

# NTC DISC THERMISTOR

FOR TEMPERATURE SENSING / FOR TEMPERATURE COMPENSATION



## NTC - 10K D-5 J

① ② ③ ④

- ① SYMBOL
- ② RESISTANCE AT 25°C (10K : 10kΩ)
- ③ NOMINAL DIA. OF DISC (D-2: 2mm, D-5: 5mm)
- ④ RESISTANCE TOLERANCE  
(F:±1%, G:±2%, H:±3%, J:±5%, K:±10%, L:±15%)

### RATINGS

PART No.	Rtaed power at 25°C	Dissipation constant	Time constant	Operating temp. range
D - 2	100 mW	2.0mW/°C	10 sec	-40°C~120°C
D - 3	250 mW	3.0mW/°C	15 sec	
D - 5	500 mW	7.5mW/°C	20 sec	

### SPECIFICATION

#### D-2

PART No.	Resistance (25°C)	B Value (25°C/85°C)
100D - 2	100 Ω	3000
1KD - 2	1 kΩ	3100/3200
2KD - 2	2 kΩ	3200
5KD - 2	5 kΩ	3300
10KD - 2	10 kΩ	3300/3435/3970
20KD - 2	20 kΩ	3300
30KD - 2	30 kΩ	3300
50KD - 2	50 kΩ	4000/4400
100KD - 2	100 kΩ	4400/4700
150KD - 2	150 kΩ	4400/4700
500KD - 2	500 kΩ	4700
1MD - 2	1 MΩ	5000

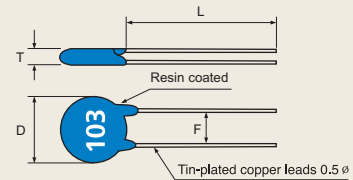
#### D-3

PART No.	Resistance (25°C)	B Value (25°C/85°C)
100D - 3	100 Ω	3200
500D - 3	500 Ω	3400
1KD - 3	1 kΩ	3650
2KD - 3	2 kΩ	3650
3KD - 3	3 kΩ	3800
5KD - 3	5 kΩ	3800/3970
10KD - 3	10 kΩ	3700/3970
20KD - 3	20 kΩ	4000/4200
30KD - 3	30 kΩ	4000/4200
40KD - 3	40 kΩ	4000/4400
50KD - 3	50 kΩ	4000/4400
100KD - 3	100 kΩ	4400/4700
150KD - 3	150 kΩ	4400/4700
200KD - 3	200 kΩ	4400/4700
500KD - 3	500 kΩ	4850
1MD - 3	1 MΩ	4850

### DIMENSIONS

PART No.	D	T	L	F
D - 2	3.0 max.	2.0 max.	25 min.	2.0/5.0±0.5
D - 3	3.5 max.	3.0 max.	25 min.	2.0/5.0±0.5
D - 5	5.5 max.	4.0 max.	25 min.	2.5/5.0±0.5

#### Outline drawing



#### D-5

PART No.	Resistance (25°C)	B Value (25°C/85°C)
10D - 5	10 Ω	2800
20D - 5	20 Ω	3000
50D - 5	50 Ω	3100/3250
80D - 5	80 Ω	3300
100D - 5	100 Ω	3200/3300
200D - 5	200 Ω	3200/3400
250D - 5	250 Ω	3200/3400
300D - 5	300 Ω	3200/3500
360D - 5	360 Ω	3500
500D - 5	500 Ω	3200/3650
650D - 5	650 Ω	3200/3650
800D - 5	800 Ω	3650/3850
1KD - 5	1 kΩ	3650/3850/3950
1.2KD - 5	1.2 kΩ	3650/3850/3950
1.5KD - 5	1.5 kΩ	3650/3850/3950
2KD - 5	2 kΩ	4000
3KD - 5	3 kΩ	4000
5KD - 5	5 kΩ	4100
6.8KD - 5	6.8 kΩ	4100
8KD - 5	8 kΩ	4200
10KD - 5	10 kΩ	4200
15KD - 5	15 kΩ	4200/4300
20KD - 5	20 kΩ	4200/4400
30KD - 5	30 kΩ	4200/4400
50KD - 5	50 kΩ	4100/4400/4650
100KD - 5	100 kΩ	4100/4650/4850
150KD - 5	150 kΩ	4100/4850
200KD - 5	200 kΩ	4100/4850
250KD - 5	250 kΩ	4850
330KD - 5	330 kΩ	5000
400KD - 5	400 kΩ	5000
470KD - 5	470 kΩ	5000/5500
680KD - 5	680 kΩ	5000/5500
1MD - 5	1 MΩ	5000/5500

TEMP. (°C)	NTC 5 KD - 2J RESISTANCE			NTC 20 KD - 2J RESISTANCE			NTC 10 KD - 3J RESISTANCE			NTC 100 KD - 3J RESISTANCE			TEMP. (°C)
	min.	center	max.	min.	center	max.	min.	center	max.	min.	center	max.	
-40	76.765	88.067	100.781	725.850	855.174	1,005.019	314.377	368.748	431.440	4,350.999	5,155.043	6,092.402	-40
-35	59.587	67.827	77.013	516.348	601.971	700.037	225.592	261.906	303.305	3,041.577	3,563.964	4,165.629	-35
-30	46.592	52.632	59.308	371.682	428.932	493.764	163.927	188.444	216.087	2,153.051	2,496.021	2,886.390	-30
-25	36.690	41.142	46.019	270.582	309.208	352.466	120.542	137.259	155.904	1,542.412	1,769.760	2,025.541	-25
-20	29.093	32.389	35.969	199.112	225.388	254.494	89.642	101.143	113.835	1,117.623	1,269.645	1,438.739	-20
-15	23.223	25.675	28.315	148.032	166.039	185.769	67.378	75.354	84.064	818.671	921.118	1,033.795	-15
-10	18.658	20.489	22.443	111.141	123.559	137.022	51.158	56.729	62.750	605.934	675.445	751.047	-10
-5	15.085	16.456	17.908	84.228	92.839	102.076	39.218	43.133	47.620	452.937	500.372	551.393	-5
0	12.270	13.300	14.381	64.405	70.403	76.768	30.340	33.105	36.032	341.784	374.305	408.894	0
5	10.038	10.814	11.621	49.670	53.861	58.260	23.677	25.637	27.690	260.245	282.615	306.140	5
10	8.260	8.844	9.447	38.620	41.554	44.600	18.630	20.023	21.467	199.874	215.290	231.315	10
15	6.833	7.274	7.724	30.264	32.319	34.427	14.774	15.766	16.782	154.777	165.401	176.313	15
20	5.683	6.015	6.351	23.894	25.330	26.786	11.805	12.510	13.224	120.803	128.110	135.518	20
25	4.750	5.000	5.250	19.000	20.000	21.000	9.500	10.000	10.500	95.000	100.000	105.000	25
30	3.947	4.177	4.410	15.004	15.903	16.813	7.597	8.049	8.507	74.171	78.640	83.169	30
35	3.296	3.507	3.722	11.931	12.731	13.550	6.118	6.523	6.937	58.336	62.285	66.335	35
40	2.766	2.958	3.155	9.552	10.258	10.989	4.959	5.320	5.693	46.205	49.669	53.259	40
45	2.332	2.506	2.687	7.695	8.317	8.965	4.045	4.365	4.699	36.844	39.868	43.032	45
50	1.975	2.133	2.298	6.238	6.783	7.357	3.320	3.603	3.901	29.570	32.202	34.982	50
55	1.680	1.823	1.973	5.087	5.564	6.071	2.740	2.991	3.256	23.879	26.167	28.603	55
60	1.435	1.564	1.701	4.171	4.589	5.036	2.274	2.496	2.732	19.398	21.387	23.519	60
65	1.231	1.348	1.472	3.439	3.805	4.199	1.898	2.093	2.304	15.849	17.576	19.443	65
70	1.060	1.165	1.278	2.856	3.171	3.519	1.591	1.765	1.952	13.020	14.522	16.157	70
75	0.915	1.011	1.114	2.374	2.656	2.963	1.341	1.494	1.661	10.753	12.060	13.493	75
80	0.794	0.881	0.974	1.987	2.234	2.506	1.135	1.271	1.420	8.925	10.065	11.322	80
85	0.691	0.770	0.855	1.671	1.888	2.128	0.965	1.086	1.219	7.445	8.440	9.544	85
90	0.604	0.675	0.753	1.412	1.603	1.815	0.825	0.932	1.051	6.239	7.109	8.081	90
95	0.529	0.594	0.665	1.197	1.366	1.555	0.707	0.803	0.909	5.252	6.015	6.871	95
100	0.465	0.524	0.589	1.020	1.169	1.337	0.609	0.694	0.790	4.440	5.110	5.867	100
105	0.410	0.464	0.523	0.872	1.004	1.154	0.526	0.603	0.689	3.770	4.359	5.029	105
110	0.363	0.411	0.466	0.749	0.866	0.999	0.457	0.525	0.602	3.214	3.734	4.327	110
115	0.322	0.366	0.416	0.645	0.750	0.869	0.397	0.459	0.529	2.750	3.210	3.737	115
120	0.286	0.327	0.372	0.558	0.651	0.758	0.347	0.403	0.466	2.363	2.769	3.238	120
$\beta(25/85) = 3300^{\circ}\text{K} \pm 3\%$				$\beta(25/85) = 4200^{\circ}\text{K} \pm 3\%$			$\beta(25/85) = 3970^{\circ}\text{K} \pm 3\%$			$\beta(25/85) = 4400^{\circ}\text{K} \pm 3\%$			

TEMP. (°C)	NTC 10 KD - 5J RESISTANCE			NTC 50 KD- 5J RESISTANCE			NTC 150 KD - 5J RESISTANCE			NTC 470 KD-5J RESISTANCE			TEMP. (°C)
	min.	center	max.	min.	center	max.	min.	center	max.	min.	center	max.	
-40	267.215	311.858	363.048	2,729.109	3,256.188	3,875.350	9,815.911	1,1777.577	14,095.946	307.566	36,903.179	44,167.422	-40
-35	199.515	230.753	266.214	1,866.595	2,201.083	2,589.022	6,597.369	7819.143	9,244.013	20,671.801	24,500.039	28,964.641	-35
-30	149.834	171.765	196.414	1,293.941	1,508.617	1,754.513	4,497.369	5267.447	6,153.961	14,091.782	16,504.698	19,282.449	-30
-25	113.194	128.642	145.832	908.522	1,047.732	1,205.252	3,107.395	3598.092	4,155.861	9,736.520	11,274.041	13,021.720	-25
-20	86.029	96.944	108.969	645.728	736.849	838.726	2,174.722	2490.496	2,844.992	6,814.136	7,803.566	8,914.321	-20
-15	65.780	73.513	81.949	464.309	524.452	590.905	1,540.688	1745.691	1,973.027	4,827.494	5,469.837	6,182.157	-15
-10	50.602	56.094	62.026	337.577	377.564	421.231	1,104.279	1238.392	1,385.321	3,460.077	3,880.299	4,340.678	-10
-5	39.160	43.067	47.246	248.041	274.790	303.663	800.312	888.617	984.198	2,507.647	2,784.335	3,083.824	-5
0	30.487	33.270	36.216	184.098	202.080	221.263	586.183	644.624	707.118	1,836.709	2,019.822	2,215.638	0
5	23.873	25.856	27.934	137.959	150.089	162.876	433.700	472.515	513.517	1,358.928	1,480.548	1,609.020	5
10	18.803	20.215	21.679	104.337	112.534	121.072	323.988	34.981	376.755	1,015.162	1,096.085	1,180.500	10
15	14.893	15.897	16.925	79.604	85.142	90.839	244.266	261.443	279.129	765.367	819.190	874.606	15
20	11.862	12.573	13.292	61.245	64.977	68.765	185.786	197.175	208.740	582.131	617.817	654.052	20
25	9.500	10.000	10.500	47.500	50.000	52.500	142.500	150.000	157.500	446.500	470.000	493.500	25
30	7.546	7.996	8.453	36.561	38.780	41.030	108.441	115.060	121.778	339.783	360.523	381.573	30
35	6.027	6.429	6.840	28.362	30.306	32.303	83.199	88.962	94.885	260.693	278.748	297.309	35
40	4.840	5.195	5.563	22.166	23.856	25.612	64.334	69.307	74.478	201.582	217.164	233.365	40
45	3.906	4.220	4.547	17.448	18.910	20.443	50.121	54.389	58.873	157.046	170.420	184.471	45
50	3.169	3.444	3.734	13.829	15.089	16.424	39.329	42.980	46.854	123.231	134.673	146.810	50
55	2.584	2.825	3.081	11.033	12.118	13.277	31.073	34.192	37.531	97.364	107.138	117.597	55
60	2.117	2.328	2.553	8.858	9.791	10.796	24.714	27.376	30.250	77.437	85.780	94.785	60
65	1.742	1.927	2.125	7.155	7.958	8.830	19.780	22.054	24.528	61.980	69.104	76.855	65
70	1.440	1.602	1.777	5.813	6.505	7.261	15.929	17.872	20.002	49.910	56.000	62.675	70
75	1.196	1.337	1.492	4.749	5.346	6.002	12.902	14.565	16.402	40.427	45.639	51.393	75
80	0.997	1.121	1.257	3.901	4.416	4.987	10.509	11.935	13.521	32.930	37.398	42.366	80
85	0.835	0.944	1.064	3.221	3.667	4.164	8.607	9.831	11.202	26.969	30.806	35.102	85
90	0.702	0.797	0.903	2.672	3.059	3.493	7.085	8.139	9.327	22.201	25.505	29.226	90
95	0.593	0.676	0.770	2.228	2.564	2.943	5.862	6.771	7.803	18.368	21.218	24.449	95
100	0.502	0.576	0.659	1.866	2.159	2.491	4.873	5.660	6.557	15.271	17.735	20.546	100
105	0.427	0.492	0.565	1.570	1.825	2.117	4.070	4.752	5.534	12.754	14.890	17.341	105
110	0.364	0.422	0.487	1.326	1.550	1.806	3.415	4.007	4.690	10.700	12.556	14.698	110
115	0.312	0.363	0.421	1.125	1.321	1.547	2.877	3.393	3.992	9.016	10.633	12.508	115
120	0.268	0.313	0.365	0.958	1.130	1.330	2.434	2.885	3.410	7.628	9.040	10.686	120
$\beta(25/85) = 4200^{\circ}\text{K} \pm 3\%$				$\beta(25/85) = 4650^{\circ}\text{K} \pm 3\%$			$\beta(25/85) = 4850^{\circ}\text{K} \pm 3\%$			$\beta(25/85) = 5000^{\circ}\text{K} \pm 3\%$			