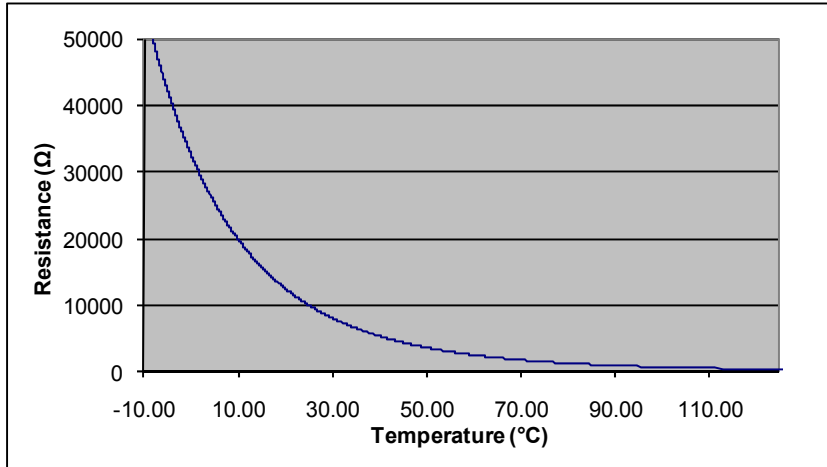


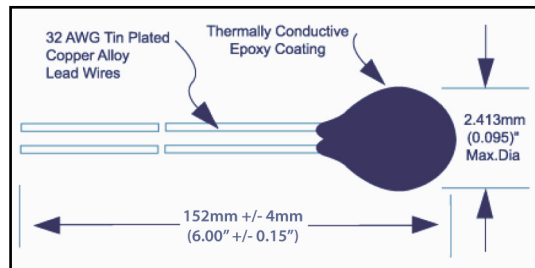
P/N 1600-10K Thermistor

The enclosed negative temperature coefficient (NTC) thermistor, p/n 1600-10K, works by translating temperature into resistance, with resistance decreasing as temperature increases (hence the 'negative coefficient').



Typical Resistance vs. Temperature Graph

As can be seen by the graph, the resistance of the thermistor drops very quickly. In the typical control range (0°C to 40°C), 10K thermistors offer good sensitivity to changes in temperature, and this is the range in which most 10K thermistors are typically used. 10K thermistors can be used at much higher temperatures, but will suffer poorer temperature stability performance because of the lower sensitivity.



The Steinhart-Hart Equation

Resistance varies inversely with temperature in a non-linear fashion. This relationship can be accurately modeled by the Steinhart-Hart equation:

$$\frac{1}{T} = A + B * \ln(R) + C * \ln(R)^3$$

Where: A = 1.12924E-03
 B = 2.34108E-04
 C = 0.87755E-07

Thermistor Resistance vs Temperature Chart

-80	7,296,874	-30	176,683	20	12,493.70	70	1,751.60	120	388.59
-79	6,677,205	-29	166,091	21	11,943.30	71	1,693.00	121	378.44
-78	6,114,311	-28	156,199	22	11,420.0	72	1,636.63	122	368.59
-77	5,602,677	-27	146,959	23	10,922.70	73	1,582.41	123	359.05
-76	5,137,343	-26	138,322	24	10,449.90	74	1,530.28	124	349.79
-75	4,713,762	-25	130,243	25	10,000.00	75	1,480.12	125	340.82
-74	4,327,977	-24	122,687	26	9,572.00	76	1,431.87	126	332.11
-73	3,966,352	-23	115,613	27	9,164.70	77	1,385.37	127	323.67
-72	3,655,631	-22	108,991	28	8,777.00	78	1,340.68	128	315.48
-71	3,362,963	-21	102,787	29	8,407.70	79	1,297.64	129	307.53
-70	3,095,611	-20	96,974	30	8,056.00	80	1,256.17	130	299.82
-69	2,851,363	-19	91,525	31	7,720.90	81	1,216.23	131	292.34
-68	2,627,981	-18	86,415	32	7,401.70	82	1,177.75	132	285.08
-67	2,423,519	-17	81,621	33	7,097.20	83	1,140.71	133	278.03
-66	2,236,398	-16	77,121	34	6,807.00	84	1,104.99	134	271.19
-65	2,064,919	-15	72,895	35	6,530.10	85	1,070.58	135	264.54
-64	1,907,728	-14	68,927	36	6,266.10	86	1,037.40	136	258.09
-63	1,763,539	-13	65,198	37	6,014.20	87	1,005.40	137	251.82
-62	1,631,173	-12	61,693	38	5,773.70	88	974.56	138	245.74
-61	1,509,639	-11	58,397	39	5,544.10	89	944.81	139	239.82
-60	1,397,935	-10	55,298	40	5,324.90	90	916.11	140	234.08
-59	1,295,239	-9	52,380	41	5,115.60	91	888.41	141	228.50
-58	1,200,732	-8	49,633	42	4,915.50	92	861.70	142	223.08
-57	1,113,744	-7	47,047	43	4,724.30	93	835.93	143	217.80
-56	1,033,619	-6	44,610	44	4,541.60	94	811.03	144	212.68
-55	959,789	-5	42,314.60	45	4,366.90	95	786.99	145	207.70
-54	891,689	-4	40,149.50	46	4,199.90	96	763.79	146	202.86
-53	828,865	-3	38,108.50	47	4,040.10	97	741.38	147	198.15
-52	770,880	-2	36,182.80	48	3,887.20	98	719.74	148	193.57
-51	717,310	-1	34,366.10	49	3,741.10	99	698.82	149	189.12
-50	667,828	0	32,650.80	50	3,601.00	100	678.63	150	184.79
-49	622,055	1	31,030.40	51	3,466.90	101	659.10		
-48	579,718	2	29,500.10	52	3,338.60	102	640.23		
-47	540,530	3	28,054.20	53	3,215.60	103	622.00		
-46	504,230	4	26,687.60	54	3,097.90	104	604.36		
-45	470,609	5	25,395.50	55	2,985.10	105	587.31		
-44	439,445	6	24,172.70	56	2,876.90	106	570.82		
-43	410,532	7	23,016.00	57	2,773.20	107	554.86		
-42	383,712	8	21,921.70	58	2,673.90	108	539.44		
-41	358,806	9	20,885.20	59	2,578.50	109	524.51		
-40	335,671	10	19,903.50	60	2,487.10	110	510.06		
-39	314,179	11	18,973.60	61	2,399.40	111	496.08		
-38	294,193	12	18,092.60	62	2,315.20	112	482.55		
-37	275,605	13	17,257.40	63	2,234.70	113	469.45		
-36	258,307	14	16,465.10	64	2,156.70	114	456.76		
-35	242,195	15	15,714.00	65	2,082.30	115	444.48		
-34	227,196	16	15,001.20	66	2,010.80	116	432.58		
-33	213,219	17	14,324.60	67	1,942.10	117	421.06		
-32	200,184	18	13,682.60	68	1,876.00	118	409.90		
-31	188,026	19	13,052.80	69	1,812.60	119	399.08		