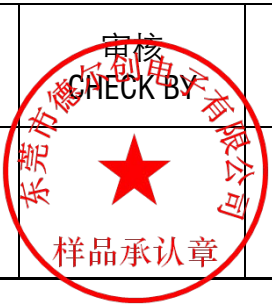


规格书  
SPECIFICATION

|                      |              |
|----------------------|--------------|
| 客户<br>CUSTOMER       | 立创           |
| 客户料号<br>CUSTOMER P/N | C4945057     |
| 规格描述<br>DESCRIPTION  |              |
| 产品编码<br>PART NUMBER  | MZ20005C0109 |
| 日期<br>DATE           | 2022-07-13   |

| 德尔创承认栏<br>APPROVED BY DERSONIC |   |                       | 客户承认栏<br>APPROVED BY CUSTOMER |                |
|--------------------------------|---|-----------------------|-------------------------------|----------------|
| 批准<br>APPROVED BY              | 审核<br>CHECK BY  | 制订<br>FORMULATE<br>BY | 批准<br>APPROVED BY             | 审核<br>CHECK BY |
|                                |  |                       |                               |                |

东莞市德尔创电子有限公司

DONGGUAN DERSONIC ELECTRONIC CO., LTD.

广东省东莞市长安镇锦厦河南工业区锦平路 5 号

No. 5, Jinping Rd., Jinxia Henan Industrial Zone, Changan Town, Dongguan City, PRC.

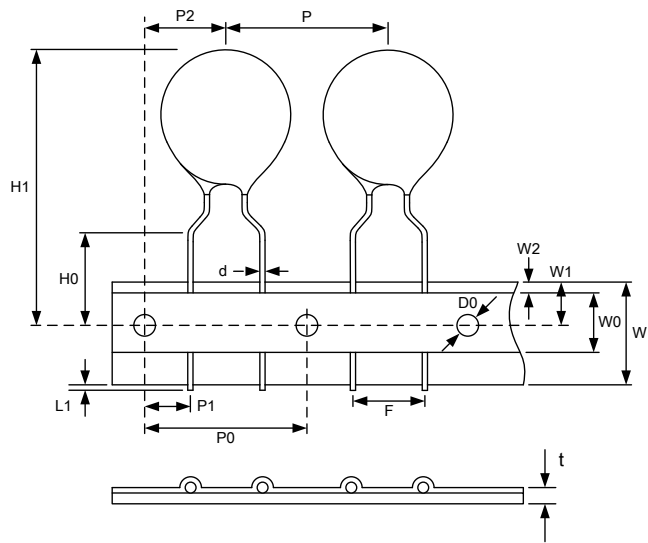
TEL: +86-769-8155 5686 FAX: +86-769-8155 5989

Website: <http://www.dersonic.com>

|                |              |       |               |     |  |
|----------------|--------------|-------|---------------|-----|--|
| PART NO.<br>料号 | MZ20005C0109 | 20D-5 | REV NO.<br>版本 | 0/A | 页次: 第 2 页, 共 7 页<br>Pages: No.2 of 7 pages |
|----------------|--------------|-------|---------------|-----|--|

1. APPEARANCE 外观

1-1. 尺寸 Dimensions (mm)



1-2. Marking 标志

NTC  
20D-5

1-3. Coating 包封

- No coating 无包封  
 Coating 包封

Material 包封材料

- PF resin 酚醛树脂  
 Silicon 硅树脂  
 Epoxy 环氧树脂  
 Others 其他

Color 颜色

- Green 绿色  
 Red 红色  
 Tan 黄色  
 Black 黑色  
 Blue 兰色

1-4. Leads 引线

- Tin-plated copper wire 镀锡铜线  
 Tin-plated steel wire 镀锡钢线  
 Straight 直形  
 Frog leg type 蛙型脚  
 In-Forming 内弯  
 Out-Forming 外弯

|              |             |             |
|--------------|-------------|-------------|
| P:12.7±1.0   | P0:12.7±0.3 | P1:3.85±1.0 |
| P2:≤6.35±1.3 | H0:16.5±0.5 | H1: ≤30.0   |
| W:18.0±1.0   | W0:8.0±2.0  | W1:9.0±1.0  |
| W2:≤3.0      | Δh:≤2.0     | t:≤0.48±0.2 |
| D0:4±0.2     | d:0.6±0.06  | F:5.0±1.0   |

2. Parameters of Technology 主要技术参数

|   |             |         |
|---|-------------|---------|
| Rated Zero-Power Resistance<br>额定零功率电阻值 R25 (Ω) | 20          | 详细见附录说明 |
| Material Constant<br>材料常数 B25/85 (K)            | 2800        | 详细见附录说明 |
| Max. Steady State Current<br>最大稳态电流 (A)         | 0.6         | 详细见附录说明 |
| Thermal Dissipation Constant<br>耗散系数(mW/°C)     | ≥6          | 详细见附录说明 |
| Thermal Time Constant<br>热时间常数τ(s)              | ≤18         | 详细见附录说明 |
| Operating Temperature Range<br>工作温度范围 (°C)      | -40°C—150°C |         |

|  |              |       |  |     |  |
|--|--------------|-------|--|-----|--|
| PART NO.<br>料号   | MZ20005C0109 | 20D-5 | REV NO.<br>版本                                | 0/A | 页次: 第 3 页, 共 7 页<br>Pages: No.3 of 7 pages |
| 3. INSPECTION 检验方法   |              |       |  |     |  |
| 3-1. Lot Inspection 批量检验<br>Sampling with IEC410 / DIN ISO 2859-1 (GB/T2828.1-2003) ; Testing with SPEC.NO.:WMF21-11034.<br>抽样方法按 IEC410/ DIN ISO 2859-1 ( GB/T2828.1-2003 ); 试验方法按 SPEC.NO.:WMF21-11034-                                  |              |       |  |     |  |
| Item 指标项目  | IL           | AQL   | Item 指标项目                                    | IL  | AQL  |
| Appearance 外观  | II           | 0.65  | Rated Zero-Power Resistance<br>额定零功率电阻 $R_N$ | II  | 0.65                                       |
| Soldering-ability 可焊性  | S-2          | 2.5   | Max. Steady State Current<br>最大稳态电流 (A)      | S-2 | 2.5  |
| 4. STORAGE CONDITIONS 存储环境条件:  |              |       |  |     |  |
| 4-1. Temperature 温度: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$  |              |       |  |     |  |
| 4-2. Humidity 湿度: $\leq 70\% \text{RH}$  |              |       |  |     |  |
| 4-3. Term 期限: $\leq 6$ months (First-in/ First-out 先进先出)   |              |       |  |     |  |
| 4-4. Place 地点:<br>Do not exposing the components to the following conditions, otherwise, it may result in deterioration of characteristics.<br>不要暴露在下列环境条件下, 否则将导致性能衰退或参数飘移:   |              |       |  |     |  |
| 1) Corrosive gas or deoxidizing gas. 腐蚀性或易氧化气体   |              |       |  |     |  |
| 2) Flammable and explosive gases. 易燃易爆气体   |              |       |  |     |  |
| 3) Oil, water and chemical liquid. 油、水和化学溶液  |              |       |  |     |  |
| 4) Under the sunlight. 太阳光下  |              |       |  |     |  |
| 4-5. Handling after seal open: After unpacking of the minimum package, reseal it promptly or store it inside a sealed container with a drying agent.<br>尽量保证开口最小化, 立即重新封好, 并贮存在密封、带有干燥剂的容器中。   |              |       |  |     |  |
| 5. WARNING 注意、警告    |              |       |  |     |  |
| Do not apply the components under the following conditions, otherwise, it may result in deterioration of characteristics, destruction of components or in the worst case, to catching fire.<br>请不要在下列条件下使用本元件, 否则将可能导致产品性能衰退或产品损毁, 甚至引发火灾: |              |       |  |     |  |
| 1) Exceeding $I_{\max}$ . 超过最大工作电流   |              |       |  |     |  |
| 2) Exceeding rated temperature range. 超过许可工作温度范围   |              |       |  |     |  |
| 3) Inferior thermal dissipation (Due to badly inferior thermal dissipation, some part of the components body will become overheated and then be damaged.)<br>散热不良 (由于散热不良, 本元件可能因部分过热而导致破坏)  |              |       |  |     |  |

PART NO.  
料号

MZ20005C0109

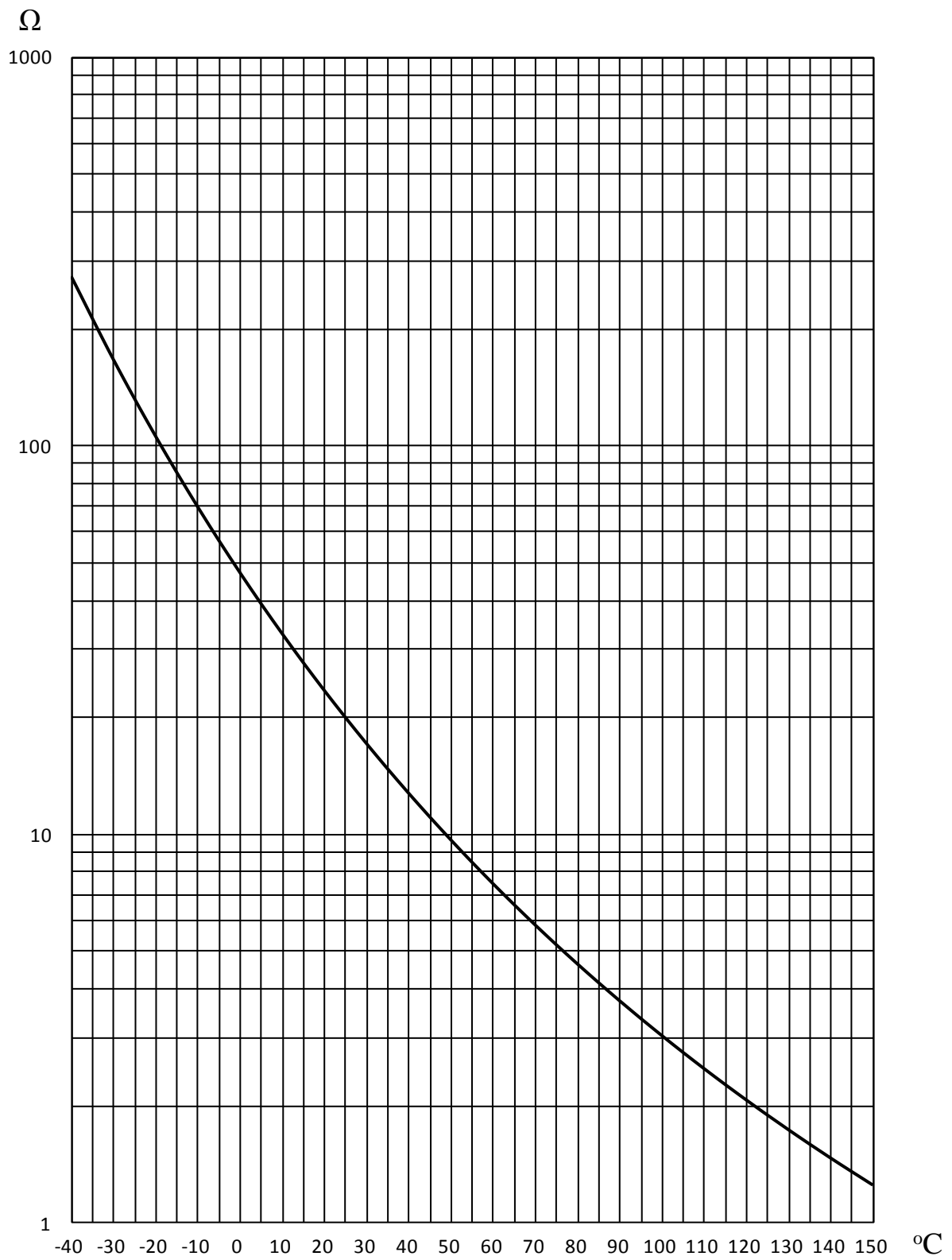
20D-5

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版本

0/A

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6. R/T curve 阻温曲线



Appendix 附录

| PART NO.<br>料号                            | MZ20005C0109   | 20D-5   | REV NO.<br>版本 | 0/A | 页次: 第 5 页, 共 7 页<br>Pages: No.5 of 7 pages |
|---|--|---|---------------|-----|--|
| 1. MECHANICAL CHARACTERISTICS 机械性能        |  |   |               |     |  |
| Item<br>指标项目                              | Specification<br>技术要求  | Test Conditions & Methods<br>测试条件/方法  |               |     |  |
| 1-1. Solder-ability<br>可焊性                | The terminals shall be uniformly tinned, and its area $\geq 95\%$<br>浸润部分上锡均匀, 上锡面积 $\geq 95\%$  | Dipping the NTC terminals to a depth of 15mm in a soldering bath of 240-245°C and to the place of 6mm far from NTC body for 2-3s (See IEC68-2-20 /GB2423.28 Ta)<br>将引出端沾助焊剂后, 浸入到温度为 240-245°C、深度为 15mm 的锡槽中锡面距 NTC 本体下端 6mm 处, 持续 2-3 秒。(参见 IEC68-2-20 /GB2423.28 试验 Ta)   |               |     |  |
| 1-2. Resistance To Soldering Heat<br>耐焊接热 | No visible mechanical damage.<br>无可见损伤<br>$\Delta R/RN \leq 20\%$<br>( $\Delta R =  RN - RN' $ ) | Dipping the NTC terminals to a depth of 15mm in a soldering bath of $265 \pm 5^\circ\text{C}$ and to the place for 6mm below from NTC body for $10 \pm 1\text{s}$ . After recovering 4-5h under $25 \pm 2^\circ\text{C}$ . The rated zero power resistance value $RN'$ shall be measured.<br>(See IEC68-2-20 /GB2423.28 Tb)<br>根据 IEC68-2-20 (GB2423 .28) 试验 Tb 进行试验。采用焊槽法, 将引出端沾助焊剂后, 浸入到温度为 $265 \pm 5^\circ\text{C}$ 、深度为 15mm 的锡槽中, 锡面距 NTC 本体下端 6mm 处, 维持 $10 \pm 1$ 秒。在 $25 \pm 2^\circ\text{C}$ 条件下恢复 4-5h 后, 复测额定零功率电阻 $RN'$ 。  |               |     |  |
| 1-3. Strength of lead terminal<br>引出端强度   | No break out<br>无损坏<br>$\Delta R/RN \leq 20\%$<br>( $\Delta R =  RN - RN' $ )                    | Fasten the body and apply a force gradually to each lead until 10N and then keep for 10sec, Hold body and apply a force to each lead until $90^\circ$ slowly at 5N in the direction of lead axis and then keep for 10sec, and do this in the opposite direction repeat for other terminal. After recovering 4-5h under $25 \pm 2^\circ\text{C}$ , the rated zero power resistance value $RN'$ shall be measured.<br>(See IEC68-2-21/GB2423.29 Ua / Ub)<br>根据 IEC68-2-21 (GB2423 .29) 试验 U 进行试验。<br>试验 Ua: 拉力 10N, 持续 10 S;<br>试验 Ub: 弯曲 $90^\circ$ , 拉力 5N, 持续 10 S;<br>扭转 $180^\circ$ , 拉力 5N, 持续 10 S。<br>在 $25 \pm 2^\circ\text{C}$ 条件下恢复 4~5 h 后, 复测额定零功率电阻 $RN'$ |               |     |  |

| PART NO.<br>料号  | MZ20005C0109  | 20D-5   | REV NO.<br>版本 | 0/A | 页次: 第 6 页, 共 7 页<br>Pages : No.6 of 7 pages |
|---|---|---|---------------|-----|---|
| 2.ELECTRICAL CHARACTERISTICS 电气性能                               |   |   |               |     |   |
| 2-1.Test Conditions & Method 测试条件/方法                            |   |   |               |     |   |
| Items<br>指标项目   | Spec.<br>技术要求   | Test Conditions & Methods<br>测试条件/方法  |               |     |   |
| 2-1-1.Rated Zero-Power Resistance<br>额定零功率电阻<br>$R_N (\Omega)$  | $20 \pm 20\%$   | Ambient temp. Range: $25^\circ\text{C} \pm 2^\circ\text{C} (T_A)$ .<br>Testing voltage: 1.5VDC<br>After placing for 1~2 hours under $T_A$ , the resistance value shall be measured.<br>环境温度 $T_A: 25^\circ\text{C} \pm 2^\circ\text{C}$<br>测试电压: 1.5VDC<br>在常温 $T_A$ 条件下, 放置 1~2 小时 后测得阻值 $R_N$ 。                               |               |     |   |
| 2-1-2.Thermal Dissipation Constant<br>热耗散系数 $\delta$<br>(mW/°C) | $\geq 6$  | The thermal dissipation constant( $\delta$ ) could be calculated by the ratio of a change in power dissipation( $\Delta P$ ) of the thermistor to a change in temperature( $\Delta T$ ) of the thermistor at a specified ambient temperature<br>在特定的环境温度下, 热耗散系数( $\delta$ )为热敏电阻电功率消耗( $\Delta P$ )与本体温度变化量 ( $\Delta T$ )的比值。 |               |     |   |
| 2-1-3.Thermal Time Constant<br>热时间常数<br>$\tau$ (s)              | $\leq 18$   | The time( $\tau$ ) shall be measured within which the temperature change of NTC thermistor is reached at 63.2% of the ambient temperature change under zero power condition<br>热时间常数( $\tau$ )为在零功率条件下, 热敏电阻的温度下降到其最初温度与最终温度之差为 63.2% 时所需要的时间   |               |     |   |
| 2-1-4.Material Constant<br>材料常数<br>$B$ (K)                      | $2800 \pm 5\%$<br>$B = T_1 T_2 / (T_2 - T_1) \times L_n(R_1 / R_2)$   | $R_1, R_2$ is zero-power resistance at $T_1, T_2$<br>$R_1, R_2$ 分别为 $T_1, T_2$ 温度下的零功率电阻<br>$T_1 = 298.15^\circ\text{K} (25^\circ\text{C})$ $T_2 = 323.15^\circ\text{K} (50^\circ\text{C})$   |               |     |   |
| 2-1-5.Max.Steady State Current<br>最大稳态电流(A)                     | 0.6A<br><br>No visible mechanical damage.<br><br>无可见损伤<br><br>$\Delta R_N / R_N \leq 20\%$<br><br>( $\Delta R =   R_N - R_N'  $ ) | Ambient temp. Range 环境温度: $25^\circ\text{C} \pm 2^\circ\text{C}$ .<br>Testing Current 测试电流: 0.6A  |               |     |   |

|                |              |       |               |     |   |
|----------------|--------------|-------|---------------|-----|---|
| PART NO.<br>料号 | MZ20005C0109 | 20D-5 | REV NO.<br>版本 | 0/A | 页次: 第 7 页, 共 7 页<br>Pages : No.7of7 pages |
|----------------|--------------|-------|---------------|-----|---|

### 3. Reliability Test 可靠性试验 (周期性检测项目)

| Items<br>指标项目                                | Spec.<br>技术要求   | Test Conditions & Methods<br>测试条件/方法   |
|--|---|--|
| *3-1. Temp. Cycling Testing<br>温度循环测试        | No visible mechanical damage.<br>无可见损伤<br>$\Delta R_N / R_N \leq 20\%$<br>$(\Delta R =   R_N - R_{N'}  )$ | Ta:-40±3℃/ 30min→25±2℃/ 5min→ Tb:150±3℃/ 30min→25±2℃/ 5min Cycles:5times<br>After recovering 4~5 h under 25±2℃, the rated zero power resistance value R <sub>N'</sub> shall be measured.<br>在 Ta=-40±3℃和 Tb=150±3℃的环境温度中各存放 30 分钟, 循环 5 次.每次高低温循环都有在 25±2℃的环境中过渡 5 分钟。<br>样品进行温度循环测试后, 取出放置室温 (25±2℃) 4~5 小时后测量零功率电阻 R <sub>N'</sub> . |
| *3-2. Electrical Cycling Testing<br>电循环测试    | No visible mechanical damage.<br>无可见损伤<br>$\Delta R_N / R_N \leq 20\%$<br>$(\Delta R =   R_N - R_{N'}  )$ | Ambient temp. Range:25℃±2℃.<br>Cycles:2,000times On / Off:5 s / 55 s<br>Test Current0.6A<br>After recovering 4~5h under 25±2℃, the rated zero power resistance value R <sub>N'</sub> shall be measured.<br>环境温度:25℃±2℃.<br>循环次数:2,000 次<br>通/断:5 s / 55 s<br>测试电流:0.6A<br>样品置于室温 (25±2℃) 4~5 小时后,测量其零功率电阻 R <sub>N'</sub> .            |
| *3-3.LoadLife ( Endurance ) Testing<br>持久性测试 | No visible mechanical damage.<br>无可见损伤<br>$\Delta R_N / R_N \leq 20\%$<br>$(\Delta R =   R_N - R_{N'}  )$ | Ambient temp. Range:25℃±2℃;0.6A/ 1,000±24h<br>After recovering 4~5 h under 25±2℃, the rated zero power resistance value R <sub>N'</sub> shall be measured.<br>环境温度:25℃±2℃.<br>样品通过最大工作电流 0.6A , 1,000±24 小时后, 取出置于室温 (25±2℃) 4~5 小时后,测量其零功率电阻 R <sub>N'</sub> .  |
| *4-3. Humidity Testing<br>耐湿性测试              | No visible mechanical damage.<br>无可见损伤<br>$\Delta R_N / R_N \leq 20\%$<br>$(\Delta R =   R_N - R_{N'}  )$ | Ambient temp. range :40℃±2℃<br>R.H.:93±3% , Energized time:1000±24 h<br>After recovering 4~5 h under 25±2℃, the rated zero power resistance value R <sub>N'</sub> shall be measured.<br>在温度 40±2℃,相对湿度 93±3%的环境中放置 1000±24 小时后, 取出置于室温 (25±2℃) 4~5 小时后, 测量其零功率电阻 R <sub>N'</sub> .   |