

NTC Thermistor for surge-current protection

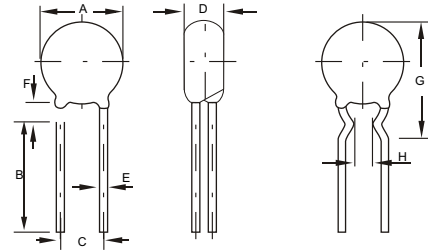
NSP Series

Features

This NSP Series thermistor is ideal for suppress the surge current caused by switching-on inductive or capacitive load, electric shock of power supply. The good performance provides safe and reliable protection to your equipment.

Figure & dimensions (mm)

	Dmax.	Tmax.	d	Lmin.	Pitch	F(max)	G	H(min)
9NSP	10.5	5	0.6	25	5±1	4	18±2.0	3.0
11NSP	12.5	5	0.8	25	5±1	4	20±2.0	3.0
13NSP	14.5	6	0.8	25	7.5±1	4	22±3.0	4.5
15NSP	16.5	6	1.0	25	7.5±1/10±1	4	24±3.5	4.5
20NSP	22	7	1.0	25	7.5±1/10±1	4	28±3.5	4.5



A

B

Electrical Characteristics

Part No..	Rated Resistance at 25°C (Ω)(±20%)	Max steady current (A)	Approx Resistance at max current(Ω)	Dissipation constant (mW/°C)	Thermal time constant (sec)	Part No.	Rated Resistance at 25°C (Ω)(±20%)	Max steady current (A)	Approx Resistance at max current(Ω)	Dissipation constant (mW/°C)	Thermal time constant (sec)
9NSP03	3	4	0.120	11	35	13NSP07	7	4	0.188	15	65
9NSP04	4	3	0.190	11	35	13NSP08	8	4	0.194	15	60
9NSP05	5	3	0.210	11	34	13NSP10	10	4	0.206	15	65
9NSP06	6	2	0.315	11	34	13NSP12	12	3	0.316	16	65
9NSP08	8	2	0.400	11	32	13NSP15	15	3	0.335	16	60
9NSP10	10	2	0.458	11	32	13NSP16	16	3	0.338	16	60
9NSP12	12	1	0.652	11	32	13NSP20	20	3	0.372	16	65
9NSP16	16	1	0.802	11	31	13NSP30	30	2.5	0.517	16	65
9NSP20	20	1	0.864	11	30	15NSP1R3	1.3	8	0.048	18	68
9NSP30	30	1	1.022	11	30	15NSP1R5	1.5	8	0.052	19	69
9NSP50	50	1	1.252	11	30	15NSP2R5	2.5	7	0.070	19	79
9NSP80	80	0.8	2.010	11	30	15NSP03	3	7	0.075	18	76
11NSP2R5	2.5	5	0.095	13	43	15NSP04	4	6	0.097	20	76
11NSP03	3	5	0.100	13	43	15NSP05	5	6	0.112	20	76
11NSP04	4	4	0.150	13	44	15NSP06	6	5	0.155	20	80
11NSP05	5	4	0.156	13	45	15NSP07	7	5	0.173	20	80
11NSP06	6	3	0.240	13	45	15NSP08	8	5	0.178	20	80
11NSP08	8	3	0.255	13.5	47	15NSP10	10	5	0.180	20	75
11NSP10	10	3	0.275	14	47	15NSP12	12	4	0.250	20	75
11NSP12	12	2	0.426	14	48	15NSP15	15	4	0.268	21	85
11NSP16	16	2	0.470	14	50	15NSP16	16	4	0.276	21	70
11NSP20	20	2	0.512	15	52	15NSP20	20	4	0.288	17	86
11NSP30	30	1.5	0.667	15	52	15NSP30	30	3.5	0.438	18	75
11NSP50	50	1.5	1.021	15	51	20NSP0R7	0.7	12	0.018	25	89
11NSP80	80	1.2	1.656	15	51	20NSP1R3	1.3	9	0.037	24	88
13NSP1R3	1.3	7	0.062	13	60	20NSP03	3	8	0.055	24	88
13NSP1R5	1.5	7	0.073	13	60	20NSP05	5	7	0.087	23	87
13NSP2R5	2.5	6	0.088	13	60	20NSP06	6	6	0.113	25	103
13NSP03	3	6	0.092	14	60	20NSP08	8	6	0.142	25	105
13NSP04	4	5	0.120	15	67	20NSP10	10	6	0.162	24	102
13NSP05	5	5	0.125	15	68	20NSP12	12	5	0.195	24	100
13NSP06	6	4	0.170	15	65	20NSP16	16	5	0.212	25	100

(REMARK: We can supply the items of diameter is 7mm, 8mm, 10mm, 18mm, 22mm, 25mm, 30mm, 35mm etc. besides the above sizes.)

L-T Character curve :



Ordering Code:

9 **NSP** **03** **M** **A**
 | | | | |
 Figure of Lead
 Tolerance (J: ±5%, K: ±10%, M: ±20%)
 Rated Resistance (03: 3Ω)
 Series No.
 Diameter of inner chip (max)



NTC Thermistor for surge-current protection MOT Series super high-power NTC



Features

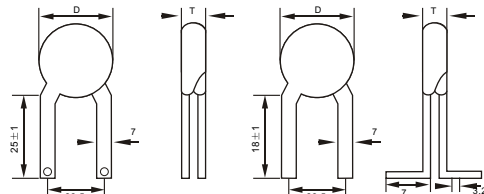
This MOT Series is used for surge-current protection in super power-converter, switchmode power-supply, UPS power-supply, high-power lighting and electric heater. It is made of high-pure material via special technics. It can be installed in the condition of over-heating and over-current and keep working under the big steady current. This Series with the biggest steady current is the best one for surge-current protection. Two types are available: MOT A Series and MOT B Series.

Electrical characteristics(MOT A Series) Operating temperature:-55~+200°C

Part No..	Rated Resistance(Ω) (Tol: $\pm 20\%$)	Max steady current (A)	Approx Resistance at max current(Ω)	Dissipation constant (mW/ $^{\circ}\text{C}$)	Thermal time constant(sec)
Diameter: 30mm					
0.7/14	0.7	14	0.061	45	140
1/11	1	11	0.089	45	140
1.5/11	1.5	11	0.099	43	139
2/10	2	10	0.117	43	139
3/10	3	10	0.120	43	139
5/9	5	9	0.148	41	137
8/8	8	8	0.179	45	140
10/8	10	8	0.188	43	139
16/7	16	7	0.232	45	140
20/7	20	7	0.245	45	140
30/6	30	6	0.333	45	140
Diameter: 35mm					
0.7/15	0.7	15	0.064	50	152
1/12	1	12	0.093	50	152
1.5/12	1.5	12	0.101	47	151
2/11	2	11	0.115	47	151
3/11	3	11	0.120	47	151
5/10	5	10	0.145	45	149
8/9	8	9	0.173	50	152
10/9	10	9	0.170	47	151
16/8	16	8	0.217	50	152
20/8	20	8	0.226	50	152
30/7	30	7	0.296	50	152
Diameter: 45mm					
0.7/17	0.7	17	0.059	66	201
1/14	1	14	0.078	66	201
1.5/14	1.5	14	0.087	62	200
2/13	2	13	0.096	62	200
3/13	3	13	0.101	62	200
5/12	5	12	0.118	60	197
8/11	8	11	0.134	66	201
10/11	10	11	0.140	62	200
16/10	16	10	0.163	60	201
20/10	20	10	0.170	60	201
30/9	30	9	0.210	60	201
Diameter: 60mm					
0.5/25	0.5	25	0.032	94	285
0.7/20	0.7	20	0.050	94	285
1/17	1	17	0.062	94	285
1.5/17	1.5	17	0.069	88	284
2/16	2	16	0.075	88	284
3/16	3	16	0.078	88	284
5/15	5	15	0.089	85	280
8/14	8	14	0.098	94	285
10/14	10	14	0.102	88	284
16/13	16	13	0.113	85	280
20/13	20	13	0.118	85	280
30/12	30	12	0.138	85	280

Figure and Dimensions(mm)

Inner Diameter($\pm 1\%$)	30	35	45	60
Outside Diameter(max)	35	40	50	65
Thickness(max)	10	12	12	12

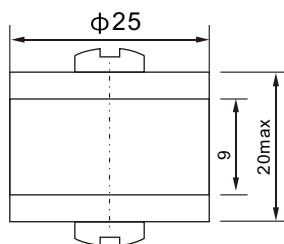


MOT B Series can work under 12A~40A steady current.

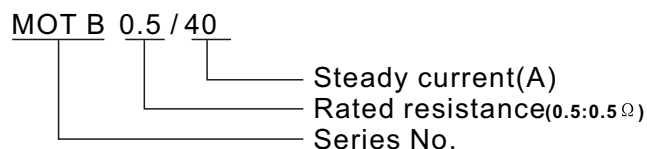
Electrical characteristics(Operating temperature:-55~+200°C)

Part No.	Rated Resistance(Ω) (Tol: $\pm 20\%$)	Max steady current (A)	Approx Resistance at max current(Ω)	Dissipation constant (mW/ $^{\circ}$ C)	Thermal time constant(sec)
0.5/40	0.5	40	0.00875	118	340
0.7/36	0.7	36	0.0110	118	340
1/32	1	32	0.0137	118	340
1.3/27	1.3	27	0.0192	118	340
1.5/27	1.5	27	0.0206	118	340
2/25	2	25	0.0240	120	340
2.5/25	2.5	25	0.0252	120	350
3/23	3	23	0.0293	123	350
4/21	4	21	0.0340	123	350
5/21	5	21	0.0364	123	350
6/18	6	18	0.0494	123	355
8/18	8	18	0.0525	125	360
10/18	10	18	0.0555	125	360
12/15	12	15	0.0622	125	345
16/15	16	15	0.0688	125	345
20/15	20	15	0.0745	125	345
25/15	25	15	0.0857	125	345
30/12	30	12	0.0117	125	350

Figure and Dimensions(mm)



Ordering Code



NTC Thermistor for temperature measurement
MF57 Series

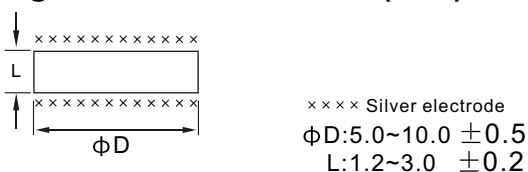
Features

This Series is used to measure temperature in refrigerant system on automobile, oil-dipped transformer, huge electric machine etc. It also can work under big steady current and best for surge-current protection.

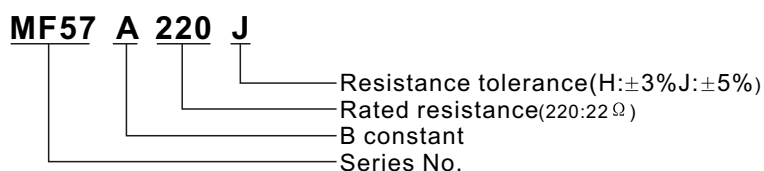
Electrical characteristics

Part No.	Rated Resistance(Ω) (Tol: $\pm 3\%$, $\pm 5\%$)	B constant (Tol: $\pm 3\%$, $\pm 5\%$)	B constant code	Rated power: 0.3W, 0.5W Test power: ≤ 0.15 mW Terminal time constant: ≤ 60 S Dissipation constant:6-13mW/ $^{\circ}$ C Operating temperature:-55-+125 $^{\circ}$ C
MF57-1	220-630	2700	A	
MF57-2	220-5.1K	3000	B	
MF57-3	270-5.1K	3300	C	
MF57-4	270-5.1K	3600	D	
MF57-5	270-6.3K	3900	E	
MF57-6	330-6.8K	4100	F	
MF57-7	330-6.8K	4300	G	
MF57-8	330-10K	4700	H	

Figure and Dimensions(mm)



Ordering Code



NTC Thermistor for precise temperature compensation

NDC Series

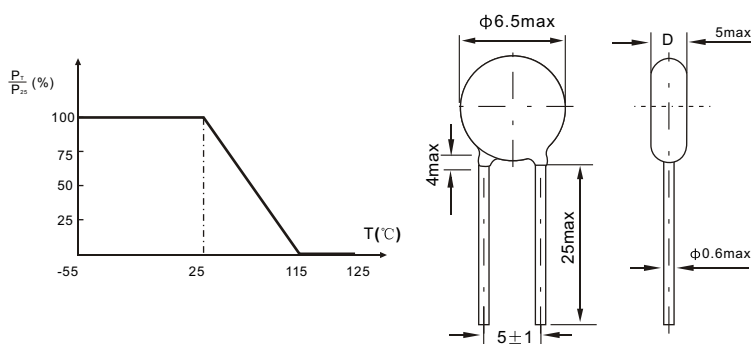
Features

This NDC Series is used in precise temperature compensation, it also can be widely used for temperature control and measurement. Two figures: disc and tube are available.

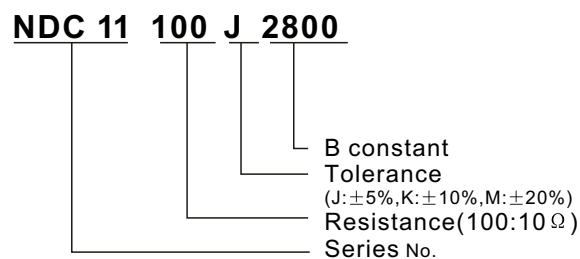
Electrical characteristics

Part No.	Rated Resistance(Ω) (Tol: $\pm 5\%$, $\pm 10\%$, $\pm 20\%$)	B constant (Tol: $\pm 5\%$)	Terminal time constant(Sec.) $\leq 30S$ Test power $\leq 0.1mW$ Operation Temp.: -55 - $+125^{\circ}C$ Dissipation constant $\geq 6mW/^{\circ}C$ Rated power: $0.5W$
NDC11	10-15000	2800-4475	
NDC12	1K-2M	3500K-5500M	

L-T Character curve : Figure and Dimensions:

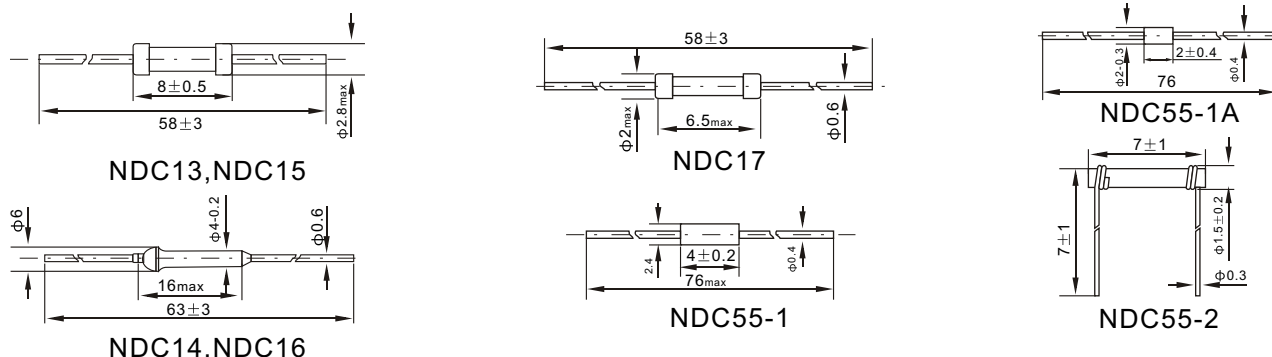


Ordering Code



Part No.	Rated Resistance(Ω) (Tol: $\pm 5\%$, $\pm 10\%$, $\pm 20\%$)	B constant (Tol: $\pm 5\%$)	Rated power (W)	Dimension (mm)	Operating temperature: -55 - $125^{\circ}C$
NDC13	0.1-300	2430-3630	0.25	$\phi 2.8 \times 8$	
NDC14	0.1-300	2430-3630	0.5	$\phi 6 \times 16$	
NDC15	10-1000	3510-5170	0.25	$\phi 2.8 \times 8$	
NDC16	10-1000	3510-5170	0.5	$\phi 6 \times 16$	
NDC17	6.8-1000	3510-5170	0.25	$\phi 2 \times 6.5$	
NDC55-1	4.7-13	3510-4290	0.125	$\phi 2.4 \times 4$	
NDC55-1A	6.8-15	3510-4290	0.125	$\phi 2 \times 2$	
NDC55-2	8.2-100	2430-3630	0.125	$\phi 1.5 \times 7$	

Figure and Dimensions(mm)



NTC thermistor for temperature compensation Chip NTC Series



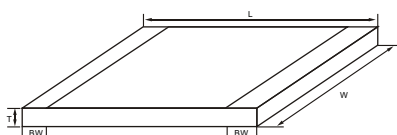
Features

This Series is used for temperature compensation in home appliance, industrial equipments and IC circuit. It also can be widely used for temperature control and measurement.

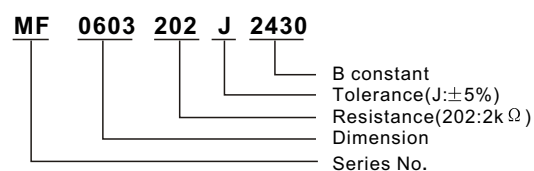
Electrical characteristics

Part No.	Dimension(mm)			Rated resistance (Ω)	B constant	Rated Power(W)	Operating temperature($^{\circ}$ C)
	L	W	T _{MAX}				
MF0603	1.6	0.8	0.9	2K-1M	2430-5170	0.05	-55--+125
MF0805	2.0	1.25	1.30	1K-1M	2430-5170	0.625	
MF1206	3.2	1.6	1.5				
MF1210	3.2	2.5	1.7	1K-1M	2430-5170	0.1	
Mf1812	4.5	3.2	1.7	500-1M	2430-5170	0.125	

Figure and Dimensions(mm)



Ordering code:



NTC Thermistor for temperature control and measurement MF52 E Series



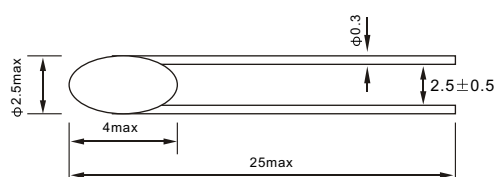
Features

This MF52 E Series is used for temperature control and measurement in air condition, air heater, electric thermometer, hydraulic sensor, automobile electron and electric table-calendar. It is with high precision, small size, rapid reaction and good stability.

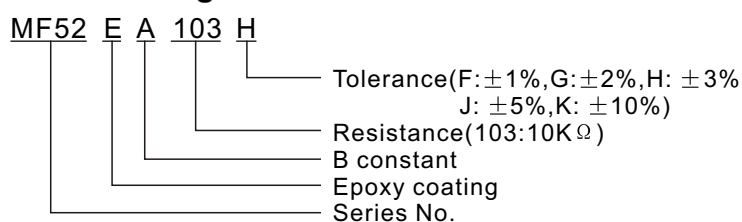
Electrical characteristics

Part No.	Rated Resistance(Ω) (Tol: $\pm 1\%$, $\pm 2\%$, $\pm 3\%$, $\pm 5\%$, $\pm 10\%$)	B constant (Tol: $\pm 1\%$, $\pm 2\%$)		Dissipation constant	Terminal time constant	Operating temperature
		Code	Value			
MF52EA	100-10K	A	3100K	$\geq 2.5\text{mW}/^{\circ}\text{C}$	$\leq 7\text{S}$	-40~+150 $^{\circ}$ C
MF52EB	200-10K	B	3270			
MF52EC	500-15K	C	3470			
MF52ED	1K-15K	D	3600			
MF52EE	5K-50K	E	3950			
MF52EF	10K-100K	F	4050			
MF52EG	10K-100K	G	4150			
MF52EH	20K-500K	H	4300			

Figure and Dimensions(mm)



Ordering Code:





NTC Thermistor for temperature control and measurement MF54 Series

Feature

This Series is suitable for temperature measuring system and temperature auto-control system in home appliance, OA machine, industrial equipment, mobile battery etc. It is also can be used for temperature compensation in IC circuit, crystal resonator etc.

Descriptions

1.Small size 2.Good stability 3.Easy for roboticized assembly

MF54-Axial

Electrical characteristics

Rated resistance: 0.1~1000K Ω

Tolerance: $\pm 1\%$, $\pm 2\%$, $\pm 3\%$, $\pm 5\%$, $\pm 10\%$

B constant: 1960-4500

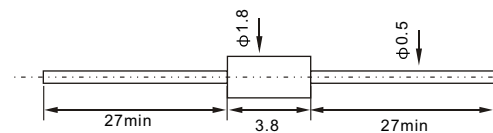
Dissipation constant: $\geq 2\text{mW}/^\circ\text{C}$

Terminal time constant: $\leq 20\text{S}$

Operating temperature: $-55\text{--}+250^\circ\text{C}$

Rated power: $\leq 50\text{mW}$

Figure and Dimensions(mm)



MF54-AXIAL

MF54-1, MF54-1A, MF54-1B

Electrical characteristics

Rated resistance: 1-1M Ω

Tolerance: $\pm 5\%$, $\pm 10\%$, $\pm 20\%$

B constant: 3000-4700

Temperature constant: $-(4.2\text{--}4.8)\%/^\circ\text{C}$

Max permissible power: $\leq 30\text{mW}$

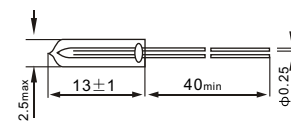
Terminal time constant: $\leq 0.5\text{S}$

Measure power: $\leq 0.1\text{mW}$

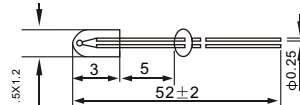
Max operating temperature: 250°C

Operating temperature: $-10\text{--}+200^\circ\text{C}$

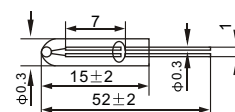
Figure and Dimensions(mm)



MF54-1



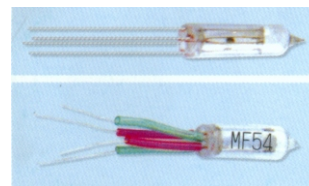
MF54-1A



MF54-1B

Ordering code:

MF54-1A 1R0 J 1960



NTC Thermistor sensors NSR/NSA Series

Features

This NSA/NSR Series is used for temperature measurement and control; it can be widely used in home appliance, OA machine and industrial.

Electrical characteristics(NSR Series)

Rated resistance (Tol:±1%,±2%,±3%) (Ω)	B constant (25℃/50℃)		Dissipation constant (mW/℃)	Thermal time constant (sec)	Operating temperature (℃)
	Code	B constant(K) (Tol:±1%,±2%)			
100~20K	A	3100	1.6-----5 *Epoxy coating:≥2.5 *Aluminum shell,copper shell,stainless steel shell:≥4.2	7-----70 *Epoxy coating:≤15 *Aluminum shell,copper shell,stainless steel shell:≤40	-40~+125
200~20K	B	3270			
500~50K	C	3380			
500~50K	D	3435			
500~50K	E	3470			
1K~100K	F	3600			
5K~100K	G	3950			
5K~100K	H	4000			
5K~200K	I	4050			
10K~250K	RFK	4150			
20K~1000K	L	4300			
20K~1000K		4500			

Figures and dimensions(mm)

1.Epoxy coating

D	3	5	6	7
L1	5	10	15	15
L2	On customers' requirement			

Characteristic: Anti-humidity, high insulation, high stability, low time-constant and quick-reaction.

2.Aluminum shell, copper shell, and stainless steel shell

D	3	5	5	5	6	6	6
L1	20	20	25	30	20	25	30
L2	On customers' requirement						

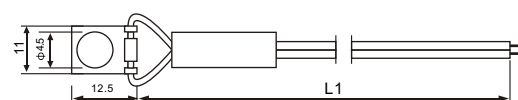
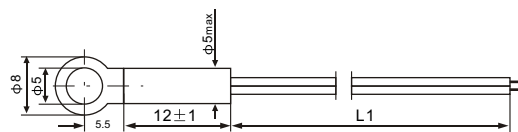
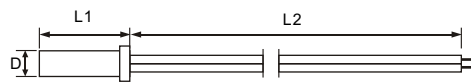
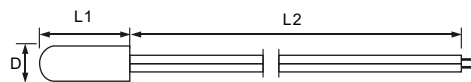
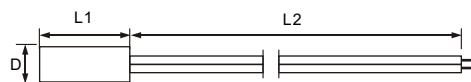
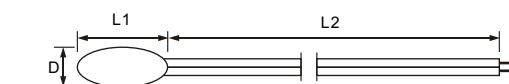
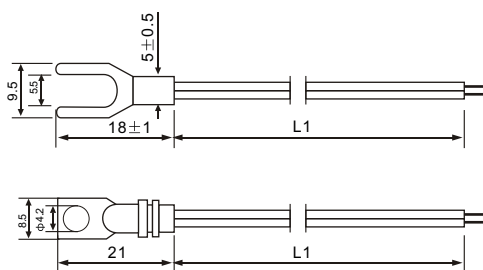
Characteristic: High stability under heat-shock, anti-humidity, fixed structure, high dissipation constant, biggest test current than epoxy coating on same size.

3.Plastic shell

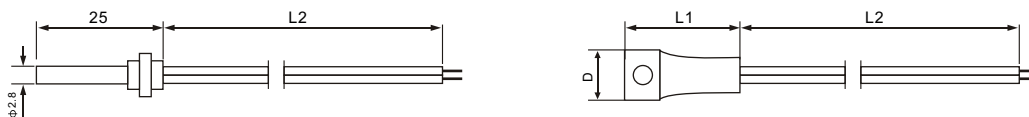
D	2	3	4	5
L1	8	15	15	15
L2	On customers' requirement			

D	8	8
L1	35	50
L2	On customers' requirement	

4.Fix metal head

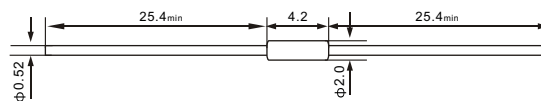


5. Other type:



NSA Series ----Axiallead, DO-35 Glass Encapsuled.

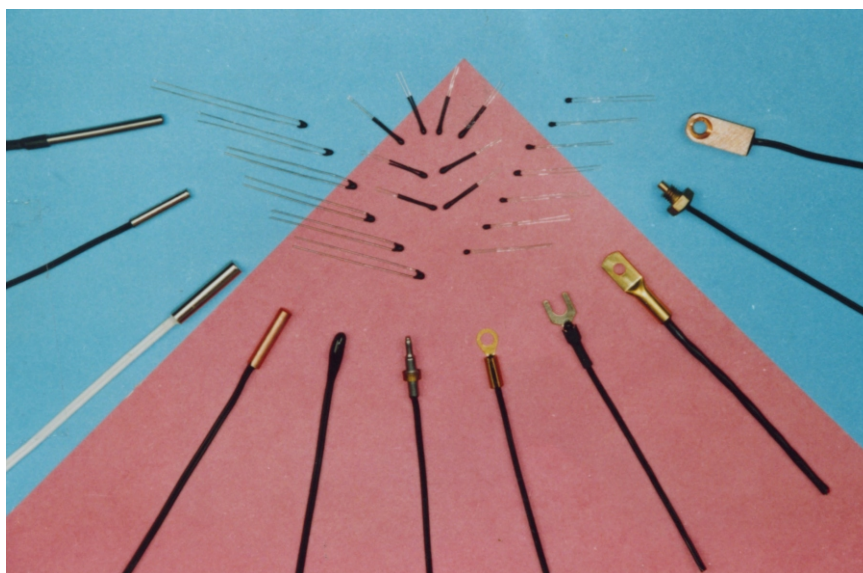
Part No.	Rated resistance (Ω)	B constant (K+/-3%)	Max. Testing power(mW)	Dissipation constant(mW/°C)	Thermal time constant(Sec.)
NSA -103	10K	3400	0.02	2	15
NSA-203	20K	3500	0.02	2	15
NSA-503	50K	3700	0.02	2	15
NSA-104	100K	3850	0.02	2	15



Ordering Code

NSR 1 A 103 J

- Series No.
- Coating 1: Epoxy coating
- 2: Aluminum, copper, stainless steel shell
- 3: Plastic shell
- 4: Fix metal head
- 5: Other type
- B constant (A: 3100k, B: 3270k) <sec Chart-1>
- Resistance (103: 10K)
- Tolerance (F: 1%, G: 2%, H: 3%, J: 5%)



Customers' designs are welcome