

# NTC THERMISTOR

## Introduction:

NTC (Negative temperature coefficient) thermistor is a semiconductor made from metallic oxides. It exhibits an electrical resistance that has a very predictable change with temperature. The resistance varies significantly with temperature, more so than in standard resistors. They are extremely sensitive to temperature change, very accurate and interchangeable. They have a wide temperature envelope and can be hermetically sealed for use in humid environments.

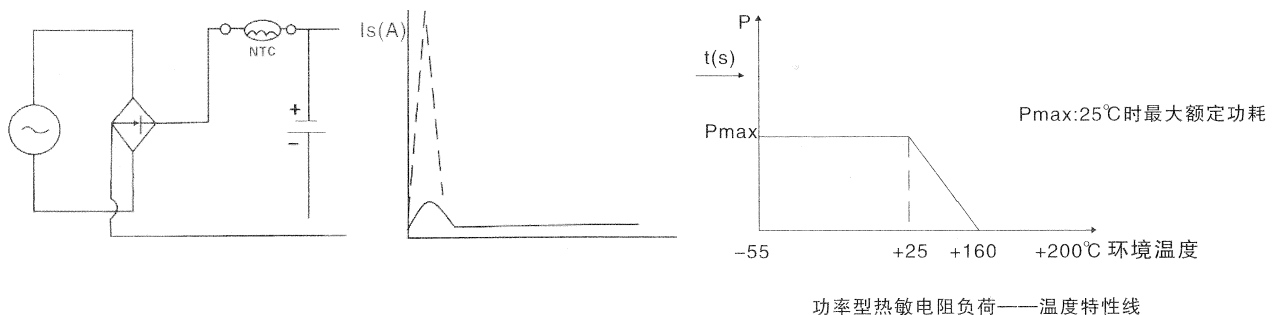
## Features:

- \* Longevity of service, high reliability
- \* Small size, powerful, strong capability of surge current protection
- \* Instant response to surge current
- \* Wide operation range
- \* Big material constant (B value), low remain resistance.

## Application:

Thermistors are widely used as

- \* Inrush current limiters
- \* Temperature sensors
- \* Self-resetting overcurrent protectors
- \* Self regulating heating elements
- \* Conversion power, switch mode power supply, UPS power protection
- \* Energy saving lights, electronic ballast filament protection
- \* Electronic circuit, power supply circuit protection



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## How to select:

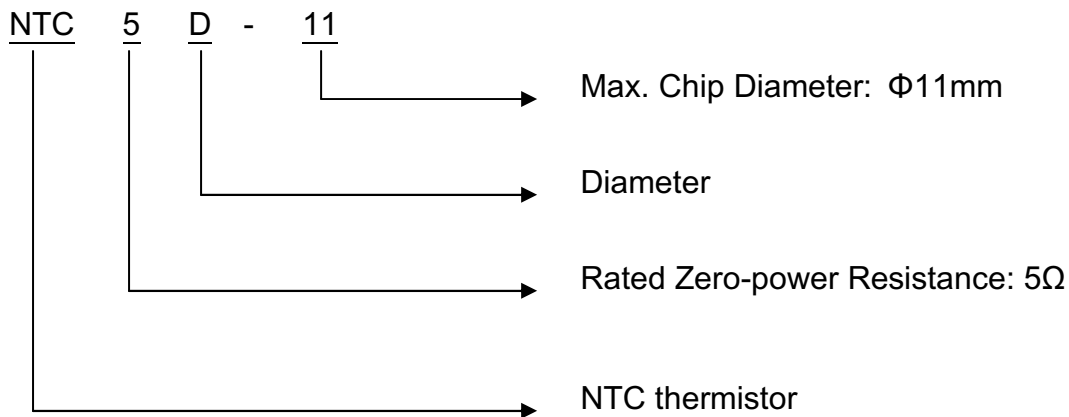
1. Maximum operating current > Actual operating current in the power loop
2. Rated zero power resistance at 25°C

$$R \geq \frac{\sqrt{2} E}{I_m} \quad \text{Of which, E: loop voltage, } I_m: \text{ Surge current}$$

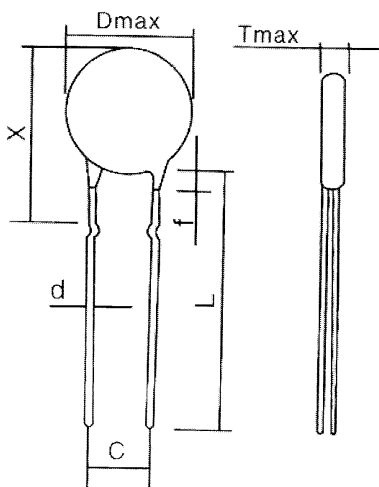
For conversion power, reversion power, switch power, UPS power,  $I_m = 100$  times operating current.

For filament, heater,  $I_m = 30$  times operating current.

## Marking:



## Dimension:



Diameter	Size (mm)				
	D max.	L max.	C ± 1	T max.	d ± 0.5
5	6.5	31	5	4	0.55
7	8	31	5	4	0.55
8	9	31	5	5	0.7
9	10	31	7.5	5	0.7
10	11	31	7.5	5	0.8
11	12	31	7.5	5	0.8
13	14.5	30	7.5	6	0.8
15	16.4	30	7.5	6	1
20	22	29	7.5/10	7	1

\* Size X depends on customer's requirement.

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## Specification:

Dia. (Φ)	Parameter	Zero Power Resistance at 25°C	Max. Steady State Current	Max. Current Remain Resistance	Thermal Dissipation Constant	Thermal Time Constant	Operating Temperature
		R25 (Ω)	(A)	(mΩ)	(mW/°C)	(s)	(°C)
5	NTC5D5	5	1	261	7	16	-40 ~ 150
	NTC8D5	8	0.8	487	7	16	
	NTC10D5	10	0.8	642	7	16	
	NTC16D5	16	0.5	1093	5	16	
	NTC20D5	20	0.5	1386	5	16	
	NTC22D5	22	0.3	5560	5	17	
7	NTC5D7	5	2	241	9	23	
	NTC8D7	8	1.5	436	9	23	
	NTC10D7	10	1.5	572	9	23	
	NTC16D7	16	1.5	897	9	23	
	NTC22D7	22	1	1083	8	23	
8	NTC4D8	4	2	261	17	31	
	NTC5D8	5	3	283	17	36	
	NTC6D8	6	3	441	17	36	
	NTC8D8	8	2	520	16	36	
	NTC10D8	10	2	542	17	38	
	NTC16D8	16	2	548	15	38	
	NTC20D8	20	1	1544	17	41	
	NTC30D8	30	0.5	4094	16	33	
9	NTC3D9	3	4	133	11	35	-40 ~ 170
	NTC4D9	4	3	191	11	35	
	NTC5D9	5	3	236	11	35	
	NTC6D9	6	2	318	11	35	
	NTC8D9	8	2	382	11	34	
	NTC10D9	10	2	467	12	34	
	NTC16D9	16	2	688	12	32	
	NTC22D9	22	1.5	899	12	30	
	NTC25D9	25	1	914	12	30	
	NTC35D9	35	1	1103	12	30	
	NTC50D9	50	1	7265	11	28	
	NTC60D9	60	1	1521	11	28	
	NTC80D9	80	0.8	2108	11	28	
	NTC100D9	100	0.7	2576	11	28	
NTC220D9	220	0.5	5923	10	28		

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		R25 (Ω)	(A)	(mΩ)	(mW/°C)	(s)	(°C)
10	NTC2R5D10	2.5	5	120	18	46	-40 ~ 170
	NTC3D10	3	5	119	18	45	
	NTC4D10	4	4	161	16	40	
	NTC5D10	5	4	180	17	33	
	NTC6D10	6	3	278	17	43	
	NTC10D10	10	3	297	17	46	
	NTC12D10	12	3	301	18	50	
	NTC13D10	13	3	356	18	49	
	NTC15D10	15	2.5	442	17	51	
	NTC16D10	16	2	604	18	55	
	NTC20D10	20	2	646	17	54	
	NTC25D10	25	2	674	17	52	
	NTC30D10	30	2	700	17	50	
	NTC47D10	47	2	720	18	49	
	NTC50D10	50	2	1170	18	49	
	NTC80D10	80	1	2236	17	53	
NTC100D10	100	1	2318	17	45		
NTC120D10	120	1	2406	19	54		
11	NTC2R5D11	2.5	5	126	13	46	
	NTC3D11	3	5	126	13	46	
	NTC4D11	4	4	167	13	45	
	NTC5D11	5	4	228	13	45	
	NTC6D11	6	3	273	13	46	
	NTC8D11	8	3	301	13	45	
	NTC10D11	10	3	395	14	45	
	NTC16D11	16	2.5	488	14	48	
	NTC22D11	22	2.5	739	14	46	
	NTC25D11	25	2	838	14	46	
	NTC35D11	35	2	906	14	46	
	NTC50D11	50	1.5	1204	13	48	
	NTC60D11	60	1.5	1652	13	48	
	NTC80D11	80	1.3	1865	13	50	
NTC100D11	100	1	2217	13	52		

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		R25 (Ω)	(A)	(mΩ)	(mW/°C)	(s)	(°C)
13	NTC0R7D13	0.7	7	33	12	62	-40 ~ 170
	NTC1D13	1	7	58	12	62	
	NTC2R5D13	2.5	6	99	13	60	
	NTC3D13	3	6	112	14	60	
	NTD5D13	5	5	136	15	65	
	NTC6D13	6	4	190	15	68	
	NTC8D13	8	4	256	16	65	
	NTC10D13	10	4	271	16	60	
	NTC16D13	16	3.5	368	16	60	
	NTC22D13	22	3.5	492	16	60	
	NTC25D13	25	3	527	16	60	
	NTC35D13	35	3	843	16	58	
	NTC50D13	50	2	986	16	60	
	NTC60D13	60	2	1275	17	58	
NTC80D13	80	1.8	1498	17	58		
15	NTC0R1D15	0.1	12	22	16	79	
	NTC0R7D15	0.7	8	37	16	81	
	NTC1D15	1	8	49	17	81	
	NTC1R5D15	1.5	8	56	18	79	
	NTC2D15	2	7	73	19	76	
	NTC2R5D15	2.5	7	87	19	69	
	NTC3D15	3	7	94	19	65	
	NTC5D15	5	6	132	20	76	
	NTC6D15	6	5	168	20	76	
	NTC8D15	8	5	196	20	80	
	NTC10D15	10	5	255	20	80	
	NTC16D15	16	4	307	19	77	
	NTC22D15	22	4	393	19	77	
	NTC25D15	25	4	429	20	76	
NTC35D15	35	3.5	610	19	80		
NTC50D15	50	3	771	19	80		
20	NTC0R1D20	0.1	15	4	55	112	
	NTC0R7D20	0.7	12	26	55	109	
	NTC1D20	1	10	43	55	107	
	NTC2D20	2	9	62	27	88	
	NTC3D20	3	8.5	79	24	88	
	NTC5D20	5	8	106	24	86	
	NTC8D20	8	7	157	23	103	
	NTC10D20	10	6.5	194	23	118	
	NTC16D20	16	5.5	236	23	113	