Sensors

NTCDS Series(Lead Type)

Temperature Sensors NTC Thermistors

AXIAL LEAD GLASS-SEALED TYPE FEATURES

- The NTCDS 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	D	\circ		\circ		\circ	\circ	\circ	\circ	\circ	000
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	$\overline{(10)}$	(11)	(12)

(1) This code denotes NTC thermistors.

(2) Structural classification code

D	Glass sealed diode shape

(3) Assembly classification code

) Assemi	Assembly classification code		
S	Without processing		
С	Short cut lead wire		
E	Kinked lead wire		
D	Kinked lead wire with insulation tube		
В	Folded radial lead wire		
Α	Folded radial lead wire with insulation tube		
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)
1	1000
2	2000
3	3000
4	4000
5	5000

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.

Alphabetic code	B constant(K)
A	0 to 50
В	51 to 100
С	101 to 150
D	151 to 200
E	201 to 250
F	251 to 300
G	301 to 350
Н	351 to 400
J	401 to 450
K	451 to 500
L	501 to 550
M	551 to 600
N	601 to 650
Р	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

(5) Tolerance on B constant

This code indicates tolerances using the following code.

Code	Tolerance(%)
F	±1
G	±2
Н	±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	
150kO	154	

(7) Tolerance on nominal resistance

Tolerance is identified by the following codes.

Code	Tolerance(%)
F	±1
G	±2
Н	±3
J	±5

(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
В	0
С	25
D	100
E F	200
	300
G	20
X	Others

(9) Dimensional code

3	3018(3.0×ø1.8mm)	
4	4020(4.0×ø2.0mm)	

(10) Plating specification code of lead wire

N	Ni
S	Sn

(11) Packaging style

В	Bulk
Т	Taping(Tape width: 52mm)
K	Taping(Tape width: 26mm)

(12) TDK internal code

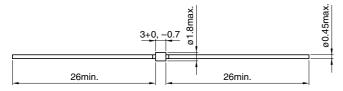


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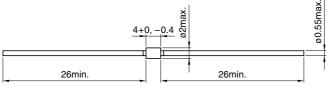
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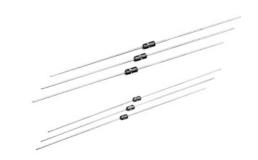
SHAPES AND DIMENSIONS DIMENSIONAL CODE 3(3.0×ø1.8mm)



DIMENSIONAL CODE 4(4.0xø2.0mm)



Dimensions in mm



CHARACTERISTICS

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

Temperature coefficient

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

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

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

ELECTRICAL CHARACTERISTICS

Part No.	Nominal resistance [at 25°C]	B constant [at +25 to +85°C]
Dimensional code 3(3.0×ø1.8mm)		_
NTCDS3EG502□*C3NB	5kΩ±□%	3250K±2%
NTCDS3HG103□C3NB	10kΩ±□%	3400K±2%
NTCDS3KG203□C3NB	20kΩ±□%	3500K±2%
NTCDS3RG503□C3NB	50kΩ±□%	3800K±2%
NTCDS3SG104□C3NB	100kΩ±□%	3850K±2%
Dimensional code 4(4.0×ø2.0mm)		
NTCDS3EG502□*C4NB	5kΩ±□%	3250K±2%
NTCDS3HG103□C4NB	10kΩ±□%	3400K±2%
NTCDS3KG203□C4NB	20kΩ±□%	3500K±2%
NTCDS3RG503□C4NB	50kΩ±□%	3800K±2%
NTCDS3SG104□C4NB	100kΩ±□%	3850K±2%

 $^{^*}$ \Box : Please specify the code of tolerance on nominal resistance. F(±1%), G(±2%), H(±3%), J(±5%)