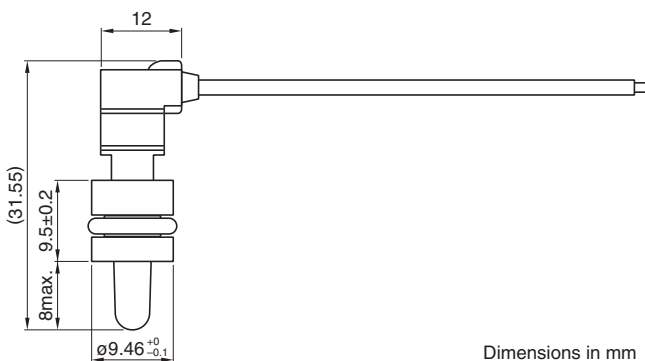
- High heat resistance.
- Excellent oil resistance and ATF resistance.
- Detection portion is sealed by an O-ring allowing for direct detection of oil temperature.

#### 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 $+150^{\circ}C$
Thermal time constant	15s max. [in still oil]
Heat dissipation constant	$3.5mW/^{\circ}C$ [in still air]

- Contact us for the other specification product about nominal resistance value and B constant.

## NTCRP Series (Built-in Glass Radial Type NTC Thermistor)

PPS RESIN CASE TYPE/ 200°C HEAT RESISTANCE, COMPACT CASE TYPE

### FEATURES

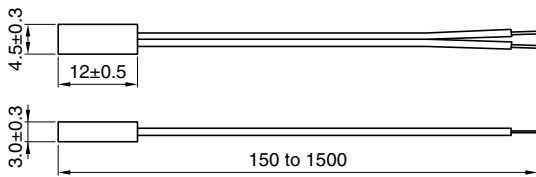
- Excellent ATF resistance.
- Operating temperature range: -40 to +200°C
- Fast heat responsiveness due to its small size.  
Heating time constant  $\approx$  3.3 seconds (25°C → 85°C/1 $\tau$  in oil)

### APPLICATIONS

Coil temperature detection for EV, HEV and PHEV drive motor  
Inner temperature detection for the servomotor used for various industries

**PART NO.:** NTCRP3VG493JCGBEA

### SHAPES AND DIMENSIONS



Dimensions in mm



### CHARACTERISTICS

Nominal resistance	$R_{25}=49.12k\Omega \pm 5\%$
B constant	$B_{25/80}=3992K \pm 2\%$
Operating temperature range	-40 to +200°C
Thermal time constant	10s max. [in still oil]
Heat dissipation constant	1.9mW/°C [25°C in still air]

- Contact us for the other specification product about nominal resistance value and B constant.