# **⊗TDK**

# **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.

**会TDK** 

# NTC Thermistors 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	0	$\bigcirc$		$\bigcirc$		$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	000
(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
В	Folded radial lead wire with insulation tube
С	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	В	51 to 100
5	5000	С	101 to 150
		D	151 to 200
Note: Although	B constants are	E F	201 to 250
•	A, 3B, 4A, 4B, etc.		251 to 300
using these two		G	301 to 350
•	acters do not denote	Н	351 to 400
•	have the meaning	J	401 to 450
shown in the ex	ample below.	K	451 to 500
		L	501 to 550
(Example)		Μ	551 to 600
3A=3010(K)		N	601 to 650
3A=3050(K)		Р	651 to 700
That is, the alph	nabetic character(in	Q	701 to 750
this example, A	) indicates the range	R	751 to 800
of values that ca	an be specified by the	S	801 to 850
thermistor user.		Т	851 to 900
		U	901 to 950
		V	951 to 999

#### (5) B constant tolerance

This code indicates tolerances using the following code.

Code	Tolerance(%)
F	±1
G	±2
Н	±3
J	±5
К	±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.

Tolerance(%)
±1
±2
±3
±5
±10
Others

#### (8) Ambient temperature for nominal resistance

Ambient temperatures for specified nominal-resistance values are indicated using the following codes.

Ambient temperature(°C)
-20
0
25
100
200
300
20
Others

#### (9) Dimensional code

3	3018 type
4	4020 type
5	Resin DIP shape
5	(Resin DIP type: G)

(10) Plating specification code of lead wire

Ν	Ni	
S	Sn	

# (11) Packaging style

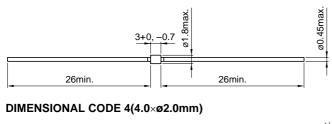
В	Bulk
Т	Taping(Tape width: 52mm)
K	Taping(Tape width: 26mm)

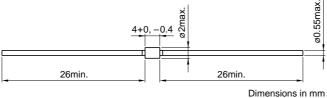
#### (12) TDK internal code

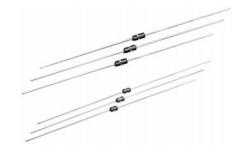
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

· All specifications are subject to change without notice.

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







# CHARACTERISTICS

Dimensional code		3(3.0×ø1.8mm)	4(4.0×ø2.0mm)
	Lead wire Ni plating	–40 to +250°C	–40 to +250°C
Operating temperature ranges	Lead wire Sn plating	–40 to +125°C	–40 to +125°C
Heat dissipation constant[in still ai	r]	1mW/°C	2mW/°C
Thermal time constant[in still air]		10s max.	20s max.
Insulation resistance[between lead	l 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:

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

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

# **ELECTRICAL CHARACTERISTICS**

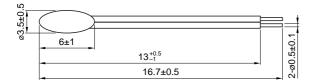
Part No.	Nominal resistance	B constant	Reference resistance [at 25°C]	Reference B constant [at +25/+85°C]
Dimensional code 3(3.0×ø1.8mm)				
NTCDS3HG202JC3 <sup>*1</sup> <sup>*2</sup>	R25: 2kΩ±5%	B25/85: 3392K±2%	2.000kΩ	3392K
NTCDS4AF303GC3	R25: 29.7kΩ+3, –1%	B25/85: 4000K±1%	29.997kΩ	4000K
NTCDS3UG391XX3	R25: 9.383kΩ±6.8%	B25/85: 3940K±1.5%	9.383kΩ	3940K
Dimensional code 4(4.0×ø2.0mm)				
NTCDS3LG252HG4 <sup>1</sup> <sup>1</sup> <sup>2</sup>	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)

(3/3)

# 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

• All specifications are subject to change without notice.