# Cheemi Technology Co., Ltd

# 规格承认书

## APPROVAL SHEET

客户名称 CUSTOMER：

产品名称 PART NAME：CMNTC补偿型 NTC 热敏电阻器 CMNTC Compensation NTC Thermistor

产品规格 PART NUMBER：CMNTC-104J4400

产品编号 PRODUCTCODE：

版次 REV.NO：B0

日期 DATE：2022-10-8

确认

CONFIRM

| 客户 CLIENT | | | 供货商/制造商 MANUFACTOR | |
|---|---|---|---|---|
| 品保部 Quality Dep. | | | 规格书制作 Design | 吴迎丽 |
| 制造部 Production Dep. | | | 业务部审核 Checked by sales | |
| 工程部 Engineering Dep. | | | 技术部审核 Checked by R&D | 程鹏 |
| | | | 品质部审核 Checked by QA | 李少媛 |

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# 变 更 记 录 表

## REVISED RECORD SHEET

| 版次<br>REV. NO | 变更日期<br>REV.DATE | 变更内容<br>CHANGE CONTENT | 申请人<br>APPLICANT | 批准人<br>APPROVED |
|---|---|---|---|---|
| A0 | 2015/10/11 | 版本制定。<br>Version formulation | 鞠晓丽 | 李少媛 |
| B0 | 2022/4/1 | 更新规格书版本格式，增加版次管控，细化规格纸。<br>Update for version form of datasheet,add to management and control for number of edition,refine to PN and draw. | 王月婷 | 李少媛 |
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## 1、产品型号说明 Product model specification

| CMNTC | 104 | J | 4400 |
|---|---|---|---|
| ① | ② | ③ | ④ |

① CMNTC：补偿型 NTC 热敏电阻

② 104：25℃的零功率电阻值 10KΩ

③ J：阻值精度代码 J-±5% K-±10% M-±20%

④ 4400：B-value=4400K

## 2、电气性能 Electrical Characteristics

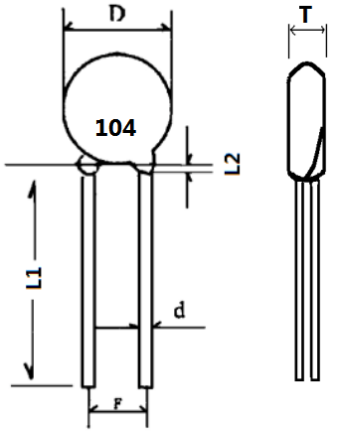
| No. | 项目 Item | 符号 Symbol | 测试条件 Test conditions | 单位 Unit | 性能要求 Requirements |
|---|---|---|---|---|---|
| 2.1 | 25℃的零功率电阻值 Zero Power Resistance at 25℃ | $R_{25℃}$ | Ta=25±0.5℃ （ 测试功率≤0.1mW 空气中测试） Test Power≤0.1mW, in air) | KΩ | 100KΩ ±5% |
| 2.2 | B 值 B-value | $B_{25/50}$ | $B=[(T_a\times T_b)/(T_b-T_a)]\times \ln(R_a/R_b)$ Ta=25±0.01℃ $T_b$=50℃±0.01℃ | K | 4400±10% |
| 2.3 | 耗散系数 Thermal dissipation Coefficient | δ | 静止空气中 In still air | mW/℃ | 约 4.5 |
| 2.4 | 时间常数 Thermal time constant | τ | 静止空气中 In still air | sec | 约 20 |
| 2.5 | 绝缘电阻 Insulation resistance | / | 1000V/DC 1min | MΩ | ≥500 |
| 2.9 | 工作温度范围 Operating temperature range | / | / | ℃ | -30 ~ 125 |
| 2.10 | 最大额定功率 Maximum rated power | Pmax | / | mW | 450 |

## 3、产品图纸 Product drawing

| 产品图纸 Product drawing | | 客户确认 Customer confirm | 客户名称 Customer： | | | |
|---|---|---|---|---|---|---|
| | | | 确认 Confirm | | 日期 DATE | |
| 产品型号 MODEL NO. | CMNTC 104J4400 | | 审核 Approve: | | 日期 DATE | |

**尺寸 Dimensions：**

1（Unit：mm）




| D±0.5 | L1 | L2 | F±0.5 | T | d±0.05 |
|---|---|---|---|---|---|
| 5.2 | Min25 | Max2.5 | 2.5 | Max4.0 | 0.45 |

**技术要求 Technical requirements：**

1）零功率阻值：R25：100KΩ ±5%(Zero Power Resistance: R25：100KΩ±5%)；
2）B25/50 数值：4400K±10%(B-value:B25/50: 4400K±10%)；
3）线材：镀锡铜包钢线（ tinned copper-weld steel wire)；
4）封装：绿色环氧树脂（Green Epoxy resin）；
5）符合 RoHS 环保要求（Meet environmental protection requirements:RoHS）。

更新履历 Revised record sheet

| 版本 REV. NO | 更新时间 REV.DATE | 更新内容 Change content | 申请人 Applicant | 批准人 Approved |
|---|---|---|---|---|
| A0 | 2015.4.10 | 版本制定。<br>ersion formulation | 王月婷 | 李少媛 |
| B0 | 2022.4.1 | 更新规格书版本格式，增加版次管控<br>Update for version form of datasheet,add to management and control for number of edition | 王月婷 | 李少媛 |
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## 4、可靠性 Reliability

| No. | 项目<br>Item | 试验标准 | 试验条件及方法<br>Test conditions and methods | 性能要求<br>Requirements |
|---|---|---|---|---|
| 4.1 | 引出端强度<br>Terminal strength | IEC60068-2-21 | 线径 lead diameter(mm) / 拉力（N） Pull strength(N)<br>0.35<d≤0.5 : 5<br>0.5<d≤0.8 : 10<br>时间：10±1秒<br>time：10±1 sec | 无可见性损伤<br>No obvious damage<br>$R_{25}$ ΔR/R≤±3% |
| 4.2 | 可焊性<br>Solderability | IEC60068-2-20 | 温度 245±5℃时间 2-3 秒<br>temperature : 245±5℃ for 2-3sec | 着锡面积≥95%<br>Coverage area ≥ 95%. |
| 4.3 | 耐焊接热<br>Withstand weiling temp | IEC60068-2-20 | 锡锅温度：260±5℃，浸入深度距电阻体 6mm，时间 10±1 秒<br>Temperature of tin pot:260±5℃, insert deepth from body of resistance 6mm, time 10±1senconds | $R_{25}$ ΔR/R≤±3% |
| 4.4 | 稳态湿热<br>Steady humidity and heat | IEC60068-2-78 | 温度：40℃±2℃，湿度：93±2%，时间：500 小时<br>Temp：40℃±2℃，humidity：93±2%，<br>Time ： 500hrs | $R_{25}$ ΔR/R≤±3% |
| 4.5 | 温度快速变化<br>Rapid changes in temperature | IEC60068-2-14 | -30℃30min→25℃5min→125℃ 30min→25℃5min，5cycles | $R_{25}$ ΔR/R≤±3% |
| 4.6 | 高温储存<br>High temperature storage | IEC60068-2-2 | 温度: 125℃±5℃<br>时间:1000 小时<br>Temp :125℃±5℃， Time :1000hrs | $R_{25}$ ΔR/R≤±5% |
| 4.7 | 低温储存<br>Low temperature storage | IEC60539-1 | 温度:-30℃±5℃<br>时间:1000 小时<br>Temp :-30℃±5℃， Time :1000hrs | $R_{25}$ ΔR/R≤±5% |

▲注： 1）稳态湿热及温度快速变化试验结束后，样品需在常温环境下静置 2 小时后再做性能测试；

▲Note： 1) After the test of steady-state humid heat and rapid temperature change, the sample should be kept for 2 hours at room temperature before performance test ;

2）高温/低温存储结束后，需随测试环境自然恢复至常温，再取出做性能测试。

2) After the test of high/low-temperature storage is complete, and then take it out for performance test when the test environment naturally regain to normal temperature.

## 5、产品包装 Product packaging

5.1 包装方式 Packing Type

■ 散装方式 Bulk Type　　□ 编编带方式 Reel Type

5.2 包装规格 Packing specification

| No. | 包装规格<br>Packing specification | 包装材料、尺寸<br>Packing material, size | 产品数量<br>Quantity |
|---|---|---|---|
| 1 | 包装袋 Packing bag | 自封口袋(self sealing bag)<br>W×H＝11mm×12mm | **1000** |
| 2 | 编编带包装盒 reel packing box | 包装盒 packing box<br>W×G×H＝335mm×240mm×50mm | **1000** |

## 6、安装&使用注意事项 Installation & Use precautions

6.1 本产品的用途：用于温度补偿；

Purpose of product:Be used for temperature compensation;

6.2 烙铁焊接时，焊接处距包封头部距离至少 2mm，焊接温度应低于 360℃，焊接时间＜3ses；

When welded by soldering iron,weld spot should be 2mm at least from head,weld temperature should be under 360℃,time＜3ses

6.3 储存温度：-10℃ ～ 40℃；储存湿度：≤75% RH；

storage temp:-10℃ ～ 40℃；storage humidity:≤75% RH

6.4 避免存放在具有腐蚀性气体及光照的环境下；

To avoid of leaving with such environment as corrosive gases and illumination

6.5 包装打开后需重新密封保存，贮存期 1 年，超过贮存期，可按本标准规定的项目重新检验，如符合要求仍可使用；

The packing need to be resealed since opened,storage period 1 year.once valid,it should be retest according to regulated of criterion and can be still used if meet the requirement.

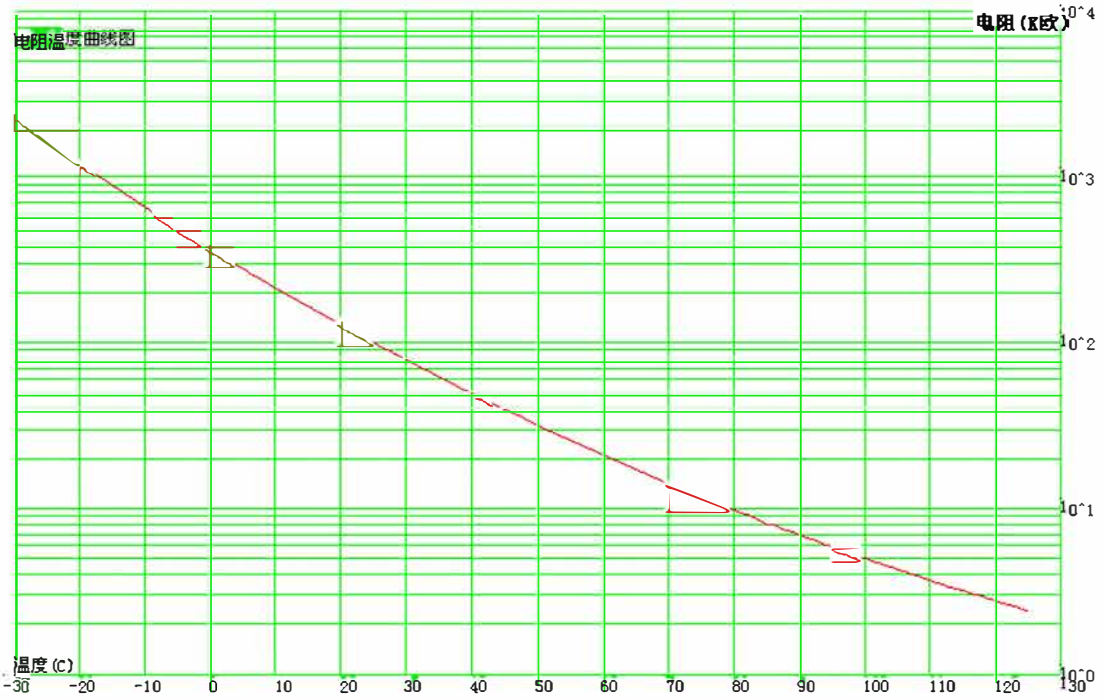
## 7、产品认证 Product certification

| No. | 项目<br>Projects | 产品认证<br>Product certification |
|---|---|---|
| 7.1 | 质量管理体系认证<br>Quality Management System Certification | ISO9001:2015 |
| | | IATF16949：2016 |
| 7.2 | 环境管理体系认证<br>Environmental Management System Certification | ISO14001:2015 |
| 7.3 | 环保检测报告<br>Environmental test report | RoHS 2.0 |
| 7.4 | CQC 认证　CQC certificate | |
| 7.5 | TUV 认证　TUV certificate | R50245893 |
| 7.6 | UL 认证　UL certificate | E240993 |
| 7.7 | 江苏省高新技术产品认证<br>High-tech product certificate in Jiangsu Province | |

# Cheemi Technology Co., Ltd (Resistance Thermometer)

R25=100KΩ B25/50=4400K

| T | R | T | R | T | R | T | R | T | R | T | R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -30 | 2362 | -4 | 462.562 | 22 | 115.924 | 48 | 34.689 | 74 | 12.198 | 100 | 5 |
| -29 | 2203.46 | -3 | 436.935 | 23 | 110.324 | 49 | 33.225 | 75 | 11.754 | 101 | 4.845 |
| -28 | 2056.98 | -2 | 412.867 | 24 | 105.022 | 50 | 31.83 | 76 | 11.329 | 102 | 4.696 |
| -27 | 1921.53 | -1 | 390.254 | 25 | 100 | 51 | 30.501 | 77 | 10.921 | 103 | 4.553 |
| -26 | 1796.15 | 0 | 369 | 26 | 95.242 | 52 | 29.234 | 78 | 10.531 | 104 | 4.415 |
| -25 | 1680 | 1 | 349.014 | 27 | 90.733 | 53 | 28.027 | 79 | 10.157 | 105 | 4.283 |
| -24 | 1572.29 | 2 | 330.215 | 28 | 86.46 | 54 | 26.876 | 80 | 9.798 | 106 | 4.155 |
| -23 | 1472.35 | 3 | 312.525 | 29 | 82.408 | 55 | 25.778 | 81 | 9.454 | 107 | 4.031 |
| -22 | 1379.54 | 4 | 295.874 | 30 | 78.567 | 56 | 24.731 | 82 | 9.124 | 108 | 3.913 |
| -21 | 1293.27 | 5 | 280.194 | 31 | 74.922 | 57 | 23.732 | 83 | 8.808 | 109 | 3.798 |
| -20 | 1213.04 | 6 | 265.424 | 32 | 71.465 | 58 | 22.778 | 84 | 8.504 | 110 | 3.688 |
| -19 | 1138.37 | 7 | 251.507 | 33 | 68.184 | 59 | 21.868 | 85 | 8 | 111 | 3.581 |
| -18 | 1068.82 | 8 | 238.388 | 34 | 65.069 | 60 | 21 | 86 | 7.934 | 112 | 3.479 |
| -17 | 1004 | 9 | 226.019 | 35 | 62.112 | 61 | 20.17 | 87 | 7.666 | 113 | 3.38 |
| -16 | 943.557 | 10 | 214 | 36 | 59.304 | 62 | 19.378 | 88 | 7.408 | 114 | 3.284 |
| -15 | 887.151 | 11 | 203.346 | 37 | 56.637 | 63 | 18.621 | 89 | 7.161 | 115 | 3.192 |
| -14 | 834.485 | 12 | 192.958 | 38 | 54.103 | 64 | 17.898 | 90 | 6.923 | 116 | 3.103 |
| -13 | 785.282 | 13 | 183.151 | 39 | 51.695 | 65 | 17.207 | 91 | 6.695 | 117 | 3.017 |
| -12 | 739.289 | 14 | 173.89 | 40 | 49.406 | 66 | 16.546 | 92 | 6.475 | 118 | 2.934 |
| -11 | 696.274 | 15 | 165.142 | 41 | 47.23 | 67 | 15.915 | 93 | 6.265 | 119 | 2.854 |
| -10 | 656.023 | 16 | 156.877 | 42 | 45.16 | 68 | 15.311 | 94 | 6.062 | 120 | 2.776 |
| -9 | 618.339 | 17 | 149.065 | 43 | 43.192 | 69 | 14.733 | 95 | 5.867 | 121 | 2.702 |
| -8 | 583.041 | 18 | 141.68 | 44 | 41.32 | 70 | 14.181 | 96 | 5.68 | 122 | 2.629 |
| -7 | 549.962 | 19 | 134.696 | 45 | 39.538 | 71 | 13.652 | 97 | 5.5 | 123 | 2.56 |
| -6 | 518.949 | 20 | 128.09 | 46 | 37.842 | 72 | 13.146 | 98 | 5.327 | 124 | 2.492 |
| -5 | 489.86 | 21 | 121.839 | 47 | 36.227 | 73 | 12.662 | 99 | 5.16 | 125 | 2.427 |


电阻温度曲线图
电阻 (KΩ)
10^4
10^3
10^2
10^1
10^0
温度 (C)
-30
-20
-10
0
10
20
30
40
50
60
70
80
90
100
110
120
130