

## 产品承认书

## PRODUCT SPECIFICATION FOR APPROVAL

|                                  |                                   |
|----------------------------------|-----------------------------------|
| 客户名称<br>CUSTOMER NAME            |                                   |
| 客户料号<br>P/N OF CUSTOMER          |                                   |
| 承认字号<br>APPROVAL NO.             |                                   |
| 产品名称<br>PRODUCT NAME             | 敏感型负温度系数热敏电阻<br>SN NTC THERMISTOR |
| 规格型号<br>TYPE SPECIFICATION       | SNS104B13950FE1W150EWR20          |
| 承认书版本号<br>APPROVAL SHEET VERSION | 1.0                               |
| 承认日期<br>DATE OF APPROVAL         |                                   |

| 供 应 商<br>SUPPLIER            |               |                |
|------------------------------|---------------|----------------|
| 制定<br>DESIGNED               | 审核<br>CHECKED | 批准<br>APPROVED |
|                              |               |                |
| 供应商品管部印鉴<br>SUPPLIER QA SEAL |               |                |

| 客 户<br>CUSTOMER                  |               |                |
|----------------------------------|---------------|----------------|
| 检验<br>INSPECTED                  | 审核<br>CHECKED | 批准<br>APPROVED |
|                                  |               |                |
| 客户承认印鉴<br>CUSTOMER APPROVAL SEAL |               |                |



## 修订履历

[illegible]

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# 1、规格型号 PART IDENTIFICATION

SN   S   104   B<sub>1</sub>   3950   F   E   I   W   150   E   WR   20  
 ①   ②   ③   ④   ④   ⑥   ⑦   ⑧   ⑨   ⑩   ⑪   ⑫   ⑬

|                                                                         |                                         |
|-------------------------------------------------------------------------|-----------------------------------------|
| ①<br>产品类别<br>PART NUMBER ENTIFICATION                                   | SN指敏感型负温度系数热敏电阻;                        |
|                                                                         | SN INDICATES SMD NTC THERMISTOR         |
| ②<br>系列类别<br>SERIES CATEGORY                                            | S指传感器                                   |
|                                                                         | S-FINGER SENSOR                         |
| ③<br>产品阻值 (25°零功率电阻值)<br>PRODUCT RESISTANCE (25° ZERO POWER RESISTANCE) | 104指100KΩ                               |
|                                                                         | 104 MEANS 100KΩ;                        |
| ④<br>B 值代码<br>B-VALUE CODE                                              | B1指 25/50                               |
|                                                                         | B1 MEANS 25/50                          |
| ⑤<br>B 值数值<br>B-VALUE TOLERANCE                                         | 3950指B值为3950K                           |
|                                                                         | 3950 MEANS THAT B VALUE IS 3950K        |
| ⑥<br>阻值误差<br>PACKAGING STYLE                                            | F 指±1%                                  |
|                                                                         | F INDICATES ±1%                         |
| ⑦<br>头部外观结构<br>HEAD APPEARANCE STRUCTURE                                | E指环氧树脂包封;                               |
|                                                                         | E MEANS EPOXY RESIN ENCAPSULATION;      |
| ⑧<br>线材颜色<br>WIRE COLOR                                                 | 1指线材颜色为黑色;                              |
|                                                                         | 1 THE COLOR OF THE FINGER WIRE IS BLACK |
| ⑨<br>线材规格<br>WIRE SPECIFIVATION                                         | W指UL2651 #30并线;                         |
|                                                                         | W REFERS TO UL2651 #30 PARALLEL;        |
| ⑩<br>线材长度                                                               | 150指产品总长度为150mm;                        |

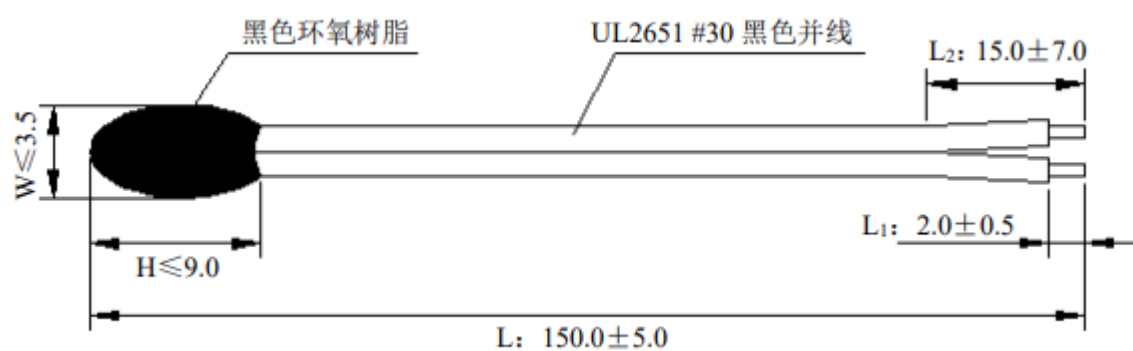
|                                                |                                                                         |
|------------------------------------------------|-------------------------------------------------------------------------|
| WIRE LENGTH                                    | 150 MEANS THE TOTAL LENGTH OF THE PRODUCT IS 150MM;                     |
| ⑪<br>环保产品<br>ENVIRONMENTAL PROTECTION PRODUCTS | E表示环保;                                                                  |
|                                                | E IS FOR ENVIRONMENTAL PROTECTION                                       |
| ⑫<br>特殊定义<br>SPECIAL DEFINITION                | WR指产品线尾撕线 $15\pm 7\text{mm}$ ;                                          |
|                                                | WR REFERS TO THE END TEAR LINE OF THE PRODUCT LINE $15\pm 7\text{MM}$ ; |
| ⑬<br>线尾剥线长度<br>STRIP LENGTH OF WIRE TAIL       | 20指产品线尾剥线长度为2.0mm。                                                      |
|                                                | THE TAIL STRIP LENGTH OF THE 20-FINGER PRODUCT LINE IS 2.0MM.           |

## 2、产品特性PRODUCTION FEATURES

### 2.1 技术参数TECHNICAL PARAMETER

| 型号规格<br>SPECIFICATION AND MODEL       | 额定零功率电阻值<br>RATED ZERO POWER RESISTANCE VALUE | B (K) | 耗散系数<br>DISSIPATION COEFFICIENT (S) | 热时间常数<br>THERMAL TIME CONSTANT (S) | 额定功率<br>RATED POWER (mw) | 工作温度范围<br>(°C) |
|---------------------------------------|-----------------------------------------------|-------|-------------------------------------|------------------------------------|--------------------------|----------------|
| SNS104B <sub>i</sub> 3950FE1W150EWR20 | 100K                                          | 3950  | ≥2.5                                | ≤15                                | 150                      | -40~105        |

### 2.2 外形尺寸PRODUCTION DIMENSION



(单位UNIT: MM)

### 3、检验规则 INSPECTION REGULATIONS

#### 3.1 出厂检验 DELIVERY INSPECTION

| 序号<br>SEQUENCE | 检测项目<br>TEST ITEM                    | 检验方法<br>INSPECTION METHOD                                                                                                    | 性能要求<br>PERFORMANCE REQUIREMENT                                                                                      |
|----------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| (1)            | $R_{25}$                             | 将待测品置于 25°C高精度油槽内稳定后测量<br>THE PRODUCT TO BE MEASURED IS PLACED IN A 25°C HIGH PRECISION OIL TANK FOR STABILITY               | $100K\Omega \pm 1\%$                                                                                                 |
| (2)            | $B_{25/50}$                          | 将待测品置于25°C、50°C精度油槽内稳定后测量<br>THE PRODUCT TO BE TESTED IS PLACED IN A HIGH PRECISION OIL TANK AT 25°C AND 85AND THEN MEASURED | $3950K \pm 1\%$                                                                                                      |
| (3)            | 外观<br>APPEARANCE                     | 目测检查<br>VISUAL INSPECTION                                                                                                    | 产品符合2.2的外形要求，无针孔、氧化、烫伤等<br>THE PRODUCT MEETS THE APPEARANCE REQUIREMENTS OF 2.2,WITHOUT PINHOLES,OXIDATION,BURNS,ETC |
| (4)            | 尺寸<br>DIMENSION                      | 用精度0.01mm卡尺和精度1mm直尺测量<br>MEASURE WITH A CALIPER WITH ACCURACY OF 0.01MM AND A STRAIGHT RULER WITH ACCURACY OF 1MM            | 符合2.2的外形尺寸<br>CONFORM TO THE DIMENSIONS OF 2.2                                                                       |
| (5)            | 绝缘电阻测试<br>INSULATION RESISTANCE TEST | 绝缘电压INSULATION VOLTAGE: 300V <sub>DC</sub><br>时间TIME: 1min                                                                   | 无外观损伤 NO APPARENT DAMAGE<br>绝缘电阻 INSULATION RESISTANCE: $\geq 150 M\Omega$                                           |

### 3.2 型式检验 PATTERN INSPECTION

| 序号<br>SEQUENCE | 检验项目<br>ITEMS                   | 检验标准<br>STANDARD            | 检验标准<br>STANDARD                                                                           | 性能要求<br>PERFORMANCE<br>REQUIREMENTS                                                         |
|----------------|---------------------------------|-----------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| (1)            | 跌落 FALL                         | IEC68-2-32                  | 跌落高度 DROP HEIGHT: 1±0.1m<br>跌落次数 NUMBER OF DROPS: 1<br>跌落面 FALLING SURFACE: 水泥 CEMENT      | 无外观损伤<br>NO COSMETIC DAMAGE<br>$ \Delta R_{25}/R_{25}  \leq 1\%$<br>$ \Delta B/B  \leq 2\%$ |
| (2)            | 湿热负载<br>MOIST HEAT LOAD         | IEC68-2-2/IEC68-2-3/CNS5550 | 温度 TEMPERATURE: 40±2°C<br>湿度 HUMIDITY: 90~95%RH<br>时间 TIME: 500±12h; 工作电流 PERATING CURRENT | 无外观损伤<br>NO COSMETIC DAMAGE<br>$ \Delta R_{25}/R_{25}  \leq 5\%$<br>$ \Delta B/B  \leq 2\%$ |
| (3)            | 高温存储<br>HIGHT TEMPERATURE LOADS | IEC68-2-2/CNS5550           | 温度 TEMPERATURE: 105±2°C<br>时间 TIME: 1000±24h                                               | 无外观损伤<br>NO COSMETIC DAMAGE<br>$ \Delta R_{25}/R_{25}  \leq 5\%$<br>$ \Delta B/B  \leq 2\%$ |
| (4)            | 冷热冲击<br>COLD AND HEAT SHOCK     | IEC68-2-14                  | 温度 TEMPERATURE: -40°C, +105°C<br>周期 PERIOD: 100,30min/cyc                                  | 无外观损伤<br>NO COSMETIC DAMAGE<br>$ \Delta R_{25}/R_{25}  \leq 5\%$<br>$ \Delta B/B  \leq 2\%$ |
| (5)            | 低温存储<br>LOW TEMPERATURE STORAGE | IEC68-2-1                   | 温度 TEMPERATURE: -40±2°C<br>时间 TIME: 1000±24h                                               | 无外观损伤<br>NO COSMETIC DAMAGE<br>$ \Delta R_{25}/R_{25}  \leq 2\%$<br>$ \Delta B/B  \leq 2\%$ |
| (6)            | 耐久性<br>DURABILITY               | UL1434                      | 环境温度 ENVIRONMENT TEMPERATURE: 25±2°C<br>周期 PERIOD: 6000                                    | 无外观损伤<br>NO COSMETIC DAMAGE<br>$ \Delta R_{25}/R_{25}  \leq 5\%$<br>$ \Delta B/B  \leq 2\%$ |

#### 4、包装、贮存 PACKAGE & STORAGE

##### 4.1 包装 PACKAGE

| 序号<br>SEQUENCE | 包装方式<br>PACKAGING         | 包装材料、尺寸<br>PACKAGING MATERIAL & DIMENSION | 产品数量<br>QUANTITY OF<br>PRODUCT |
|----------------|---------------------------|-------------------------------------------|--------------------------------|
| (1)            | 包装袋<br>PACKING BAG        | 热封口袋 HEAT SEAL POCKET                     | 1000PCS                        |
| (2)            | 内包装盒<br>INNER BOX         | 纸箱 CARTON,<br>L×W×H=185mm×70mm×190mm      |                                |
| (3)            | 外包装箱<br>OUTER PACKING BOX | 纸箱 CARTON,<br>L×W×H=370mm×205mm×215mm     |                                |

##### 4.2 贮存 STORAGE

产品密封保存，存放产品的仓库环境温度-10℃~+40℃、相遇湿度不大于70%，仓库内不允许有各、易爆的种有害气体、易爆的产品及有腐蚀腐蚀性的化学物品，并且无强烈的机械震动、冲击和强辐射的作用，包装箱应垫高地面至少20cm，距离墙壁、热源、冷源、窗口或空气入口至少50cm。

- THIS PRODUCT MUST BE KEPT SEALED.
- STORE IN AN ORDINARY ENVIRONMENT (NORMAL ROOM TEMPERATURE, HUMIDITY AND ATMOSPHERIC PRESSURE).
- STORAGE TEMPERATURE: -10℃~+40℃
- RELATIVE HUMIDITY: ≤70%RH.
- KEEP AWAY FROM CORROSIVE GASES, DEOXIDIZING GAS, FLAMMABLE GAS OR DIRECT SUNLIGHT.
- AVOID STRONG MECHANICAL VIBRATION, SHOCK.
- THE PACKING BOX SHOULD BE RAISED AT LEAST 20CM ABOVE THE GROUND AND AT LEAST 50CM AWAY FROM THE WALL, HEAT SOURCE, COLD SOURCE, WINDOWS OR AIR INLET.
- ABNORMAL STORAGE AND OPERATING CONDITIONS MAY CAUSE MALFUNCTION FUNCTION OR FAILURE OF OUR PRODUCTS.

# 5、电阻 – 温度特性表 RESISTANCE-TEMPERATURE CHARACTERISTIC TABLE

$R_{25}=100K\Omega\pm1\%$   
 $B25/85=3950K\pm1\%$

| T(°C) | R <sub>Min</sub> (KΩ) | R <sub>Nor</sub> (KΩ) | R <sub>Max</sub> (KΩ) | T(°C) | R <sub>Min</sub> (KΩ) | R <sub>Nor</sub> (KΩ) | R <sub>Max</sub> (KΩ) |
|-------|-----------------------|-----------------------|-----------------------|-------|-----------------------|-----------------------|-----------------------|
| -40   | 3174.9320             | 3321.3325             | 3474.1363             | -1    | 334.9421              | 342.5164              | 350.2269              |
| -39   | 2973.2107             | 3108.2479             | 3249.0932             | 0     | 318.4663              | 325.5021              | 332.6601              |
| -38   | 2785.6621             | 2910.2652             | 3040.1378             | 1     | 302.8222              | 309.3549              | 315.9970              |
| -37   | 2611.1992             | 2726.2170             | 2846.0164             | 2     | 288.0411              | 294.1062              | 300.2691              |
| -36   | 2448.8250             | 2555.0331             | 2665.5809             | 3     | 274.0704              | 279.7009              | 285.4186              |
| -35   | 2297.6246             | 2395.7322             | 2497.7791             | 4     | 260.8611              | 266.0875              | 271.3914              |
| -34   | 2156.7580             | 2247.4139             | 2341.6461             | 5     | 248.3674              | 253.2179              | 258.1372              |
| -33   | 2025.4535             | 2109.2515             | 2196.2968             | 6     | 236.5464              | 241.0472              | 245.6091              |
| -32   | 1903.0018             | 1980.4857             | 2060.9184             | 7     | 225.3580              | 229.5336              | 233.7632              |
| -31   | 1788.7503             | 1860.4184             | 1934.7645             | 8     | 214.7649              | 218.6379              | 222.5584              |
| -30   | 1682.0986             | 1748.4076             | 1817.1488             | 9     | 204.7320              | 208.3234              | 211.9565              |
| -29   | 1582.4940             | 1643.8627             | 1707.4404             | 10    | 195.2266              | 198.5558              | 201.9216              |
| -28   | 1489.4271             | 1546.2397             | 1605.0589             | 11    | 186.3016              | 189.3891              | 192.5085              |
| -27   | 1402.4285             | 1455.0378             | 1509.4697             | 12    | 177.8251              | 180.6871              | 183.5768              |
| -26   | 1321.0652             | 1369.7952             | 1420.1805             | 13    | 169.7725              | 172.4242              | 175.0998              |
| -25   | 1244.9378             | 1290.0859             | 1336.7377             | 14    | 162.1207              | 164.5762              | 167.0522              |
| -24   | 1173.6773             | 1215.5173             | 1258.7229             | 15    | 154.8480              | 157.1205              | 159.4103              |
| -23   | 1106.9432             | 1145.7265             | 1185.7500             | 16    | 147.9338              | 150.0356              | 152.1520              |
| -22   | 1044.4206             | 1080.3787             | 1117.4629             | 17    | 141.3589              | 143.3014              | 145.2561              |
| -21   | 985.8184              | 1019.1642             | 1053.5326             | 18    | 135.1051              | 136.8991              | 138.7031              |
| -20   | 930.8673              | 961.7970              | 993.6550              | 19    | 129.1554              | 130.8108              | 132.4743              |
| -19   | 879.2523              | 907.9437              | 937.4775              | 20    | 123.4935              | 125.0198              | 126.5522              |
| -18   | 830.8189              | 857.4390              | 884.8235              | 21    | 118.1043              | 119.5101              | 120.9205              |
| -17   | 785.3521              | 810.0548              | 835.4508              | 22    | 112.9735              | 114.2670              | 115.5636              |
| -16   | 742.6526              | 765.5797              | 789.1357              | 23    | 108.0876              | 109.2763              | 110.4670              |
| -15   | 702.5356              | 723.8181              | 745.6707              | 24    | 103.4337              | 104.5248              | 105.6167              |
| -14   | 664.8297              | 684.5884              | 704.8638              | 25    | 99.0000               | 100.0000              | 101.0000              |
| -13   | 629.3760              | 647.7223              | 666.5368              | 26    | 94.6951               | 95.6937               | 96.6932               |
| -12   | 596.0267              | 613.0636              | 630.5245              | 27    | 90.6021               | 91.5977               | 92.5949               |
| -11   | 564.6447              | 580.4674              | 596.6739              | 28    | 86.7096               | 87.7005               | 88.6938               |
| -10   | 535.1027              | 549.7991              | 564.8425              | 29    | 83.0066               | 83.9914               | 84.9795               |
| -9    | 507.2821              | 520.9334              | 534.8985              | 30    | 79.4828               | 80.4604               | 81.4418               |
| -8    | 481.0728              | 493.7541              | 506.7191              | 31    | 76.1286               | 77.0978               | 78.0716               |
| -7    | 456.3723              | 468.1532              | 480.1901              | 32    | 72.9350               | 73.8949               | 74.8600               |
| -6    | 433.0851              | 444.0299              | 455.2057              | 33    | 69.8933               | 70.8431               | 71.7986               |
| -5    | 411.1224              | 421.2906              | 431.6671              | 34    | 66.9956               | 67.9345               | 68.8796               |
| -4    | 390.4013              | 399.8481              | 409.4825              | 35    | 64.2343               | 65.1616               | 66.0957               |
| -3    | 370.8447              | 379.6212              | 388.5664              | 36    | 61.6022               | 62.5174               | 63.4399               |
| -2    | 352.3807              | 360.5341              | 368.8393              | 37    | 59.0926               | 59.9952               | 60.9056               |

| T(°C) | R <sub>Min</sub> (KΩ) | R <sub>Nor</sub> (KΩ) | R <sub>Max</sub> (KΩ) | T(°C) | R <sub>Min</sub> (KΩ) | R <sub>Nor</sub> (KΩ) | R <sub>Max</sub> (KΩ) |
|-------|-----------------------|-----------------------|-----------------------|-------|-----------------------|-----------------------|-----------------------|
| 38    | 56.6992               | 57.5888               | 58.4866               | 72    | 15.8452               | 16.2982               | 16.7626               |

|    |         |         |         |     |         |         |         |
|----|---------|---------|---------|-----|---------|---------|---------|
| 39 | 54.4159 | 55.2922 | 56.1771 | 73  | 15.3148 | 15.7580 | 16.2124 |
| 40 | 52.2372 | 53.0999 | 53.9715 | 74  | 14.8047 | 15.2383 | 15.6829 |
| 41 | 50.1577 | 51.0065 | 51.8646 | 75  | 14.3142 | 14.7383 | 15.1734 |
| 42 | 48.1723 | 49.0072 | 49.8515 | 76  | 13.8423 | 14.2571 | 14.6829 |
| 43 | 46.2764 | 47.0971 | 47.9276 | 77  | 13.3882 | 13.7940 | 14.2107 |
| 44 | 44.4653 | 45.2718 | 46.0884 | 78  | 12.9513 | 13.3482 | 13.7560 |
| 45 | 42.7350 | 43.5272 | 44.3297 | 79  | 12.5308 | 12.9190 | 13.3180 |
| 46 | 41.0814 | 41.8593 | 42.6477 | 80  | 12.1259 | 12.5057 | 12.8961 |
| 47 | 39.5006 | 40.2642 | 41.0385 | 81  | 11.7361 | 12.1076 | 12.4896 |
| 48 | 37.9891 | 38.7385 | 39.4987 | 82  | 11.3606 | 11.7240 | 12.0978 |
| 49 | 36.5436 | 37.2788 | 38.0249 | 83  | 10.9990 | 11.3545 | 11.7203 |
| 50 | 35.1608 | 35.8818 | 36.6140 | 84  | 10.6507 | 10.9984 | 11.3563 |
| 51 | 33.8376 | 34.5447 | 35.2629 | 85  | 10.3150 | 10.6551 | 11.0053 |
| 52 | 32.5713 | 33.2644 | 33.9689 | 86  | 9.9915  | 10.3242 | 10.6669 |
| 53 | 31.3590 | 32.0383 | 32.7291 | 87  | 9.6796  | 10.0051 | 10.3405 |
| 54 | 30.1982 | 30.8639 | 31.5412 | 88  | 9.3790  | 9.6974  | 10.0256 |
| 55 | 29.0865 | 29.7387 | 30.4026 | 89  | 9.0891  | 9.4006  | 9.7218  |
| 56 | 28.0215 | 28.6604 | 29.3110 | 90  | 8.8095  | 9.1143  | 9.4286  |
| 57 | 27.0010 | 27.6269 | 28.2644 | 91  | 8.5399  | 8.8380  | 9.1456  |
| 58 | 26.0230 | 26.6359 | 27.2605 | 92  | 8.2797  | 8.5714  | 8.8724  |
| 59 | 25.0855 | 25.6857 | 26.2975 | 93  | 8.0287  | 8.3141  | 8.6087  |
| 60 | 24.1866 | 24.7742 | 25.3735 | 94  | 7.7865  | 8.0657  | 8.3540  |
| 61 | 23.3245 | 23.8998 | 24.4868 | 95  | 7.5527  | 7.8258  | 8.1080  |
| 62 | 22.4976 | 23.0607 | 23.6355 | 96  | 7.3270  | 7.5942  | 7.8705  |
| 63 | 21.7042 | 22.2554 | 22.8182 | 97  | 7.1090  | 7.3705  | 7.6409  |
| 64 | 20.9428 | 21.4823 | 22.0333 | 98  | 6.8986  | 7.1545  | 7.4191  |
| 65 | 20.2121 | 20.7399 | 21.2795 | 99  | 6.6953  | 6.9457  | 7.2048  |
| 66 | 19.5105 | 20.0270 | 20.5552 | 100 | 6.4989  | 6.7440  | 6.9976  |
| 67 | 18.8367 | 19.3422 | 19.8592 | 101 | 6.3092  | 6.5491  | 6.7973  |
| 68 | 18.1897 | 18.6842 | 19.1903 | 102 | 6.1259  | 6.3606  | 6.6037  |
| 69 | 17.5681 | 18.0520 | 18.5473 | 103 | 5.9488  | 6.1785  | 6.4164  |
| 70 | 16.9709 | 17.4442 | 17.9290 | 104 | 5.7775  | 6.0024  | 6.2353  |
| 71 | 16.3969 | 16.8600 | 17.3345 | 105 | 5.6120  | 5.8321  | 6.0602  |