DATASHEET AND OPERATING GUIDE
TCS Series Thermistors

BEAD HEAD

CYLINDRICAL HEAD

FEATURES AND BENEFITS

- RoHS & REACH compliant
- 1% Tolerance
- Cylindrical Head
  - » Ideal for Optical or Thin Surfaces & Small Laser Packages
  - » 3” Nickel Bifilar Leads
  - » Isolated Leads Provide Isolation from Metal Housing
- Bead Head
  - » Small Size (Epoxy Coated)
  - » Wide Resistance Range
  - » Available in six Different R-T Curves
  - » 3” Solid Nickel Wire Leads
  - » Teflon® Insulation Provides Isolation from Metal Housing

BEAD HEAD THERMISTOR

These ±1% thermistors are epoxy coated, two-lead thermistors for applications where embedding the thermistor is required. The thermistors are epoxy-coated for durability and protection against exposure to moisture, high and low pressure, and corrosive environments. They have solid nickel wires with Teflon® insulation to provide isolation when assembled in metal housings.

Dissipation Constant is ~1 mW / °C in still air.

Thermal Time Constant is ~1 second in stirred liquid.

CYLINDRICAL HEAD THERMISTOR

This ±1% thermistor is encapsulated in a polyimide tube, for assemblies where surface mounting or embedding the thermistor is required. Ideal for tight mounting spaces with 38 AWG nickel bifilar leads and a maximum diameter of 0.6 mm by maximum length of 3 mm.

Dissipation Constant is ~0.2 mW / °C in still air.

Thermal Time Constant is ~200 msec in stirred liquid.

APPLICATIONS

Aerospace/Automotive, Food Processing, Factory Automation, Electrical/Electronics, Meterology/Environmental, Medical Devices, Academic Research, Agriculture, Biomedical Systems, LIDAR, Medical/Dental, Quantum Systems, Spectroscopy, Materials Processing, Remote Sensing

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ORDERING INFORMATION

PART NO	DESCRIPTION
TCS605	5 kΩ Thermistor, Bead Head
TCS10K5	10 kΩ Thermistor, Cylindrical Head
TCS610	10 kΩ Thermistor, Bead Head
TCS620	20 kΩ Thermistor, Bead Head
TCS650	50 kΩ Thermistor, Bead Head
TCS651	100 kΩ Thermistor, Bead Head

RoHS Compliant

406-587-4910
www.teamWavelength.com

WAVELENGTH ELECTRONICS

THERMISTOR SELECTION GUIDE

Thermistors allow for precise temperature measurements across a wide range of temperatures. As seen below, temperatures from -45°C up to 114°C can be measured.

For a given thermistor, to accurately measure the voltage (which is related to the temperature, see the charts on the following pages), a bias current must be provided. Since the resistance of a thermistor varies as temperature changes, the bias current must be stable and consistent. In general, there are two commercially available bias current ranges, 10 or 100 µA.

Choose the bias current and thermistor combination such that the sensor voltage remains above 0.3 V for the temperature range under consideration. When the sensor voltage falls below 0.3 V, the sensitivity of the measurement is decreased. For more information, see *AN-TC14: Calibration Coefficients and Thermistor Selection*.

For optimum performance, system operating temperature should fall in the middle of the thermistor operating range, and within a single bias current range.

Use the chart below to select the thermistor model best suited to your application.

The following pages include complete resistance vs. temperature response charts for each thermistor model, as well as the Steinhart-Hart coefficients for each bias current range.

The resistance tolerance is ± 1% @ 25ºC.

Additional information about thermistors can be found in *AN-TC11: Thermistor Basics*. Techniques for installing thermistors can be found in *AN-TC08: Mounting and Soldering Nickel-Lead Thermistors*.

THERMISTOR SELECTION GUIDE			
MODEL	**R @ 25°C**	**10 mA BIAS CURRENT RANGE**	**100 µA BIAS CURRENT RANGE**
TCS605	**5 KΩ**	**-50 TO -2 °C**	**-20 TO +33 °C**
TCS10K5 *	**10 KΩ**	**-45 TO +13 °C**	**-8 TO +50 °C**
TCS610	**10 KΩ**	**-45 TO +13 °C**	**-8 TO +50 °C**
TCS620	**20 KΩ**	**-35 TO +28 °C**	**+6 TO +69 °C**
TCS650	**50 KΩ**	**-18 TO +49 °C**	**+25 TO +92 °C**
TCS651	**100 KΩ**	**-6 TO +64 °C**	**+41 TO +114 °C**

* Cylindrical Head

STEINHART-HART CALCULATION

You can approximate the response of a thermistor with the Steinhart-Hart Equation. The A, B, and C values listed in the charts for each model apply to the following equation. The coefficients are optimized for the ranges covered by the reference currents.

$$\frac{1}{T} = A + B \times \ln R + C \times (\ln R)^3$$, where R is in ohms and T is in Kelvin

TCS605 5 kΩ Bead Head Thermistor @ 25°C

RESISTANCE VERSUS TEMPERATURE RESPONSE

10 µA Bias Current Temperature Range: -50 to -2°C

100 µA Bias Current Temperature Range: -20 to +33°C

Steinhart-Hart Coefficients			
10 µA BIAS CURRENT RANGE		**100 µA BIAS CURRENT RANGE**	
A	1.2851E-03	A	1.2751E-03
B	2.3627E-04	B	2.3781E-04
C	9.2045E-08	C	8.6537E-08

TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)
-50	335000	3.350		**-20**	48540	0.485	4.854	**10**	9951		0.995
-49	312100	3.121		**-19**	45810	0.458	4.581	**11**	9486		0.948
-48	290800	2.908		**-18**	43250	0.432	4.325	**12**	9045		0.904
-47	271100	2.711		**-17**	40850	0.408	4.085	**13**	8628		0.862
-46	252900	2.529		**-16**	38590	0.385	3.859	**14**	8232		0.823
-45	236000	2.360		**-15**	36480	0.364	3.648	**15**	7856		0.785
-44	220300	2.203		**-14**	34490	0.344	3.449	**16**	7500		0.750
-43	205800	2.058		**-13**	32620	0.326	3.262	**17**	7162		0.716
-42	192400	1.924		**-12**	30870	0.308	3.087	**18**	6841		0.684
-41	179900	1.799		**-11**	29210	0.292	2.921	**19**	6536		0.653
-40	168200	1.682		**-10**	27660	0.276	2.766	**20**	6246		0.624
-39	157500	1.575		**-9**	26200	0.262	2.620	**21**	5971		0.597
-38	147400	1.474		**-8**	24830	0.248	2.483	**22**	5710		0.571
-37	138100	1.381		**-7**	23530	0.235	2.353	**23**	5461		0.546
-36	129400	1.294		**-6**	22310	0.223	2.231	**24**	5225		0.522
-35	121300	1.213		**-5**	21160	0.211	2.116	**25**	***5000***		***0.500***
-34	113800	1.138		**-4**	20080	0.200	2.008	**26**	4786		0.478
-33	106800	1.068		**-3**	19060	0.190	1.906	**27**	4582		0.458
-32	100300	1.003		**-2**	18090	0.180	1.809	**28**	4389		0.438
-31	94200	0.942		**-1**	17180		1.718	**29**	4204		0.420
-30	88500	0.885		**0**	***16330***		***1.633***	**30**	4028		0.402
-29	83200	0.832		**1**	15520		1.552	**31**	3861		0.386
-28	78200	0.782		**2**	14750		1.475	**32**	3701		0.370
-27	73600	0.736		**3**	14030		1.403	**33**	3549		0.354
-26	69300	0.693		**4**	13340		1.334				
-25	65210	0.652		**5**	12700		1.270				
-24	61420	0.614		**6**	12090		1.209				
-23	57880	0.578		**7**	11510		1.151				
-22	54560	0.545		**8**	10960		1.096				
-21	51450	0.514		**9**	10440		1.044				

TCS10K5 10 kΩ Cylindrical Head Thermistor @ 25°C

RESISTANCE VERSUS TEMPERATURE RESPONSE

10 µA Bias Current Temperature Range: -45 to +13°C

100 µA Bias Current Temperature Range: -8 to +50°C

Steinhart-Hart Coefficients			
10 µA BIAS CURRENT RANGE		**100 µA BIAS CURRENT RANGE**	
A	1.1235E-03	A	1.1279E-03
B	2.3500E-04	B	2.3429E-04
C	8.4538E-08	C	8.7298E-08

TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)
-45	472000	4.720		**-13**	65240	0.652		**19**	13070		1.307
-44	440700	4.407		**-12**	61730	0.617		**20**	12490		1.249
-43	411700	4.117		**-11**	58430	0.584		**21**	11940		1.194
-42	384700	3.847		**-10**	55320	0.553		**22**	11420		1.142
-41	359700	3.597		**-9**	52400	0.524		**23**	10920		1.092
-40	336500	3.365		**-8**	49650	0.496	4.965	**24**	10450		1.045
-39	314900	3.149		**-7**	47060	0.470	4.706	**25**	***10000***		***1.000***
-38	294900	2.949		**-6**	44620	0.446	4.462	**26**	9572		0.957
-37	276200	2.762		**-5**	42320	0.423	4.232	**27**	9165		0.916
-36	258900	2.589		**-4**	40160	0.401	4.016	**28**	8777		0.877
-35	242700	2.427		**-3**	38110	0.381	3.811	**29**	8408		0.840
-34	227600	2.276		**-2**	36190	0.361	3.619	**30**	8057		0.805
-33	213600	2.136		**-1**	34370	0.343	3.437	**31**	7722		0.772
-32	200500	2.005		**0**	***32650***	***0.326***	***3.265***	**32**	7403		0.740
-31	188400	1.884		**1**	31030	0.310	3.103	**33**	7098		0.709
-30	177000	1.770		**2**	29500	0.295	2.950	**34**	6808		0.680
-29	166400	1.664		**3**	28050	0.280	2.805	**35**	6531		0.653
-28	156400	1.564		**4**	26690	0.266	2.669	**36**	6267		0.626
-27	147200	1.472		**5**	25390	0.253	2.539	**37**	6016		0.601
-26	138500	1.385		**6**	24170	0.241	2.417	**38**	5775		0.577
-25	130400	1.304		**7**	23010	0.230	2.301	**39**	5546		0.554
-24	122800	1.228		**8**	21920	0.219	2.192	**40**	5327		0.532
-23	115800	1.158		**9**	20880	0.208	2.088	**41**	5117		0.511
-22	109100	1.091		**10**	19900	0.199	1.990	**42**	4917		0.491
-21	102900	1.029		**11**	18970	0.189	1.897	**43**	4726		0.472
-20	97070	0.970		**12**	18090	0.180	1.809	**44**	4543		0.454
-19	91610	0.916		**13**	17260	0.172	1.726	**45**	4369		0.436
-18	86490	0.864		**14**	16460		1.646	**46**	4202		0.420
-17	81690	0.816		**15**	15710		1.571	**47**	4042		0.404
-16	77180	0.771		**16**	15000		1.500	**48**	3889		0.388
-15	72950	0.729		**17**	14320		1.432	**49**	3743		0.374
-14	68980	0.689		**18**	13680		1.368	**50**	3603		0.360

TCS610 10 kΩ Bead Head Thermistor @ 25°C

RESISTANCE VERSUS TEMPERATURE RESPONSE

10 µA Bias Current Temperature Range: -45 to +13°C

100 µA Bias Current Temperature Range: -8 to +50°C

Steinhart-Hart Coefficients			
10 µA BIAS CURRENT RANGE		**100 µA BIAS CURRENT RANGE**	
A	1.1235E-03	A	1.1279E-03
B	2.3500E-04	B	2.3429E-04
C	8.4538E-08	C	8.7298E-08

TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)
-45	472000	4.720		**-13**	65240	0.652		**19**	13070		1.307
-44	440700	4.407		**-12**	61730	0.617		**20**	12490		1.249
-43	411700	4.117		**-11**	58430	0.584		**21**	11940		1.194
-42	384700	3.847		**-10**	55320	0.553		**22**	11420		1.142
-41	359700	3.597		**-9**	52400	0.524		**23**	10920		1.092
-40	336500	3.365		**-8**	49650	0.496	4.965	**24**	10450		1.045
-39	314900	3.149		**-7**	47060	0.470	4.706	**25**	***10000***		***1.000***
-38	294900	2.949		**-6**	44620	0.446	4.462	**26**	9572		0.957
-37	276200	2.762		**-5**	42320	0.423	4.232	**27**	9165		0.916
-36	258900	2.589		**-4**	40160	0.401	4.016	**28**	8777		0.877
-35	242700	2.427		**-3**	38110	0.381	3.811	**29**	8408		0.840
-34	227600	2.276		**-2**	36190	0.361	3.619	**30**	8057		0.805
-33	213600	2.136		**-1**	34370	0.343	3.437	**31**	7722		0.772
-32	200500	2.005		**0**	***32650***	***0.326***	***3.265***	**32**	7403		0.740
-31	188400	1.884		**1**	31030	0.310	3.103	**33**	7098		0.709
-30	177000	1.770		**2**	29500	0.295	2.950	**34**	6808		0.680
-29	166400	1.664		**3**	28050	0.280	2.805	**35**	6531		0.653
-28	156400	1.564		**4**	26690	0.266	2.669	**36**	6267		0.626
-27	147200	1.472		**5**	25390	0.253	2.539	**37**	6016		0.601
-26	138500	1.385		**6**	24170	0.241	2.417	**38**	5775		0.577
-25	130400	1.304		**7**	23010	0.230	2.301	**39**	5546		0.554
-24	122800	1.228		**8**	21920	0.219	2.192	**40**	5327		0.532
-23	115800	1.158		**9**	20880	0.208	2.088	**41**	5117		0.511
-22	109100	1.091		**10**	19900	0.199	1.990	**42**	4917		0.491
-21	102900	1.029		**11**	18970	0.189	1.897	**43**	4726		0.472
-20	97070	0.970		**12**	18090	0.180	1.809	**44**	4543		0.454
-19	91610	0.916		**13**	17260	0.172	1.726	**45**	4369		0.436
-18	86490	0.864		**14**	16460		1.646	**46**	4202		0.420
-17	81690	0.816		**15**	15710		1.571	**47**	4042		0.404
-16	77180	0.771		**16**	15000		1.500	**48**	3889		0.388
-15	72950	0.729		**17**	14320		1.432	**49**	3743		0.374
-14	68980	0.689		**18**	13680		1.368	**50**	3603		0.360

TCS620 20 kΩ Bead Head Thermistor @ 25°C

RESISTANCE VERSUS TEMPERATURE RESPONSE

10 µA Bias Current Temperature Range: -35 to +28°C

100 µA Bias Current Temperature Range: +6 to +69°C

Steinhart-Hart Coefficients			
10 µA BIAS CURRENT RANGE		**100 µA BIAS CURRENT RANGE**	
A	9.7142E-04	A	9.6542E-04
B	2.3268E-04	B	2.3356E-04
C	8.0591E-08	C	7.7781E-08

TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)
-35	485400	4.854		***0***	***65300***	***0.653***		**35**	13063		1.306
-34	455300	4.553		**1**	62060	0.620		**36**	12535		1.253
-33	427200	4.272		**2**	59000	0.590		**37**	12031		1.203
-32	401100	4.011		**3**	56100	0.561		**38**	11550		1.155
-31	376700	3.767		**4**	53370	0.533		**39**	11091		1.109
-30	354000	3.540		**5**	50790	0.507		**40**	10653		1.065
-29	332700	3.327		**6**	48340	0.483	4.834	**41**	10234		1.023
-28	312900	3.129		**7**	46030	0.460	4.603	**42**	9835		0.983
-27	294400	2.944		**8**	43840	0.438	4.384	**43**	9452		0.945
-26	277000	2.770		**9**	41770	0.417	4.177	**44**	9087		0.908
-25	260800	2.608		**10**	39800	0.398	3.980	**45**	8738		0.873
-24	245700	2.457		**11**	37940	0.379	3.794	**46**	8404		0.840
-23	231500	2.315		**12**	36180	0.361	3.618	**47**	8084		0.808
-22	218200	2.182		**13**	34510	0.345	3.451	**48**	7779		0.777
-21	205800	2.058		**14**	32930	0.329	3.293	**49**	7486		0.748
-20	194100	1.941		**15**	31420	0.314	3.142	**50**	7206		0.720
-19	183200	1.832		**16**	30000	0.300	3.000	**51**	6937		0.693
-18	173000	1.730		**17**	28650	0.286	2.865	**52**	6680		0.668
-17	163400	1.634		**18**	27360	0.273	2.736	**53**	6434		0.643
-16	154400	1.544		**19**	26140	0.261	2.614	**54**	6198		0.619
-15	145900	1.459		**20**	24990	0.249	2.499	**55**	5971		0.597
-14	137950	1.379		**21**	23880	0.238	2.388	**56**	5755		0.575
-13	130500	1.305		**22**	22840	0.228	2.284	**57**	5547		0.554
-12	123500	1.235		**23**	21840	0.218	2.184	**58**	5348		0.534
-11	116900	1.169		**24**	20900	0.209	2.090	**59**	5157		0.515
-10	110650	1.106		***25***	***20000***	***0.200***	***2.000***	**60**	4974		0.497
-9	104800	1.048		**26**	19140	0.191	1.914	**61**	4798		0.479
-8	99300	0.993		**27**	18330	0.183	1.833	**62**	4629		0.462
-7	94130	0.941		**28**	17555	0.175	1.755	**63**	4468		0.446
-6	89250	0.892		**29**	16817		1.681	**64**	4312		0.431
-5	84650	0.846		**30**	16113		1.611	**65**	4163		0.416
-4	80310	0.803		**31**	15443		1.544	**66**	4020		0.402
-3	76230	0.762		**32**	14805		1.480	**67**	3883		0.388
-2	72370	0.723		**33**	14196		1.419	**68**	3751		0.375
-1	68740	0.687		**34**	13616		1.361	**69**	3624		0.362

TCS650 50 kΩ Bead Head Thermistor @ 25°C

RESISTANCE VERSUS TEMPERATURE RESPONSE

10 µA Bias Current Temperature Range: -18 to +49°C

100 µA Bias Current Temperature Range: +25 to +92°C

Steinhart-Hart Coefficients			
10 µA BIAS CURRENT RANGE		**100 µA BIAS CURRENT RANGE**	
A	9.5346E-04	A	9.6911E-04
B	2.1233E-04	B	2.1014E-04
C	8.1509E-08	C	8.8019E-08

TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)
-18	490000	4.900		**19**	66490	0.664		**56**	13205		1.320
-17	461500	4.615		**20**	63360	0.633		**57**	12695		1.269
-16	434700	4.347		**21**	60400	0.604		**58**	12210		1.221
-15	409700	4.097		**22**	57590	0.575		**59**	11745		1.174
-14	386200	3.862		**23**	54920	0.549		**60**	11295		1.129
-13	364300	3.643		**24**	52400	0.524		**61**	10870		1.087
-12	343600	3.436		***25***	***50000***	***0.500***	***5.000***	**62**	10460		1.046
-11	324300	3.243		**26**	47725	0.477	4.772	**63**	10070		1.007
-10	306200	3.062		**27**	45565	0.455	4.556	**64**	9694		0.969
-9	289200	2.892		**28**	43510	0.435	4.351	**65**	9335		0.933
-8	273200	2.732		**29**	41565	0.415	4.156	**66**	8990		0.899
-7	258200	2.582		**30**	39715	0.397	3.971	**67**	8661		0.866
-6	244100	2.441		**31**	37955	0.379	3.795	**68**	8344		0.834
-5	230800	2.308		**32**	36285	0.362	3.628	**69**	8041		0.804
-4	218400	2.184		**33**	34695	0.346	3.469	**70**	7751		0.775
-3	206700	2.067		**34**	33185	0.331	3.318	**71**	7472		0.747
-2	195700	1.957		**35**	31745	0.317	3.174	**72**	7205		0.720
-1	185300	1.853		**36**	30375	0.303	3.037	**73**	6948		0.694
0	***175500***	***1.755***		**37**	29075	0.290	2.907	**74**	6702		0.670
1	166300	1.663		**38**	27835	0.278	2.783	**75**	6466		0.646
2	157600	1.576		**39**	26655	0.266	2.665	**76**	6239		0.623
3	149500	1.495		**40**	25530	0.255	2.553	**77**	6021		0.602
4	141800	1.418		**41**	24460	0.244	2.446	**78**	5812		0.581
5	134500	1.345		**42**	23435	0.234	2.343	**79**	5612		0.561
6	127700	1.277		**43**	22465	0.224	2.246	**80**	5419		0.541
7	121200	1.212		**44**	21535	0.215	2.153	**81**	5233		0.523
8	115100	1.151		**45**	20650	0.206	2.065	**82**	5055		0.505
9	109300	1.093		**46**	19805	0.198	1.980	**83**	4884		0.488
10	103900	1.039		**47**	19000	0.190	1.900	**84**	4719		0.471
11	98760	0.987		**48**	18235	0.182	1.823	**85**	4561		0.456
12	93900	0.939		**49**	17500	0.175	1.750	**86**	4408		0.440
13	89310	0.893		**50**	16800		1.678	**87**	4262		0.426
14	84960	0.849		**51**	16130		1.613	**88**	4121		0.412
15	80850	0.808		**52**	15490		1.549	**89**	3985		0.398
16	76960	0.769		**53**	14880		1.488	**90**	3855		0.385
17	73280	0.732		**54**	14300		1.430	**91**	3729		0.372
18	69790	0.697		**55**	13740		1.374	**92**	3608		0.360

TCS651 100 kΩ Bead Head Thermistor @ 25°C

RESISTANCE VERSUS TEMPERATURE RESPONSE

10 µA Bias Current Temperature Range: -6 to +64°C

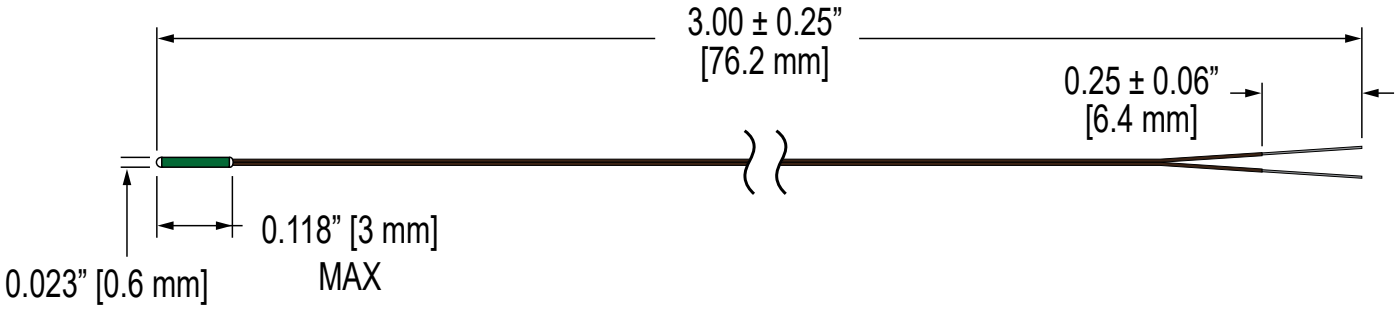
100 µA Bias Current Temperature Range: +41 to +114°C

Steinhart-Hart Coefficients			
10 µA BIAS CURRENT RANGE		100 µA BIAS CURRENT RANGE	
A	8.2458E-04	A	8.47031E-04
B	2.0913E-04	B	2.0561E-04
C	7.9780E-08	C	9.2670E-08

TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)	TEMP (°C)	R_T (Ω)	VOLT (V) (10 µA)	VOLT (V) (100 µA)
-6	488200	4.882		**34**	66370	0.663		**74**	13400		1.340
-5	461700	4.617		**35**	63490	0.634		**75**	12930		1.293
-4	436800	4.368		**36**	60750	0.607		**76**	12480		1.248
-3	413300	4.133		**37**	58150	0.581		**77**	12040		1.204
-2	391300	3.913		**38**	55670	0.556		**78**	11620		1.162
-1	370600	3.706		**39**	53310	0.533		**79**	11220		1.122
0	***351000***	***3.510***		**40**	51060	***0.510***		**80**	10840		1.084
1	332600	3.326		**41**	48920	0.489	4.892	**81**	10470		1.047
2	315300	3.153		**42**	46870	0.468	4.687	**82**	10110		1.011
3	299000	2.990		**43**	44930	0.449	4.493	**83**	9767		0.976
4	283600	2.836		**44**	43070	0.430	4.307	**84**	9438		0.943
5	269000	2.690		**45**	41300	0.413	4.130	**85**	9121		0.912
6	255300	2.553		**46**	39610	0.396	3.961	**86**	8817		0.881
7	242400	2.424		**47**	38000	0.380	3.800	**87**	8524		0.852
8	230200	2.302		**48**	36470	0.364	3.647	**88**	8242		0.824
9	218700	2.187		**49**	35000	0.350	3.500	**89**	7970		0.797
10	207800	2.078		**50**	33600	0.336	3.360	**90**	7709		0.770
11	197500	1.975		**51**	32260	0.322	3.226	**91**	7458		0.745
12	187800	1.878		**52**	30980	0.309	3.098	**92**	7216		0.721
13	178600	1.786		**53**	29760	0.297	2.976	**93**	6983		0.698
14	169900	1.699		**54**	28590	0.285	2.859	**94**	6759		0.675
15	161700	1.617		**55**	27480	0.274	2.748	**95**	6542		0.654
16	153900	1.539		**56**	26410	0.264	2.641	**96**	6334		0.633
17	146600	1.466		**57**	25390	0.253	2.539	**97**	6134		0.613
18	139600	1.396		**58**	24420	0.244	2.442	**98**	5940		0.594
19	133000	1.330		**59**	23490	0.234	2.349	**99**	5754		0.575
20	126700	1.267		**60**	22590	0.225	2.259	**100**	5574		0.557
21	120800	1.208		**61**	21740	0.217	2.174	**101**	5401		0.540
22	115200	1.152		**62**	20920	0.209	2.092	**102**	5234		0.523
23	109800	1.098		**63**	20140	0.201	2.014	**103**	5072		0.507
24	104800	1.048		**64**	19390	0.193	1.939	**104**	4917		0.491
25	***100000***	***1.000***		**65**	18670		1.867	**105**	4767		0.476
26	95450	0.954		**66**	17980		1.798	**106**	4622		0.462
27	91130	0.911		**67**	17320		1.732	**107**	4482		0.448
28	87030	0.870		**68**	16690		1.669	**108**	4347		0.434
29	83130	0.831		**69**	16080		1.608	**109**	4217		0.421
30	79430	0.794		**70**	15500		1.550	**110**	4091		0.409
31	75910	0.759		**71**	14940		1.494	**111**	3970		0.397
32	72570	0.725		**72**	14410		1.441	**112**	3853		0.385
33	69390	0.693		**73**	13900		1.390	**113**	3739		0.373
								114	3630		0.363

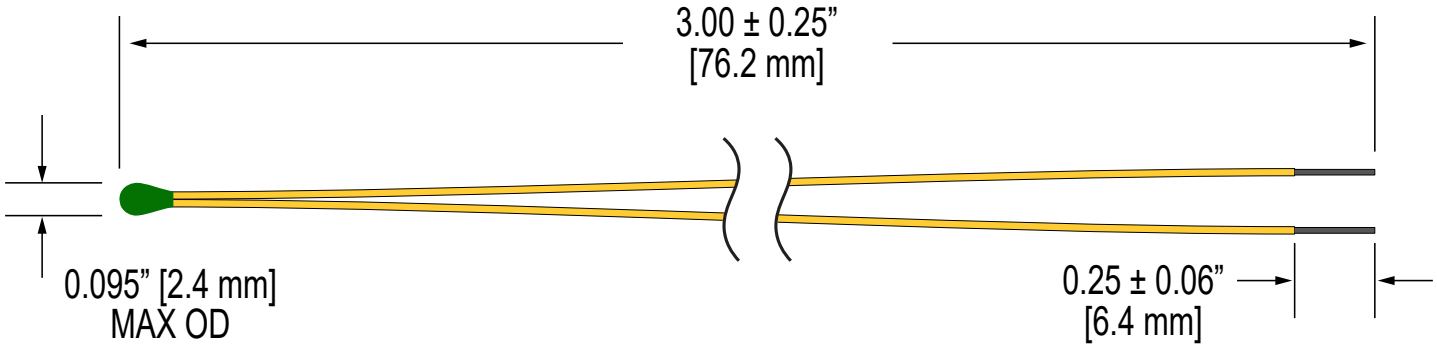
MECHANICAL SPECIFICATIONS

TCS10K5 CYLINDRICAL HEAD THERMISTOR



Wire Gauge = 38 AWG Nickel Bifilar Leads with special solder tinned leads

TCS BEAD HEAD THERMISTORS



Wire Gauge = 30 AWG Solid Nickel Wire Leads

Drawing Dimensions are typical
Exact Dimensions may vary

CERTIFICATION AND WARRANTY

CERTIFICATION

Wavelength Electronics, Inc. (Wavelength) certifies that this product met its published specifications at the time of shipment. Wavelength further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by that organization's calibration facilities, and to the calibration facilities of other International Standards Organization members.

WARRANTY

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For warranty service or repair, this product must be returned to the factory. An RMA is required for products returned to Wavelength for warranty service. The Buyer shall prepay shipping charges to Wavelength and Wavelength shall pay shipping charges to return the product to the Buyer upon determination of defective materials or workmanship. However, the Buyer shall pay all shipping charges, duties, and taxes for products returned to Wavelength from another country.

LIMITATIONS OF WARRANTY

The warranty shall not apply to defects resulting from improper use or misuse of the product or operation outside published specifications. No other warranty is expressed or implied. Wavelength specifically disclaims the implied warranties of merchantability and fitness for a particular purpose.

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There are no user-serviceable parts inside this product. Return the product to Wavelength Electronics for service and repair to ensure that safety features are maintained.

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REVISION HISTORY

DOCUMENT NUMBER: TCS-00400

REV.	DATE	CHANGE
A	January 2019	Initial Release
B	July 2021	Added TCS605 5kΩ Thermistor

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