TDK

March 2016

NTC Thermistors

Element

NTCDS·NTCGF series

NTCDS	**Glass-encapsulated NTC thermistors**
NTCGF	**Resin coated NTC thermistors**

NTC Thermistors

Element

Product compatible with RoHS directive
Halogen-free
Compatible with lead-free solders

Overview of the NTCDS・NTCGF Series

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 LINEUP

NTCDS series

Glass-encapsulated NTC thermistors
Dimensional code 3 (3.0×ø1.8mm)

Glass-encapsulated NTC thermistors
Dimensional code 4 (4.0×ø2.0mm)

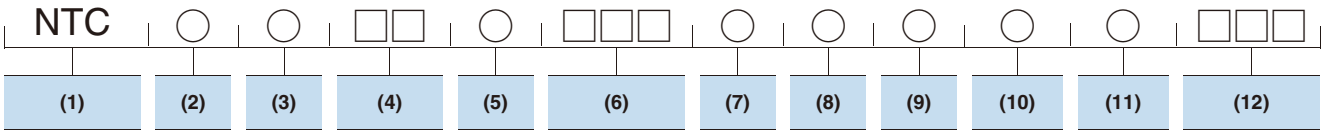
NTCGF series

Resin coated NTC thermistors
Dimensional code 5 (Resin coated shape)

- RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. http://product.tdk.com/en/environment/rohs/
- Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

Overview of the NTCDS・NTCGF Series

PART NUMBER CONSTRUCTION



(1) This code denotes NTC thermistors.

(2) Structural classification code

D	Glass-encapsulated 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 coated NTC thermistors
Z	Coating product
X	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)
2	2000
3	3000
4	4000

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
X	Others

(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

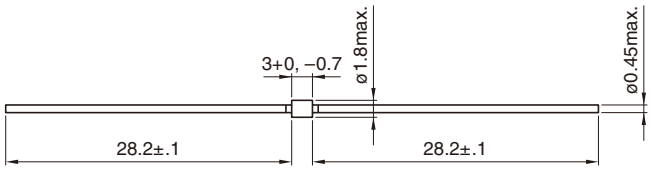
B	Bulk
T	Taping(Tape width: 52mm)
K	Taping(Tape width: 26mm)
X	Others

(12) TDK internal code

NTCDS Series (Glass-encapsulated NTC thermistors, Dimensional code 3)

SHAPE & DIMENSIONS

□Dimensional code 3 (3.0×ø1.8mm)



CHARACTERISTICS

Dimensional code	3(3.0×ø1.8mm)
Heat dissipation constant[in still air]	1mW/°C
Thermal time constant[in still air]	10s max.
Insulation resistance[between lead and glass]	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

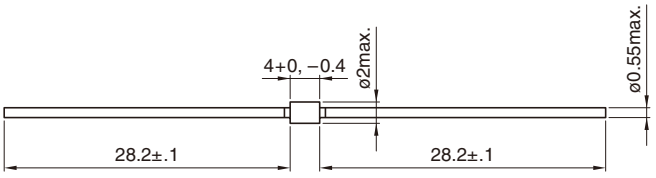
□CHARACTERISTICS SPECIFICATION TABLES

Part No.	Nominal resistance (0°C)	(100°C)	Resistance (25°C)	B constant		Lead wire plating	Operating temperature ranges
NTCDS3HG552HB3N□	5.499kΩ	—	2.000kΩ	B25/85: 3392K±2%	B0/100: 3366K±2%	Ni	–40 to 250°C
NTCDS3HG602HB3N□	6kΩ	—	2.186kΩ	B25/85: 3392K±2%	B0/100: 3366K±2%		
NTCDS3HG273HB3N□	27.18kΩ	—	10.00kΩ	B25/85: 3400K±2%	B0/100: 3368K±2%		
NTCDS3KG471HD3N□	—	0.470kΩ	4.961kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS3KG153HB3N□	15kΩ	—	5.369kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS3KG303HB3N□	30kΩ	—	10.74kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS3LG181HD3N□	—	0.184kΩ	1.991kΩ	B25/85: 3528K±2%	B0/100: 3503K±2%		
NTCDS3LG161HD3N□	—	0.1553kΩ	1.684kΩ	B25/85: 3528K±2%	B0/100: 3503K±2%		
NTCDS3NG802HB3N□	8.013kΩ	—	2.677kΩ	B25/85: 3650K±2%	B0/100: 3645K±2%		
NTCDS3UG661HD3N□	—	0.662kΩ	9.382kΩ	B25/85: 3940K±2%	B0/100: 3932K±2%		
NTCDS4AG173HB3N□	17kΩ	—	4.918kΩ	B25/85: 4000K±2%	B0/100: 3999K±2%		
NTCDS4AG353HB3N□	34.67kΩ	—	10.00kΩ	B25/85: 4000K±2%	B0/100: 3999K±2%		
NTCDS4AG993HB3N□	99.91kΩ	—	30.00kΩ	B25/85: 3992K±2%	B0/100: 3970K±2%		
NTCDS4AG332HD3N□	—	3.3kΩ	49.12kΩ	B25/85: 3992K±2%	B0/100: 3970K±2%		
NTCDS3HG552HB3S□	5.499kΩ	—	2.000kΩ	B25/85: 3392K±2%	B0/100: 3366K±2%	Sn	–40 to 160°C
NTCDS3KG471HD3S□	—	0.470kΩ	4.961kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS3UG661HD3S□	—	0.662kΩ	9.382kΩ	B25/85: 3940K±2%	B0/100: 3932K±2%		

NTCDS Series (Glass-encapsulated NTC thermistors, Dimensional code 4)

SHAPE & DIMENSIONS

□Dimensional code 4 (4.0×ø2.0mm)



Dimensions in mm

CHARACTERISTICS

Dimensional code	4(4.0×ø2.0mm)
Heat dissipation constant[in still air]	2mW/°C
Thermal time constant[in still air]	20s max.
Insulation resistance[between lead and glass]	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

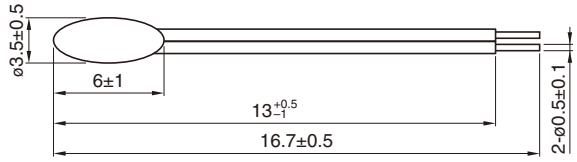
□CHARACTERISTICS SPECIFICATION TABLES

Part No.	Nominal resistance (0°C)	(100°C)	Resistance (25°C)	B constant		Lead wire plating	Operating temperature ranges
NTCDS3HG552HB4N□	5.499kΩ	—	2.000kΩ	B25/85: 3392K±2%	B0/100: 3366K±2%	Ni	–40 to 250°C
NTCDS3HG602HB4N□	6kΩ	—	2.186kΩ	B25/85: 3392K±2%	B0/100: 3366K±2%		
NTCDS3HG273HB4N□	27.18kΩ	—	10.00kΩ	B25/85: 3400K±2%	B0/100: 3368K±2%		
NTCDS3KG471HD4N□	—	0.470kΩ	4.961kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS3KG153HB4N□	15kΩ	—	5.369kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS3KG303HB4N□	30kΩ	—	10.74kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS3LG181HD4N□	—	0.184kΩ	1.991kΩ	B25/85: 3528K±2%	B0/100: 3503K±2%		
NTCDS3LG161HD4N□	—	0.1553kΩ	1.684kΩ	B25/85: 3528K±2%	B0/100: 3503K±2%		
NTCDS3NG802HB4N□	8.013kΩ	—	2.677kΩ	B25/85: 3650K±2%	B0/100: 3645K±2%		
NTCDS3RG642HB4N□	6.418kΩ	—	2.016kΩ	B25/85: 3800K±2%	B0/100: 3792K±2%		
NTCDS3SG652HB4N□	6.508kΩ	—	2.020kΩ	B25/85: 3850K±2%	B0/100: 3834K±2%		
NTCDS3UG661HD4N□	—	0.662kΩ	9.382kΩ	B25/85: 3940K±2%	B0/100: 3932K±2%		
NTCDS4AG173HB4N□	17kΩ	—	4.918kΩ	B25/85: 4000K±2%	B0/100: 3999K±2%		
NTCDS4AG353HB4N□	34.67kΩ	—	10.00kΩ	B25/85: 4000K±2%	B0/100: 3999K±2%		
NTCDS4AG993HB4N□	99.91kΩ	—	30.00kΩ	B25/85: 3992K±2%	B0/100: 3970K±2%		
NTCDS4AG332HD4N□	—	3.3kΩ	49.12kΩ	B25/85: 3992K±2%	B0/100: 3970K±2%		
NTCDS3HG602HB4S□	6kΩ	—	2.186kΩ	B25/85: 3392K±2%	B0/100: 3366K±2%	Sn	–40 to 160°C
NTCDS3KG153HB4S□	15kΩ	—	5.369kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS3KG303HB4S□	30kΩ	—	10.74kΩ	B25/85: 3480K±2%	B0/100: 3450K±2%		
NTCDS4AG353HB4S□	34.67kΩ	—	10.00kΩ	B25/85: 4000K±2%	B0/100: 3999K±2%		

NTCGF Series (Resin coated NTC thermistors, Dimensional code 5)

SHAPE & DIMENSIONS

□Dimensional code 5



Dimensions in mm

CHARACTERISTICS

Dimensional code	5(Resin DIP type)
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

□CHARACTERISTICS SPECIFICATION TABLES

Part No.	Nominal resistance (0°C)	Resistance (25°C)	B constant		Lead wire plating	Operating temperature ranges
NTCGF3LG222HC5SB	6.204kΩ	2.185kΩ	B25/85: 3535K±2%	B0/100: 3505K±2%	Sn	–40 to 125°C