

# KNSCHA

Empowering The World

## 广东科尼盛电子科技有限公司

## KNSCHA ELECTRONICS CO.,LIMITED

IATF16949:2016

ISO9001:2015

ISO14001:2015

### 部品规格书 APPROVE SHEET

|                          |                                                         |
|--------------------------|---------------------------------------------------------|
| 客 户 名 称<br>Customer Name |                                                         |
| 产 品 名 称<br>Product Name  | NTC直插热敏电阻器<br>Negative Temperature Coefficient Resistor |
| 客 户 料 号<br>Customer P/N  |                                                         |
| 科 尼 盛 料 号<br>KNSCHA P/N  | 206RV190                                                |
| 型 号 规 格<br>Product Type  | NTC 33D-7 阻抗33Ω,直径Φ D=7mm P=5mm 黑色涂装 外弯脚                |
| 日 期<br>Date              | 2025-04-14                                              |

|                    |                 |
|--------------------|-----------------|
| 制 造<br>Manufacture |                 |
| 核 准<br>APPROVAL    | 制 作<br>PREPARED |
| 王 伟                | 刘 国 华           |

|                                |                |                 |
|--------------------------------|----------------|-----------------|
| 客 户 承 认 栏<br>CUSTOMER APPROVED |                |                 |
| 核 准<br>APPROVED                | 确 认<br>CHECKED | 经 办<br>DESIGNED |
|                                |                |                 |

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## KNSCHA ELECTRONICS CO., LIMITED

IATF16949:2016 ISO9001:2015 ISO14001:2015

### Aluminum Electrolytic Capacitors

- Source Manufacturer
- 25+ Years Experience
- 7X24 Hours Online Service



### Film Capacitors

- Source Manufacturer
- 10+ Years Experience



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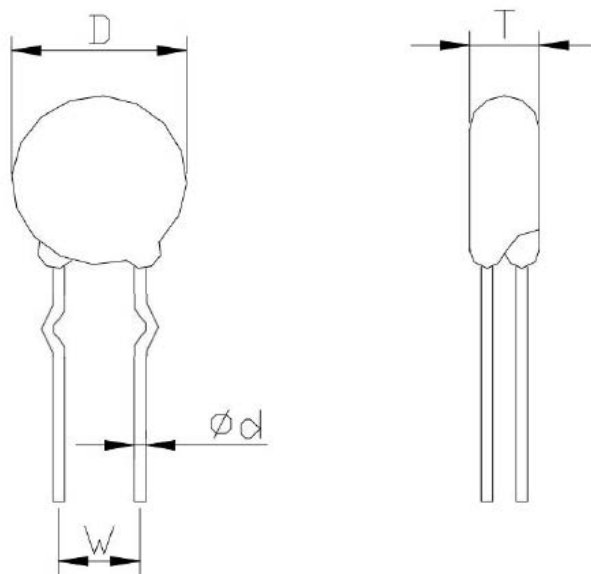
## 1.0 概述 Summary

NTC 热敏电阻是一种负温度系数电阻器，其阻值随环境温度的升高而降低，这种热敏电阻是由 2 种或 4 种铁、镍、钴、锰或铜的金属氧化物经过成型并在高温下烧结而制得。

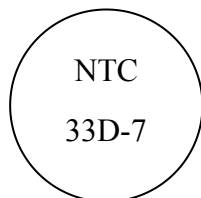
NTC Thermistor is a Negative Temperature Coefficient Resistor whose resistance changes with ambient temperature changes. Thermistor comprises 2 or 4 kinds of metal oxides of iron, nickel, cobalt, manganese and copper, being shaped and sintered at high temperature.

## 2.0 结构及尺寸 Structure And Dimensions

### (1). 外形图 Outline Fig



### (2). 标记 Mark



### (3). 外形尺寸 Shape and Dimension : (unit :mm)

| D max | $W \pm 1.0$ | Tmax | $\varnothing d \pm 0.5$ | $L \pm 0.5$ |
|-------|-------------|------|-------------------------|-------------|
| 8.5   | 5           | 5    | 0.75                    | 长脚          |

## 3.0 型号规格表示方法 How to Order

NTC      33      D - 7

**NTC** — NTC 热敏电阻器 (NTC Thermistor)

**33** — 标称电阻为  $33\Omega$  (Resistance Value:  $33\Omega$ )

**D - 7** — 瓷片最大直径为  $\varnothing 7\text{mm}$  (Diameter of Chip:  $\varnothing 7\text{mm}$ )

### 3.1 材料 (Materials)

- 封装材料 (Wrapper) : 酚醛 (Phenolic aldehyde)
- 引线 (Down-lead) 镀锡电子线 (Tinned Electron Wire)
- 颜色 (Coating Color) : 黑色

4.0 电气性能 Performance Specification

| 项目<br>Item                                                   | 性能要求<br>Specification request |
|--------------------------------------------------------------|-------------------------------|
| 1. 标称电阻 (25℃±1℃)<br>Resistance Value                         | 33Ω±20%                       |
| 2. 最大稳态电流 (25℃)<br>Max Steady State Current                  | 0.5A                          |
| 3. 热时间常数 (约)<br>Thermal Time Constant                        | 27S                           |
| 4. 耗散系数 (约)<br>Thermal Dissipation Constant                  | 16mW / °C                     |
| 5. 工作温度<br>Operation Range                                   | -40℃~+200℃                    |
| 6. 最大电流时近似电阻值 (Ω)<br>Approximate resistance value at maximum | 1.485                         |
| 7. 最大冲击电容量 (uf/240V)<br>Max Shock Capacity                   | 47                            |

5.0 电气性能及可靠性 (electrical Properties and requirements)

| 项目<br>Item                                  | 试验条件<br>Test conditions                                                                                                                                                                                                                                   | 性能要求<br>Specification request                                                                       |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 零功率电阻值<br>Zero Power Resistance             | 在 25℃下,当由于电阻体内部发热引起的电阻值变化相对于总测量误差可以忽略不计时所测得的电阻值。                                                                                                                                                                                                          | 见电性特性参数<br>See Electrical Parameters                                                                |
| B 值<br>B-Value                              | <p>B 值可以用 25℃和 50℃时的零功率电阻值计算出来。其计算公式是:</p> $B = \frac{T_1 \cdot T_2}{T_2 - T_1} \cdot \ln \left( \frac{R_1}{R_2} \right)$ <p>The B Value can be calculated using the zero Power resistance value at 25℃ and 50℃.The eqution is as above</p>               | 见电性特性参数<br>See Electrical Parameters                                                                |
| 热耗散系数<br>Thermal Dissipation<br>Constant    | <p>在规定的温度下,热敏电阻中耗散的功率变化与热敏电阻相应温度变化之比。其单位: mw/℃</p> <p>The ratio of the change of the dissipation power to the corresponding change of the temperature at specified temperature. The unit is: mw/℃</p>                                                     | 见电性特性参数<br>See Electrical Parameters                                                                |
| 热时间常数<br>Thermal Time Constant              | <p>在零功率条件下,当温度发生变化时,热敏电阻的温度变化为其初始的和最终的温度差的 63.2%所需的时间。</p> <p>Under zero power condition, Thermal Time constant is the time required by a thermistor that its body temperature reach 63.2%of the difference between its initial and final temperature</p> | 见电性特性参数<br>See Electrical Parameters                                                                |
| 引出端强度<br>leads terminal<br>tensile strength | <p>在引出端一边施加 1.0kg 拉力, 10 秒</p> <p>Rasten body with a load applied to each 1.0kg for 10 sec.</p>                                                                                                                                                           | <p>无可见损伤</p> <p>电阻变化率: ±20%</p> <p>No break out and damage</p> <p>Resistance change:within ±20%</p> |
| 引出端弯曲强度<br>leads terminal bend<br>strength  | <p>固定电阻体, 在一根引出端悬挂 0.5kg 重力弯曲 90° ;然后再回复, 再把方向弯曲 90° ,</p> <p>Fixed body and hang 0.5kg on one terminal, bend 90° them back, again in opposite</p>                                                                                                        | <p>无可见损伤</p> <p>电阻变化率: ±20%</p> <p>No break out and damage</p> <p>Resistance change:within ±20%</p> |

|                                                                    |                                                                                                                                                                                                                                                                                            |                                                               |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| <p>振动<br/>vibration</p>                                            | <p>频率: 10~50Hz<br/>振幅: 1.55mm<br/>方向和时间: X、Y 及 Z 轴各 2 小时<br/>Frequency:10~50Hz<br/>Amplitude modulation:1.55mm<br/>Dirction and time:X、Y and Z direction for 2 hrs each</p>                                                                                                                | <p>无机械损伤<br/>No substantial damage</p>                        |
| <p>可焊性<br/>Solderability</p>                                       | <p>焊锡槽<br/>温度: 235±5℃<br/>Temperature: 235±5℃<br/>时间: 3S<br/>Time: 3S</p>                                                                                                                                                                                                                  | <p>涂布面积: ≥98%<br/>Covered termination: ≥98%</p>               |
| <p>耐焊接热<br/>Solder ability</p>                                     | <p>把引端浸入 350±10℃的焊锡 4.0±0.8mm 深,持续 3.0±0.5 秒时间, 静置 24 小时后测试<br/>the leadwinres shall be dipped in a molten solder of 350±10℃ for 3.0±0.5 seconds up to the point 4.0±0.8mm. after the specimen shall be left at room ambient temperature for 24 hours,the resistance shall be measured</p> | <p>电阻变化率: ±10%<br/>Resistance change:within ±10%</p>          |
| <p>高温放置<br/>(高温保存)<br/>Dry heat<br/>(high temperature storage)</p> | <p>在 125±2℃中放置 1000+48 小时, 静置 2 小时后测试<br/>0<br/>Specimen shall be subjected to an ambient of 125±2℃ for 1000+48hours.and after the specimen 0 shall be left at room ambient for 1 to 2 hours,the resistance shall be measured</p>                                                          | <p>电阻变化率:<br/>±10%<br/>Resistance change:<br/>within ±10%</p> |
| <p>低温放置<br/>(低温保存)<br/>Cold<br/>(low temperature storage)</p>      | <p>在 -40±3℃中放置 1000+48 小时, 静置 2 小时后测试<br/>0<br/>Specimen shall be subjected to an ambient of -40±3℃<br/>For 1000+48 hours.and after the specimen 0 shall be left at room ambient for 1 to 2 hours,the resistance shall be measured</p>                                                     | <p>电阻变化率:<br/>±10%<br/>Resistance change:<br/>within ±10%</p> |
| <p>稳态湿热<br/>humidity test</p>                                      | <p>40±2℃ 95%RH, 1000HR</p>                                                                                                                                                                                                                                                                 | <p>电阻变化率: ±10%<br/>Resistance change: within<br/>±10%</p>     |

|                               |                                                                                                             |                                                  |
|-------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 温度快速变化<br>Temp Cycle test     | -40℃/30' → 25℃/5' →<br>+125℃/30' → 25℃/5'                                                                   | 电阻变化率: ±20%<br>Resistance change: within<br>±20% |
| 工作温度<br>Operating Temperature | 热敏电阻器长期连续工作所允许的温度范围。<br>Allowable temperature range while the<br>thermistor work continuously for long time | -40C+200℃                                        |
| 储存条件<br>Storage Conditions    | -10℃~40℃ RH≤75%                                                                                             |                                                  |

## 6.0 R-T 关系图

