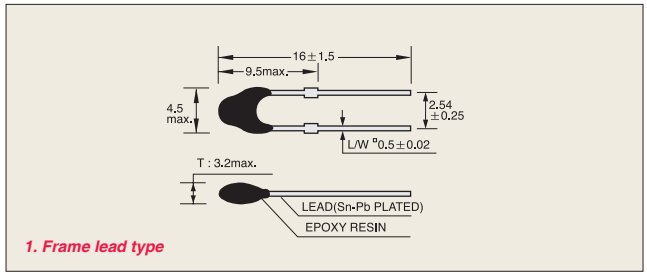
NTC CHIP THERMISTOR

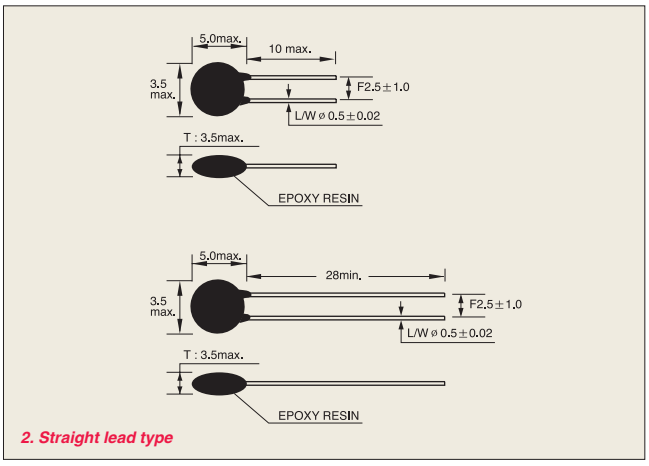
Chip thermistor is a high-precision thermal sensing device featuring an extremely small B-value tolerance and resistance.
When used as a temperature gauge, thermistor requires no adjustment between the control circuit and the sensor. This insures a temperature precision ±0.3℃. Temperature indicator and control instruments are now available for use with the thermistor.

NTC - 103 F 343 F □
① ② ③ ④ ⑤ ⑥

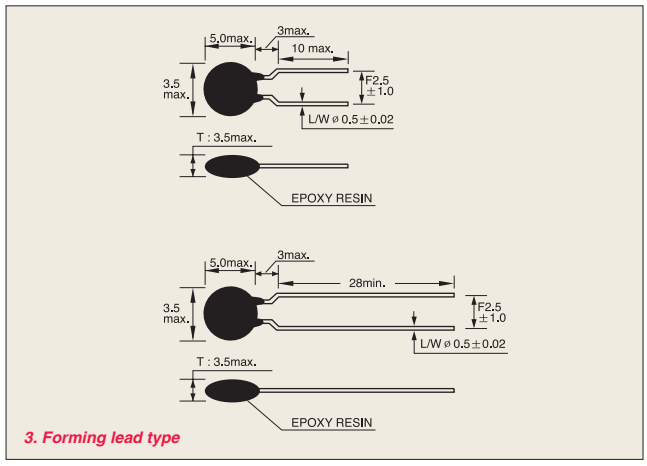
① SYMBOL
② RESISTANCE AT 25℃ [202 : 2,000Ω(2kΩ),
103 : 10,000Ω(10kΩ), 104 : 100,000Ω(100kΩ)]
③ RESISTANCE TOLERANCE
(F:±1%, G:±2%, H:±3%, J:±5%, K:±10%)
④ B VALUE (25℃ / 85℃)
⑤ B VALUE TOLERANCE (F:±1%, G:±2%, H:±3%)
⑥ TYPE (□ : Straight C : Frame)



1. Frame lead type



2. Straight lead type



3. Forming lead type

SPECIFICATION

PART No.	Resistance (25℃)*1	B Value (25℃/85℃)*2	Dissipation Constant	Thermal time*3 Constant	Rated power at 25℃	Operating Temp. range
502F332F	5 kΩ±1%	3324±1%	3.5 mW/℃	15 sec max.	45 mW	-50~120℃
502F347F	5 kΩ±1%	3470±1% (25℃/50℃)				
502F397F	5 kΩ±1%	3970±1%				
103F343F	10 kΩ±1%	3435±1%				
103F345F	10 kΩ±1%	3450±1% (25℃/50℃)				
103F397F	10 kΩ±1%	3970±1%				
303F410F	30 kΩ±1%	4100±1%				
403F400F	40 kΩ±1%	4000±1%				
503F400F	50 kΩ±1%	4000±1%				
503F408F	50 kΩ±1%	4080±1%				
104F400F	100 kΩ±1%	4000±1%				

*1. R_{25} : Rated zero-power resistance value at 25℃
*2. B Value : determined by rated zero-power resistance at 25℃ and 85℃
*3. Time when thermistor temperature reaches 63.2% of the temperature difference. The value is measured in the air.

TEMP. (℃)	NTC 502 F 332 F RESISTANCE (kΩ) min.	center	max.	NTC 502 F 347 F RESISTANCE (kΩ) min.	center	max.	NTC 502 F 397 F RESISTANCE (kΩ) min.	center	max.	NTC 103 F 343 F RESISTANCE (kΩ) min.	center	max.	TEMP. (℃)
-40	84.730	88.077	91.547	107.621	112.143	116.843	164.762	172.424	180.425	179.593	186.796	194.269	-40
-35	65.405	67.811	70.298	80.809	83.961	87.227	118.797	123.912	129.234	138.240	143.405	148.748	-35
-30	50.869	52.607	54.398	61.265	63.477	65.762	86.622	900.464	93.633	107.162	110.881	114.717	-30
-25	39.855	41.114	42.410	46.879	48.440	50.048	63.842	66.174	68.585	83.648	86.334	89.098	-25
-20	31.447	32.364	33.304	36.189	37.297	38.434	47.537	49.127	50.765	65.737	67.683	69.680	-20
-15	24.985	25.653	26.337	28.174	28.963	29.771	35.744	36.833	37.952	52.003	53.416	54.862	-15
-10	19.983	20.471	20.969	22.112	22.676	23.251	27.128	27.877	28.644	41.403	42.431	43.479	-10
-5	16.085	16.442	16.806	17.489	17.893	18.304	20.774	21.290	21.817	33.171	33.918	34.678	-5
0	13.029	13.290	13.554	13.936	14.225	14.518	16.045	16.401	16.763	26.737	27.280	27.830	0
5	10.616	10.807	10.999	11.183	11.390	11.599	12.494	12.738	12.987	21.678	22.071	22.469	5
10	8.701	8.839	8.979	9.035	9.182	9.331	9.805	9.972	10.142	17.677	17.960	18.246	10
15	7.171	7.271	7.371	7.348	7.452	7.556	7.752	7.866	7.981	14.494	14.697	14.901	15
20	5.942	6.013	6.085	6.013	6.085	6.158	6.173	6.249	6.326	11.947	12.091	12.235	20
25	4.950	5.000	5.050	4.950	5.000	5.050	4.950	5.000	5.050	9.900	10.000	10.100	25
30	4.128	4.178	4.227	4.082	4.131	4.181	3.977	4.026	4.075	8.213	8.312	8.410	30
35	3.461	3.508	3.556	3.386	3.433	3.480	3.217	3.263	3.310	6.848	6.942	7.037	35
40	2.915	2.960	3.005	2.823	2.868	2.912	2.617	2.661	2.704	5.737	5.326	5.916	40
45	2.466	2.508	2.551	2.366	2.408	2.450	2.142	2.182	2.222	4.828	4.911	4.996	45
50	2.096	2.135	2.175	1.993	2.031	2.070	1.764	1.800	1.836	4.081	4.159	4.237	50
55	1.789	1.825	1.862	1.687	1.722	1.758	1.460	1.492	1.526	3.465	3.536	3.609	55
60	1.533	1.566	1.601	1.434	1.466	1.499	1.214	1.244	1.274	2.954	3.019	3.086	60
65	1.319	1.350	1.381	1.225	1.254	1.284	1.015	1.042	1.069	2.528	2.588	2.650	65
70	1.139	1.167	1.196	1.050	1.077	1.105	0.853	0.877	0.901	2.172	2.227	2.284	70
75	0.987	1.013	1.040	0.904	0.929	0.954	0.720	0.741	0.763	1.873	1.924	1.975	75
80	0.859	0.883	0.907	0.781	0.804	0.827	0.610	0.630	0.649	1.622	1.668	1.715	80
85	0.750	0.772	0.794	0.678	0.699	0.720	0.520	0.537	0.555	1.409	1.451	1.494	85
90	0.657	0.677	0.697	0.590	0.609	0.628	0.444	0.460	0.476	1.228	1.266	1.305	90
95	0.577	0.595	0.614	0.516	0.533	0.550	0.381	0.395	0.409	1.073	1.108	1.144	95
100	0.509	0.525	0.543	0.452	0.468	0.484	0.329	0.341	0.354	0.942	0.973	1.006	100
105	0.450	0.465	0.481	0.398	0.412	0.427	0.284	0.295	0.307	0.828	0.858	0.888	105
110	0.399	0.413	0.427	0.351	0.364	0.377	0.247	0.257	0.276	0.731	0.758	0.785	110
115	0.354	0.367	0.381	0.311	0.322	0.335	0.215	0.224	0.233	0.647	0.671	0.697	115
120	0.316	0.328	0.340	0.276	0.287	0.298	0.188	0.196	0.204	0.574	0.597	0.620	120
	β(25/85) = 3324°k±1%			β(25/50) = 3470°k±1%			β(25/85) = 3970°k±1%			β(25/85) = 3435°k±1%			

TEMP. (℃)	NTC 103 F 345 F RESISTANCE (kΩ) min.	center	max.	NTC 103 F 397 F RESISTANCE (kΩ) min.	center	max.	NTC 303 F 410 F RESISTANCE (kΩ) min.	center	max.	NTC 503 F 400 F RESISTANCE (kΩ) min.	center	max.	TEMP. (℃)
-40	169.631	176.333	183.282	318.580	333.282	348.627	1,213.700	1,272.777	1,334.597	1,725.952	1,807.065	1,891.800	-40
-35	132.926	137.838	142.917	230.926	240.799	251.068	853.509	891.887	931.876	1,237.474	1,291.283	1,347.297	-35
-30	104.548	108.148	111.862	169.167	175.846	182.770	608.288	633.461	659.610	897.685	933.686	971.035	-30
-25	82.544	85.194	87.909	125.187	129.735	134.434	439.036	455.702	472.953	658.495	682.763	707.855	-25
-20	65.459	67.394	69.379	93.546	96.659	99.866	320.694	331.813	343.283	488.196	504.660	521.628	-20
-15	52.129	53.546	54.997	70.557	72.697	74.895	236.923	244.389	252.065	365.624	376.852	388.387	-15
-10	41.696	42.733	43.792	53.695	55.171	56.683	176.928	181.966	187.129	276.483	284.171	292.043	-10
-5	33.501	34.259	35.030	41.214	42.234	43.275	133.481	136.892	140.375	211.011	216.287	221.673	-5
0	27.038	27.590	28.150	31.894	32.600	33.317	101.684	103.996	106.350	162.465	166.088	169.775	0
5	21.920	22.320	22.725	24.877	25.364	25.857	78.179	79.745	81.334	126.143	128.627	131.146	5
10	17.851	18.139	18.430	19.551	19.885	20.222	60.637	61.693	62.761	98.730	100.425	102.139	10
15	14.602	14.807	15.014	15.477	15.704	15.933	47.425	48.131	48.843	77.869	79.016	80.172	15
20	11.997	12.142	12.287	12.337	12.489	12.642	37.388	37.854	38.321	61.867	62.633	63.402	20
25	9.900	10.000	10.100	9.900	10.000	10.100	29.700	30.000	30.300	49.500	50.000	50.500	25
30	8.173	8.271	8.369	7.960	8.058	8.156	23.656	23.949	24.243	39.697	40.186	40.676	30
35	6.776	6.870	6.965	6.441	6.534	6.627	18.976	19.253	19.532	32.045	32.508	32.975	35
40	5.641	5.730	5.820	5.243	5.329	5.417	15.324	15.581	15.840	26.031	26.462	26.897	40
45	4.716	4.799	4.883	4.293	4.372	4.453	12.455	12.690	12.927	21.273	21.668	22.069	45
50	3.959	4.035	4.113	3.534	3.606	3.680	10.185	10.398	10.614	17.485	17.845	18.210	50
55	3.336	3.406	3.477	2.925	2.991	3.057	8.379	8.570	8.765	14.452	14.777	15.108	55
60	2.822	2.886	2.951	2.433	2.492	2.553	6.931	7.103	7.278	12.008	12.301	12.599	60
65	2.396	2.454	2.514	2.034	2.087	2.142	5.765	5.918	6.075	10.029	10.291	10.560	65
70	2.042	2.095	2.149	1.709	1.756	1.805	4.819	4.957	5.097	8.417	8.652	8.893	70
75	1.746	1.794	1.843	1.442	1.485	1.528	4.049	4.172	4.297	7.097	7.308	7.524	75
80	1.498	1.542	1.587	1.222	1.260	1.300	3.418	3.528	3.640	6.011	6.200	6.394	80
85	1.290	1.330	1.370	1.040	1.075	1.110	2.899	2.996	3.097	5.114	5.283	5.457	85
90	1.114	1.150	1.187	0.889	0.920	0.951	2.469	2.556	2.646	4.369	4.520	4.677	90
95	0.966	0.998	1.032	0.763	0.790	0.819	2.112	2.190	2.271	3.747	3.883	4.024	95
100	0.839	0.869	0.899	0.657	0.682	0.707	1.814	1.884	1.956	3.227	3.349	3.475	100
105	0.732	0.758	0.786	0.568	0.590	0.613	1.564	1.627	1.691	2.789	2.898	3.012	105
110	0.640	0.664	0.689	0.493	0.513	0.533	1.354	1.410	1.468	2.419	2.518	2.620	110
115	0.561	0.583	0.606	0.429	0.447	0.465	1.176	1.226	1.279	2.106	2.194	2.287	115
120	0.493	0.513	0.534	0.374	0.391	0.408	1.025	1.070	1.118	1.839	1.919	2.003	120
	β(25/50) = 3450°k±1%			β(25/85) = 3970°k±1%			β(25/85) = 4100°k±1%			β(25/85) = 4000°k±1%			