

TEWA TERMICO LTD.
A PART OF TEWA ELECTRONICS GROUP

HIGH PRECISION NTC THERMISTORS AND TEMPERATURE SENSORS

SPECIFICATION
Of
NTC CHIP THERMISTOR

PART NUMBER: **TT3-20KC6-BG**

No. of pages: 4

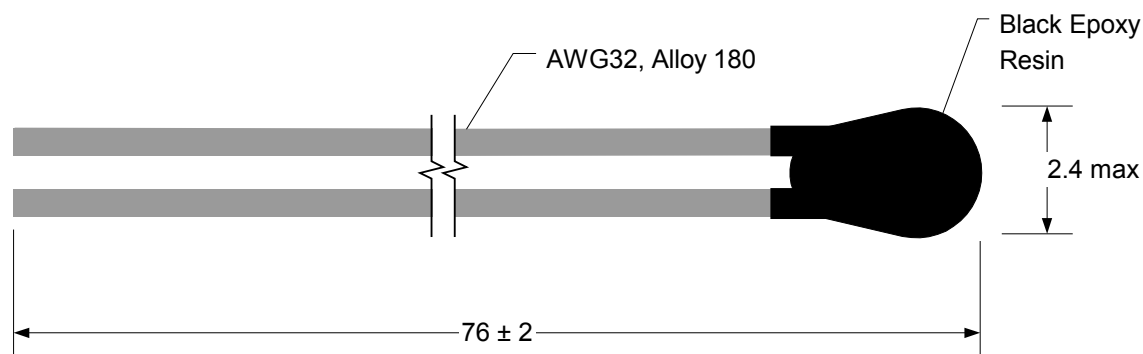
Date: **11.06.2012**

Revision: **00**

FEATURES:

| | |
|---|----------------------|
| No-load resistance at 25°C | 20 000 Ω |
| Temperature Coefficient [alpha] at 25°C | -4.68%/°C |
| Resistance tolerance from 0°C to 70°C | ± 0.2°C |
| Beta(25/85) Constant | 4 260 ± 0.3% |
| Operating temperature range | From - 40°C to 125°C |
| Maximum Exposure Temperature | 150°C |
| Response Time in well stirred liquid bath | ~1s |
| Response Time in still air | ~10s |
| Typical Dissipation Constant in still air | 0.75mW/°C |
| RoHS Compliant | YES |

DRAWING:



Units: [mm]

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PART NUMBER: **TT3-20KC6-BG**

R/T CHARACTERISTIC:

| Resistance Tolerance B(25/85) Curve | | | | Ohms at 25°C from 0°C to 70°C | | | |
|-------------------------------------|-----------|-----------|-----------|-------------------------------|----------|----------|----------|
| 20 000 ± 0.2°C 4260 6 | | | | | | | |
| T (oC) | R min | R center | R max | T (oC) | R min | R center | R max |
| -40 | 784048,56 | 812200,36 | 840352,16 | 0 | 69437,52 | 70204,00 | 70970,48 |
| -39 | 732318,76 | 757974,83 | 783630,91 | 1 | 65802,98 | 66525,22 | 67247,46 |
| -38 | 684309,52 | 707689,10 | 731068,67 | 2 | 62378,57 | 63059,31 | 63740,06 |
| -37 | 639732,55 | 661035,13 | 682337,71 | 3 | 59151,06 | 59792,88 | 60434,69 |
| -36 | 598323,40 | 617730,62 | 637137,84 | 4 | 56108,14 | 56713,42 | 57318,71 |
| -35 | 559839,39 | 577516,65 | 595193,91 | 5 | 53238,30 | 53809,29 | 54380,29 |
| -34 | 524069,18 | 540155,70 | 556242,23 | 6 | 50530,84 | 51069,63 | 51608,42 |
| -33 | 490795,12 | 505429,73 | 520064,34 | 7 | 47975,74 | 48484,28 | 48992,83 |
| -32 | 459829,28 | 473138,49 | 486447,70 | 8 | 45563,66 | 46043,79 | 46523,91 |
| -31 | 430998,85 | 443097,99 | 455197,13 | 9 | 43285,88 | 43739,30 | 44192,72 |
| -30 | 404144,86 | 415139,10 | 426133,34 | 10 | 41134,25 | 41562,56 | 41990,86 |
| -29 | 379055,49 | 389106,27 | 399157,04 | 11 | 39101,15 | 39505,84 | 39910,53 |
| -28 | 355669,88 | 364856,38 | 374042,87 | 12 | 37179,45 | 37561,93 | 37944,41 |
| -27 | 333863,05 | 342257,67 | 350652,28 | 13 | 35362,50 | 35724,08 | 36085,66 |
| -26 | 313519,84 | 321188,80 | 328857,76 | 14 | 33644,07 | 33985,97 | 34327,88 |
| -25 | 294534,07 | 301537,97 | 308541,87 | 15 | 32018,32 | 32341,71 | 32665,09 |
| -24 | 276813,74 | 283202,11 | 289590,47 | 16 | 30479,80 | 30785,75 | 31091,69 |
| -23 | 260261,85 | 266086,18 | 271910,50 | 17 | 29023,40 | 29312,91 | 29602,42 |
| -22 | 244795,06 | 250102,48 | 255409,90 | 18 | 27644,33 | 27918,36 | 28192,39 |
| -21 | 230336,40 | 235170,07 | 240003,75 | 19 | 26338,09 | 26597,53 | 26856,97 |
| -20 | 216814,73 | 221214,20 | 225613,67 | 20 | 25100,49 | 25346,17 | 25591,86 |
| -19 | 204134,06 | 208165,81 | 212197,57 | 21 | 23927,09 | 24160,30 | 24393,50 |
| -18 | 192267,47 | 195961,08 | 199654,69 | 22 | 22814,73 | 23036,15 | 23257,56 |
| -17 | 181158,36 | 184540,99 | 187923,61 | 23 | 21759,94 | 21970,21 | 22180,48 |
| -16 | 170754,37 | 173850,95 | 176947,53 | 24 | 20759,46 | 20959,20 | 21158,94 |
| -15 | 161006,98 | 163840,43 | 166673,89 | 25 | 19810,22 | 20000,00 | 20189,78 |
| -14 | 151874,48 | 154462,68 | 157050,88 | 26 | 18909,74 | 19089,72 | 19269,70 |
| -13 | 143311,69 | 145674,36 | 148037,03 | 27 | 18054,90 | 18225,62 | 18396,33 |
| -12 | 135280,06 | 137435,34 | 139590,62 | 28 | 17243,16 | 17405,13 | 17567,10 |
| -11 | 127743,85 | 129708,41 | 131672,97 | 29 | 16472,15 | 16625,85 | 16779,55 |
| -10 | 120669,90 | 122459,07 | 124248,25 | 30 | 15739,62 | 15885,50 | 16031,39 |
| -9 | 114008,40 | 115655,32 | 117302,24 | 31 | 15043,15 | 15181,96 | 15320,77 |
| -8 | 107751,93 | 109267,44 | 110782,95 | 32 | 14381,11 | 14513,21 | 14645,32 |
| -7 | 101873,77 | 103267,87 | 104661,97 | 33 | 13751,63 | 13877,38 | 14003,13 |
| -6 | 96349,07 | 97630,98 | 98912,89 | 34 | 13152,95 | 13272,68 | 13392,41 |
| -5 | 91154,74 | 92332,98 | 93511,22 | 35 | 12583,42 | 12697,44 | 12811,46 |
| -4 | 86269,31 | 87351,75 | 88434,18 | 36 | 12041,72 | 12150,08 | 12258,45 |
| -3 | 81672,83 | 82666,71 | 83660,60 | 37 | 11526,12 | 11629,13 | 11732,13 |
| -2 | 77346,69 | 78258,74 | 79170,79 | 38 | 11035,24 | 11133,17 | 11231,11 |
| -1 | 73273,63 | 74110,03 | 74946,43 | 39 | 10567,77 | 10660,90 | 10754,03 |

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R/T CHARACTERISTIC:

| Resistance Tolerance B(25/85) Curve | | | | 20 000 ± 0.2°C 4260 6 | Ohms at 25°C from 0°C to 70°C ± 0.3% | | | |
|--|----------|----------|----------|--|--|----------|---------|--|
| T (oC) | R min | R center | R max | T (oC) | R min | R center | R max | |
| 40 | 10122,50 | 10211,08 | 10299,65 | 80 | 2148,68 | 2167,70 | 2186,73 | |
| 41 | 9698,06 | 9782,52 | 9866,98 | 81 | 2074,84 | 2093,55 | 2112,27 | |
| 42 | 9293,57 | 9374,12 | 9454,68 | 82 | 2003,88 | 2022,29 | 2040,70 | |
| 43 | 8908,00 | 8984,85 | 9061,69 | 83 | 1935,69 | 1953,79 | 1971,89 | |
| 44 | 8540,39 | 8613,71 | 8687,03 | 84 | 1870,14 | 1887,94 | 1905,73 | |
| 45 | 8189,81 | 8259,78 | 8329,75 | 85 | 1807,11 | 1824,61 | 1842,11 | |
| 46 | 7855,38 | 7922,17 | 7988,96 | 86 | 1746,50 | 1763,70 | 1780,91 | |
| 47 | 7536,30 | 7600,06 | 7663,83 | 87 | 1688,21 | 1705,12 | 1722,03 | |
| 48 | 7231,78 | 7292,67 | 7353,56 | 88 | 1632,13 | 1648,75 | 1665,37 | |
| 49 | 6941,10 | 6999,25 | 7057,41 | 89 | 1578,18 | 1594,51 | 1610,84 | |
| 50 | 6663,56 | 6719,11 | 6774,66 | 90 | 1526,26 | 1542,31 | 1558,36 | |
| 51 | 6398,50 | 6451,58 | 6504,66 | 91 | 1476,41 | 1492,06 | 1507,71 | |
| 52 | 6145,32 | 6196,04 | 6246,76 | 92 | 1428,42 | 1443,68 | 1458,94 | |
| 53 | 5903,41 | 5951,89 | 6000,38 | 93 | 1382,21 | 1397,09 | 1411,97 | |
| 54 | 5672,23 | 5718,58 | 5764,93 | 94 | 1337,71 | 1352,22 | 1366,74 | |
| 55 | 5451,25 | 5495,57 | 5539,89 | 95 | 1294,85 | 1309,00 | 1323,16 | |
| 56 | 5240,08 | 5282,36 | 5324,64 | 96 | 1253,55 | 1267,37 | 1281,18 | |
| 57 | 5038,14 | 5078,48 | 5118,81 | 97 | 1213,77 | 1227,24 | 1240,72 | |
| 58 | 4844,98 | 4883,47 | 4921,96 | 98 | 1175,43 | 1188,58 | 1201,72 | |
| 59 | 4660,18 | 4696,91 | 4733,64 | 99 | 1138,48 | 1151,30 | 1164,13 | |
| 60 | 4483,34 | 4518,40 | 4553,46 | 100 | 1102,85 | 1115,37 | 1127,89 | |
| 61 | 4313,90 | 4347,54 | 4381,19 | 101 | 1068,46 | 1080,73 | 1092,99 | |
| 62 | 4151,69 | 4183,99 | 4216,29 | 102 | 1035,30 | 1047,31 | 1059,33 | |
| 63 | 3996,38 | 4027,39 | 4058,39 | 103 | 1003,32 | 1015,09 | 1026,86 | |
| 64 | 3847,64 | 3877,41 | 3907,19 | 104 | 972,47 | 984,00 | 995,53 | |
| 65 | 3705,16 | 3733,75 | 3762,35 | 105 | 942,71 | 954,01 | 965,30 | |
| 66 | 3568,72 | 3596,11 | 3623,51 | 106 | 914,01 | 925,06 | 936,11 | |
| 67 | 3437,97 | 3464,22 | 3490,47 | 107 | 886,32 | 897,13 | 907,93 | |
| 68 | 3312,65 | 3337,80 | 3362,96 | 108 | 859,59 | 870,16 | 880,73 | |
| 69 | 3192,50 | 3216,61 | 3240,72 | 109 | 833,79 | 844,13 | 854,47 | |
| 70 | 3077,29 | 3100,40 | 3123,51 | 110 | 808,87 | 818,99 | 829,10 | |
| 71 | 2966,24 | 2988,95 | 3011,66 | 111 | 784,59 | 794,71 | 804,84 | |
| 72 | 2859,74 | 2882,05 | 2904,35 | 112 | 761,14 | 771,27 | 781,39 | |
| 73 | 2757,57 | 2779,48 | 2801,38 | 113 | 738,49 | 748,62 | 758,74 | |
| 74 | 2659,54 | 2681,05 | 2702,56 | 114 | 716,62 | 726,73 | 736,84 | |
| 75 | 2565,46 | 2586,58 | 2607,70 | 115 | 695,49 | 705,59 | 715,68 | |
| 76 | 2475,21 | 2495,89 | 2516,58 | 116 | 675,08 | 685,15 | 695,22 | |
| 77 | 2388,56 | 2408,82 | 2429,07 | 117 | 655,36 | 665,39 | 675,43 | |
| 78 | 2305,35 | 2325,19 | 2345,03 | 118 | 636,30 | 646,30 | 656,30 | |
| 79 | 2225,44 | 2244,87 | 2264,30 | 119 | 617,87 | 627,83 | 637,80 | |

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| Resistance Tolerance B(25/85) Curve | | | | 20 000 $\pm 0.2^{\circ}\text{C}$ 4260 6 | Ohms at 25°C from 0°C to 70°C $\pm 0.3\%$ | | | |
|--|--------|----------|--------|---|---|----------|--------|--|
| T (oC) | R min | R center | R max | T (oC) | R min | R center | R max | |
| 120 | 600,06 | 609,98 | 619,90 | 136 | 383,07 | 391,25 | 399,42 | |
| 121 | 582,94 | 592,71 | 602,48 | 137 | 372,84 | 380,94 | 389,04 | |
| 122 | 566,38 | 576,01 | 585,64 | 138 | 362,92 | 370,94 | 378,97 | |
| 123 | 550,36 | 559,85 | 569,33 | 139 | 353,30 | 361,26 | 369,21 | |
| 124 | 534,87 | 544,21 | 553,56 | 140 | 343,98 | 351,86 | 359,74 | |
| 125 | 519,88 | 529,08 | 538,29 | 141 | 334,98 | 342,75 | 350,53 | |
| 126 | 505,37 | 514,44 | 523,51 | 142 | 326,25 | 333,92 | 341,59 | |
| 127 | 491,34 | 500,27 | 509,20 | 143 | 317,78 | 325,35 | 332,92 | |
| 128 | 477,75 | 486,55 | 495,35 | 144 | 309,57 | 317,04 | 324,51 | |
| 129 | 464,60 | 473,26 | 481,93 | 145 | 301,60 | 308,97 | 316,34 | |
| 130 | 451,86 | 460,40 | 468,93 | 146 | 293,87 | 301,15 | 308,42 | |
| 131 | 439,46 | 447,94 | 456,42 | 147 | 286,38 | 293,55 | 300,73 | |
| 132 | 427,45 | 435,87 | 444,30 | 148 | 279,10 | 286,18 | 293,26 | |
| 133 | 415,82 | 424,18 | 432,55 | 149 | 272,04 | 279,03 | 286,01 | |
| 134 | 404,55 | 412,86 | 421,16 | 150 | 265,19 | 272,08 | 278,97 | |
| 135 | 393,64 | 401,88 | 410,12 | | | | | |