

# 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.
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# 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)	Alphabetic code	B constant(K)
3	3000	A	0 to 50
4	4000	B	51 to 100
5	5000	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 (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

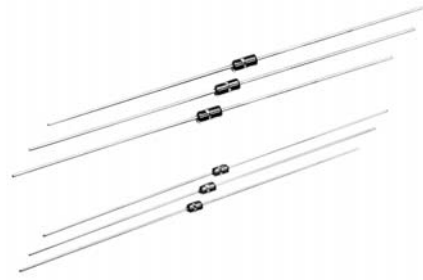
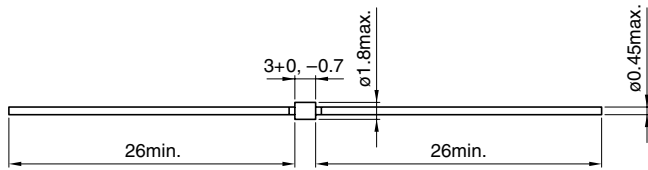
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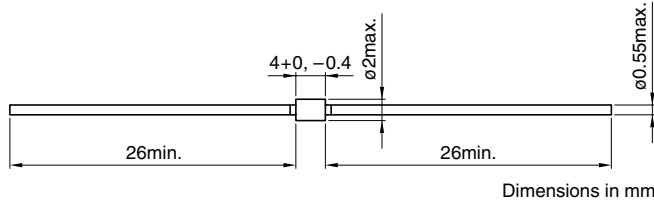
## NTCDS SERIES(DIODE TYPE)

### 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  $\alpha$  and B constant can be expressed as follows:

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

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

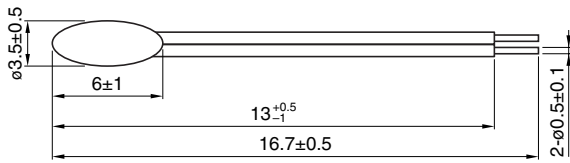
\*1 □: Plating specification code of lead wire, N or S(Please refer to PRODUCT IDENTIFICATION)

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

## 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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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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