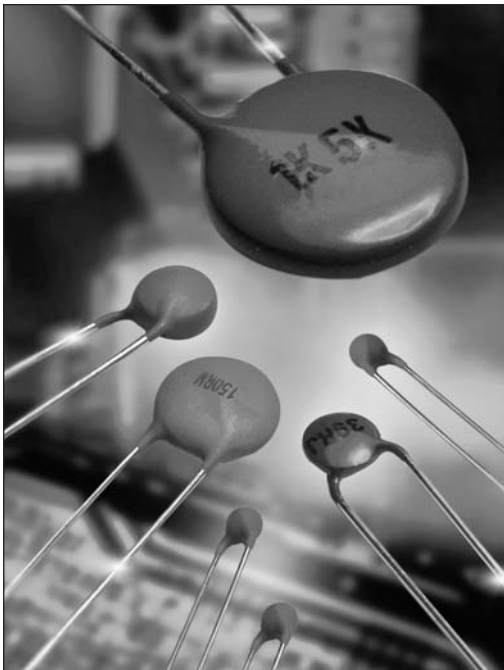


NTC Disc Thermistors

ND 03/06/09 • NE 03/06/09 • NV 06/09



APPLICATIONS

- ND or NE: Commercial, Industrial and Automotive Applications
AEC-Q200 Qualified
NV: Professional Applications!
- Alarm and temperature measurement application
- Temperature regulation application
- Level detection application
- Compensation application and more

TECHNOLOGY

- ND: epoxy-phenolic resin coating
NE: epoxy resin coating (recommended for severe mounting conditions)
NV: epoxy varnish coating
- Leads: Radial copper wire tinned
- Marking: on package only for ND03 & NE03
ND/NE 06/09: Nominal resistance and tolerance for $\pm 5\%$, $\pm 10\%$
NV06/09: Nominal resistance and tolerance
- Delivery Mode: Bulk, reeled or ammpacked

Leaded Discs

N.03

N.06

N.09



PERFORMANCE CHARACTERISTICS

Types	General purpose			Professional	
	ND03 or NE03	ND06 or NE06	ND09 or NE09	NV06	NV09
Climatic category				55/125/56-434	55/125/56-434
Operating Temperature	-55 to +150°C	-55 to +150°C	-55 to +150°C	-55 to +150°C	-55 to +150°C
Tolerance on Rn (25°C)	330Ω to 1MΩ : $\pm \pm 3^*$, 5, 10, 20% 1500Ω to 150 kΩ : $\pm 3\%$	$\pm 3^*$, 5, 10, $\pm 20\%$	$\pm 3^*$, 5, 10, $\pm 20\%$	$\pm 2, 3, 5, \pm 10\%$	$\pm 2, 3, 5, \pm 10\%$
Maximum dissipation at 25°C	0.25 W	0.71 W	0.9 W	0.69 W	0.85 W
Thermal dissipation factor	5 mW/°C	7.1 mW/°C	9 mW/°C	6.9 mW/°C	8.5 mW/°C
Thermal time constant	10 s	22 s	30 s	18 s	30 s
Response time	< 3s				

STANDARDIZATION

NV range : approved by NFC 93271
Type: TN115 A for NV06
TN116 for NV09
List: GAM-T1
List: LNZ

OPTIONS

Consult factory for availability of options:

- other nominal resistance values
- other tolerances
- alternative lead materials or lengths
- controlled dimensions

* Optional tolerance, please contact factory

NTC Disc Thermistors

ND/NE 03



HOW TO ORDER

ND06

Type

ND03
NE03
ND06
NE06
NV06

ND09
NE09
NV09

P0

Material Code

P
(See tables
page 23-25)

0103

Resistance

10 k Ω
(See tables
page 22-24)

K

Tolerance

G ($\pm 2\%$) for NV
H ($\pm 3\%$)*
J ($\pm 5\%$)
K ($\pm 10\%$)
M ($\pm 20\%$)

--

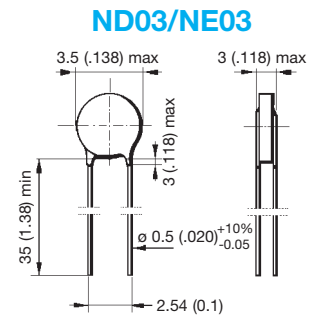
Packaging

--: Bulk
Ammopack
(See table page 26)
Tape and reel
(See table page 26)

* Optional tolerance, please contact factory

TABLE OF VALUES

ND03/NE03 TYPE



Part Number	Rn at 25°C (Ω)	Material Code	B (K) ($\frac{B}{B}$ $\begin{matrix} (1) \pm 5\% \\ (2) \pm 3\% \end{matrix}$)	α at 25°C (%/°C)
N_03J00681 N_03J00102	680 1,000	J	3480 (2)	- 3.9
N_03K00152 N_03K00222	1,500 2,200	K	3630 (2)	- 4.0
N_03L00272 N_03L00332	2,700 3,300	L	3790 (2)	- 4.2
N_03M00472 N_03M00682	4,700 6,800	M	3950 (2)	- 4.4
N_03N00103 N_03N00153	10,000 15,000	N	4080 (2)	- 4.6
N_03P00223 N_03P00333	22,000 33,000	P	4220 (2)	- 4.7
N_03Q00473 N_03Q00683	47,000 68,000	Q	4300 (2)	- 4.7
N_03R00104 N_03R00154	100,000 150,000	R	4400 (2)	- 4.8
N_03S00224	220,000	S	4520 (2)	- 5.0
N_03T00334 N_03T00474	330,000 470,000	T	4630 (2)	- 5.1
N_03U00105	1,000,000	U	4840 (2)	- 5.3

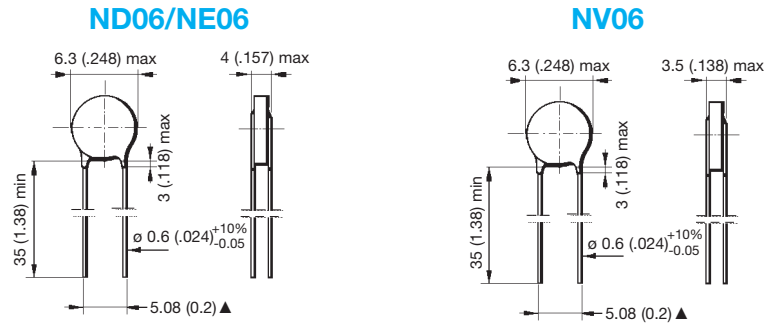
NTC Disc Thermistors

ND/NE/NV 06



TABLE OF VALUES

ND06/NE06/NV06



Part Number	R _n at 25°C (Ω)	Material Code	B (K) ($\frac{B}{B}$) (1) ± 5% (2) ± 3%	α at 25°C (%/°C)
N_06J00151 N_06J00221	150 220	J	3480 (2)	- 3.9
N_06K00331 N_06K00471	330 470	K	3630 (2)	- 4.0
N_06L00681 N_06L00102	680 1,000	L	3790 (2)	- 4.2
N_06M00152	1,500	M	3950 (2)	- 4.4
N_06N00222 N_06N00332	2,200 3,300	N	4080 (2)	- 4.6
N_06P00472 N_06P00682 N_06P00103	4,700 6,800 10,000	P	4220 (2)	- 4.7
N_06Q00153 N_06Q00223	15,000 22,000	Q	4300 (2)	- 4.7
N_06R00333	33,000	R	4400 (2)	- 4.8
N_06S00473 N_06S00683	47,000 68,000	S	4520 (2)	- 5.0
N_06T00104	100,000	T	4630 (2)	- 5.1
N_06U00154 N_06U00224 N_06U00334	150,000 220,000 330,000	U	4840 (2)	- 5.3

For other resistance values, please consult us.

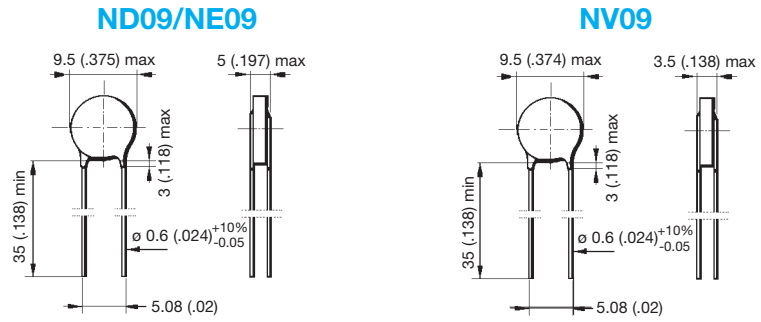
NTC Disc Thermistors

ND/NE/NV 09



TABLE OF VALUES

ND09/NE09/NV09



Part Number	R _n at 25°C (Ω)	Material Code	B (K) (B/B) (1) ± 5% (2) ± 3%	α at 25°C (%/°C)
N_09J00680 N_09J00101	68 100	J	3480 (2)	- 3.9
N_09K00151 N_09K00221	150 220	K	3630 (2)	- 4.0
N_09L00331	330	L	3790 (2)	- 4.2
N_09M00471 N_09M00681	470 680	M	3950 (2)	- 4.4
N_09N00102 N_09N00152	1,000 1,500	N	4080 (2)	- 4.6
N_09P00222 N_09P00332	2,200 3,300	P	4220 (2)	- 4.7
N_09Q00472 N_09Q00682	4,700 6,800	Q	4300 (2)	- 4.7
N_09R00103 N_09R00153	10,000 15,000	R	4400 (2)	- 4.8
N_09S00223	22,000	S	4520 (2)	- 5.0
N_09T00333 N_09T00473	33,000 47,000	T	4630 (2)	- 5.1
N_09U00683 N_09U00104 N_09U00154	68,000 100,000 150,000	U	4840 (2)	- 5.3

NTC Disc Thermistors

Packaging for Automatic Insertion



PACKAGING AND KINK SUFFIXES

Tables below indicate the suffixes to specify when ordering to get the required kink and packaging. For devices on tape, it is necessary to specify the height (H or Ho) which is the distance between the tape axis (sprocket holes axis) and the seating plane on the printed circuit board. The following types can be ordered on tape either in AMMOPACK (fan folder) or on REEL in accordance with IEC 286-2.

– Straight leads:

H represents the distance between the sprocket holes axis and the bottom plane of component body (base of resin or base of stand off).

– Kinked leads and flat leads:

Ho represents the distance between the sprocket holes axis and the base on the knee (kinked leads) or the bottom of the flat part (flat leads).

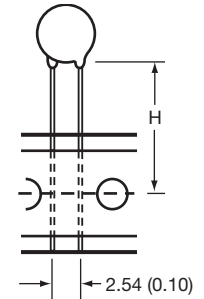
• Reel & Ammopack

millimeters (inches)

Types	Suffix	H or Ho	Leads	Quantity/Size	Packaging
ND/NE 03 & NJ28	CA	16 ± 0.5 (0.630 ± 0.020)	Straight	3000	AMMOPACK
	CB	16 ± 0.5 (0.630 ± 0.020)	Straight	3000	REEL
	CC	19.5 ± 0.5 (0.768 ± 0.020)	Straight	3000	AMMOPACK
	CD	19.5 ± 0.5 (0.768 ± 0.020)	Straight	3000	REEL
NP30	CA	16 ± 0.5 (0.630 ± 0.020)	Straight	1500	AMMOPACK
	CB	16 ± 0.5 (0.630 ± 0.020)	Straight	1500	REEL
	CC	19.5 ± 0.5 (0.768 ± 0.020)	Straight	3000	AMMOPACK
	CD	19.5 ± 0.5 (0.768 ± 0.020)	Straight	3000	REEL
ND/NE/NV 06/09	DA	16 ± 0.5 (0.630 ± 0.020)	Straight	1500	AMMOPACK
	DB	16 ± 0.5 (0.630 ± 0.020)	Straight	1500	REEL
	DC	19.5 ± 0.5 (0.768 ± 0.020)	Straight	1500	AMMOPACK
	DD	19.5 ± 0.5 (0.768 ± 0.020)	Straight	1500	REEL
	DL	16 ± 0.5 (0.630 ± 0.020)	Kinked	1500	AMMOPACK
	DM	16 ± 0.5 (0.630 ± 0.020)	Kinked	1500	REEL
	DN	19.5 ± 0.5 (0.768 ± 0.020)	Kinked	1500	AMMOPACK
	DP	19.5 ± 0.5 (0.768 ± 0.020)	Kinked	1500	REEL

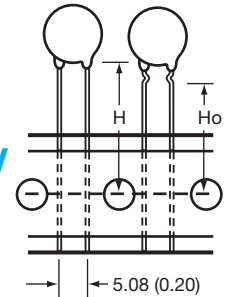
NTC

Type
ND03
NE03
NJ28
NP30



NTC

Types
ND/NE/NV
06/09



• Bulk

Type	Quantity/box
ND/NE03	3000
ND/NE06	1500
ND/NE09	1500
NV06	100
NV09	100
NI24 NJ28 NK20 NP30	1000



Tables of Resistance vs Temperature

T (°C)	Material B(K)		
	T 4630		
	R(T) / R25	TF (%)	α (%/°C)
-55	137.06	27.2	-7.33
-50	94.94	23.5	-7.15
-45	66.35	20.2	-6.98
-40	46.78	17.3	-6.82
-35	33.25	14.7	-6.66
-30	23.84	12.4	-6.50
-25	17.23	10.3	-6.35
-20	12.54	8.5	-6.20
-15	9.206	6.9	-6.05
-10	6.807	5.6	-5.91
-5	5.070	4.3	-5.77
0	3.803	3.3	-5.63
5	2.873	2.4	-5.50
10	2.185	1.6	-5.36
15	1.673	1.0	-5.23
20	1.289	0.4	-5.11
25	1.0000	0.0	-4.99
30	0.7805	0.4	-4.86
35	0.6129	0.9	-4.75
40	0.4841	1.4	-4.63
45	0.3847	2.0	-4.52
50	0.3074	2.6	-4.41
55	0.2470	3.3	-4.30
60	0.1996	4.0	-4.19
65	0.1621	4.7	-4.09
70	0.1323	5.4	-3.99
75	0.1086	6.2	-3.89
80	0.08951	7.0	-3.80
85	0.07416	7.8	-3.71
90	0.06172	8.6	-3.62
95	0.05160	9.5	-3.53
100	0.04333	10.3	-3.44
105	0.03655	11.2	-3.36
110	0.03095	12.0	-3.28
115	0.02632	12.9	-3.20
120	0.02246	13.7	-3.12
125	0.01925	14.6	-3.05
130	0.01656	15.5	-2.97
135	0.01429	16.4	-2.90
140	0.01238	17.3	-2.83
145	0.01076	18.1	-2.77
150	0.009383	19.0	-2.70

T (°C)	Material B(K)		
	U 4840		
	R(T) / R25	TF (%)	α (%/°C)
-55	173.74	28.5	-7.69
-50	118.20	24.6	-7.50
-45	81.18	21.2	-7.32
-40	56.26	18.1	-7.15
-35	39.34	15.4	-6.98
-30	27.75	12.9	-6.82
-25	19.74	10.8	-6.66
-20	14.15	8.9	-6.50
-15	10.23	7.3	-6.34
-10	7.457	5.8	-6.19
-5	5.476	4.5	-6.04
0	4.051	3.4	-5.90
5	3.020	2.5	-5.76
10	2.267	1.7	-5.62
15	1.714	1.0	-5.48
20	1.305	0.5	-5.35
25	1.0000	0.0	-5.22
30	0.7715	0.4	-5.09
35	0.5991	0.9	-4.97
40	0.4681	1.5	-4.84
45	0.3680	2.1	-4.72
50	0.2911	2.8	-4.61
55	0.2316	3.4	-4.49
60	0.1853	4.2	-4.38
65	0.1491	4.9	-4.28
70	0.1206	5.7	-4.17
75	0.09812	6.5	-4.07
80	0.08022	7.3	-3.97
85	0.06591	8.2	-3.87
90	0.05442	9.0	-3.77
95	0.04515	9.9	-3.68
100	0.03763	10.8	-3.59
105	0.03150	11.7	-3.50
110	0.02649	12.6	-3.42
115	0.02237	13.5	-3.33
120	0.01897	14.4	-3.25
125	0.01615	15.3	-3.17
130	0.01380	16.2	-3.10
135	0.01184	17.1	-3.02
140	0.01020	18.0	-2.95
145	0.008814	19.0	-2.88
150	0.007643	19.9	-2.81