# NTC Thermistors

## Single item

## NTCDS series (Diode lead type)
## NTCGF series (Resin DIP cable type)

Issue date: October 2011

- 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.

TDK

# NTC Thermistors

**Conformity to RoHS Directive**

# NTCDS Series(Lead Type)
# NTCGF Series(Resin DIP cable type)

## FEATURES

- This series features a glass-sealed construction identical to that of DHDs (Double Heatsink Diodes). They are thus highly reliable and resistant to high relative humidity.
- Tight tolerances are maintained in resistance vs. temperature characteristics.
- The application of semiconductor mass production techniques has resulted in considerable size reduction and improved consistency.

## PRODUCT IDENTIFICATION

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

(1) This code denotes NTC thermistors.

(2) Structural classification code

| | |
|---|---|
| D | Diode shape(Axial lead type) |
| G | Multilayer element |

(3) Assembly classification code

| | |
|---|---|
| S | Without processing |
| A | Folded radial lead wire |
| B | Folded radial lead wire with insulation tube |
| C | Short cut lead wire |
| D | Kinked lead wire with insulation tube |
| E | Kinked lead wire |
| F | Resin DIP cable type |
| Z | Others |

(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) |
|---|---|
| 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 999 |

Note: Although B constants are expressed as 3A, 3B, 4A, 4B, etc. using these two tables, the alphabetic characters do not denote tolerances;they have the meaning shown in the example below.

(Example)
3A=3010(K)
3A=3050(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 |
| X | Others |

(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) Dimensional code

| | |
|---|---|
| 3 | 3018 type |
| 4 | 4020 type |
| 5 | Resin DIP shape<br>(Resin DIP type: G) |

(10) Plating specification code of lead wire

| | |
|---|---|
| N | Ni |
| S | Sn |

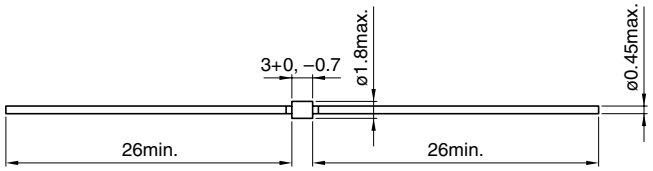
(11) Packaging style

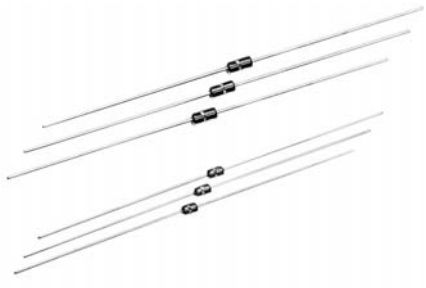
| | |
|---|---|
| B | Bulk |
| T | Taping(Tape width: 52mm) |
| K | Taping(Tape width: 26mm) |

(12) TDK internal code

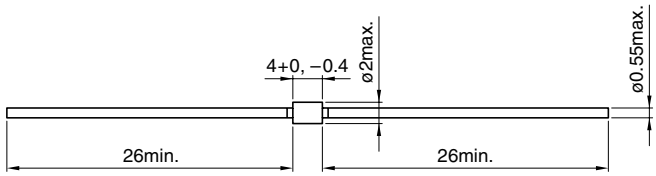
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

## NTCDS SERIES(DIODE TYPE)
## SHAPES AND DIMENSIONS
### DIMENSIONAL CODE 3(3.0×ø1.8mm)



### DIMENSIONAL CODE 4(4.0×ø2.0mm)




Dimensions in mm

## CHARACTERISTICS

| | | | |
|---|---|---|---|
| Dimensional code | | 3(3.0×ø1.8mm) | 4(4.0×ø2.0mm) |
| Operating temperature ranges | Lead wire Ni plating | –40 to +250°C | –40 to +250°C |
| | Lead wire Sn plating | –40 to +125°C | –40 to +125°C |
| Heat dissipation constant[in still air] | | 1mW/°C | 2mW/°C |
| Thermal time constant[in still air] | | 10s max. | 20s max. |
| Insulation resistance[between lead and glass] | | 50MΩ min.[DC.500V] | 50MΩ min.[DC.500V] |

Temperature coefficient

The relationship between temperature coefficient α and B constant can be expressed as follows:

$$\alpha = -\frac{B}{T^2} \times 100(\%/°C)$$

Example: The temperature coefficient at 20°C with B=3400K can be calculated at –4%/°C.

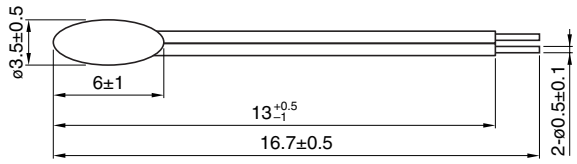
## ELECTRICAL CHARACTERISTICS

| Part No. | Nominal resistance | B constant | Reference resistance [at 25°C] | Reference B constant [at +25/+85°C] |
|---|---|---|---|---|
| Dimensional code 3(3.0×ø1.8mm) | | | | |
| NTCDS3HG202JC3□*1 □*2 | R25: 2kΩ±5% | B25/85: 3392K±2% | 2.000kΩ | 3392K |
| NTCDS4AF303GC3□□ | R25: 29.7kΩ+3, –1% | B25/85: 4000K±1% | 29.997kΩ | 4000K |
| NTCDS3UG391XX3□□ | R25: 9.383kΩ±6.8% | B25/85: 3940K±1.5% | 9.383kΩ | 3940K |
| Dimensional code 4(4.0×ø2.0mm) | | | | |
| NTCDS3LG252HG4□*1 □*2 | R20: 2.5kΩ±3% | B20/80: 3520K±2% | 2.050kΩ | 3528K |
| NTCDS3KF162FX4□□ | R60: 1.593kΩ±1% | B0/100: 3450±1% | 5.369kΩ | 3479K |
| NTCDS3SG642FB4□□ | R0: 6.409kΩ±1% | B-20/0: 3808±2% | 1.973kΩ | 3844K |
| NTCDS3FG602HB4□□ | R-30: 25.07kΩ±3% | B0/25: 3298K±2% | 2.182kΩ | 3392K |
| NTCDS3PH612HB4□□ | R0: 6.16kΩ±3% | B0/25: 3700K±3% | 1.978kΩ | 3750K |
| NTCDS3RG193GA4□□ | R-20: 18.9kΩ±2% | B-20/25: 3770K±2% | 2.016kΩ | 3800K |
| NTCDS3SG183GA4□□ | R-20: 18.9kΩ±2% | B-20/0: 3850K±2% | 1.939kΩ | 3844K |
| NTCDS3SG392HX4□□ | R10: 3.899kΩ±3% | B-20/10: 3819K±2% | 1.965kΩ | 3844K |
| NTCDS3SX193XA4□□ | R-20: 19.3kΩ±0.6kΩ | B25/50: 3850K±2.5% | 1.980kΩ | 3844K |
| NTCDS3SX202XC4□□ | R3: 5.6kΩ±0.2kΩ | B3/50: 3850K±2.5% | 2.020kΩ | 3844K |
| NTCDS4AF533GA4□□ | R0: 17kΩ±2% | B-20/10: 4000K±1% | 4.899kΩ | 4000K |
| NTCDS4AG103HC4□□ | R25: 10kΩ±3% | B25/85: 4000K±2% | 10.000kΩ | 4000K |

*1 □: Plating specification code of lead wire, N or S(Please refer to PRODUCT IDETIFICATION)

*2 □: Packaging style code, B, T or K(Please refer to PRODUCT IDETIFICATION)

## NTCGF SERIES(RESIN DIP CABLE TYPE)
## SHAPES AND DIMENSIONS
## DIMENSIONAL CODE 5




Dimensions in mm

## CHARACTERISTICS

| | |
|---|---|
| Dimensional code | 5(Resin DIP type) |
| Operating temperature range | –30 to +100°C |
| Heat dissipation constant[in still air] | 4mW/°C |
| Thermal time constant[in still air] | 30s max. |
| Insulation resistance[between lead and thermistor] | 5MΩ min.[DC.500V] |

## ELECTRICAL CHARACTERISTICS

| Part No. | Nominal resistance | B constant | Reference B constant [at +25/+85°C] |
|---|---|---|---|
| NTCGF3LG222HC5SB | R25: 2.185kΩ±3% | B0/25: 3390K±3% | 3535K |

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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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