产品规格书

PRODUCTS SPECIFICATION

Customer name : _____

Product name : NTC Thermistor

Customer PN : _____

MFG PN : MF71-1D-25MY

MFG			Customer Confirmation		
Make	Check	Approval	Test	Check	Approval
YP Wang	HB Yuan	RL Zhou			

(Company name)

_____

Confirm got the spec and accept as our company's warehouse accept standard。

Version	Revise content	Forwarder	Date
A/1	Just made	Wang	2017-08-10

目　　录

1. 型号命名、外形尺寸 Part number code & Dimensions

（1）产品型号 **Type :** MF71 – 1D – 25 M Y
① ② ③ ④ ⑤

命名方法 Naming methods:

①—功率型负温度系数热敏电阻 器 Power type NTC Thermistor

②—25℃标称阻值 10Ω；Nominal resistance at 25℃:1Ω

③—芯片直径 25mm; Ceramic body size: 25mm

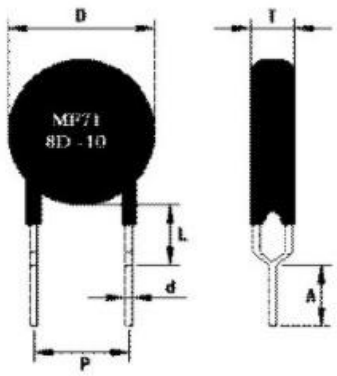
④—阻值精度：20% Tolerance of R25: 20%

代码 Code	F	G	H	J	K	L	M
精度 Tolerance	±1%	±2%	±3%	±5%	±10%	±15%	±20%

⑤—引线形状：前后弯 Lead shape:Y lead

代码 Code	I	S	O	Y	L
形状 Shape	内弯 Inside bend lead	直线 Straight lead	外弯 Outside bend lead	前后弯 Y shape lead	直角弯 L shape lead

（2）外形尺寸及材料 Dimensions & Materials:



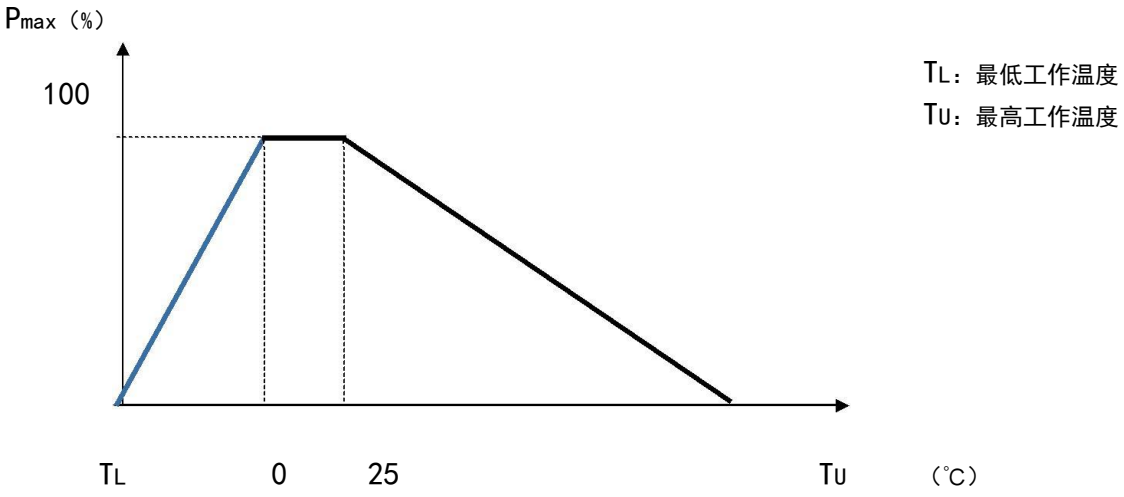
① 引线：镀锡线 Material of Leads: Tinned Copper Wires
② 包封材料：耐高温阻燃树脂 Fireproof material of Coating:High temperature resistant resin
③ 颜色：黑色 Color of Coating: Black

产品型号 MODEL	Dmax	P±1	d±0.05	Amin	Tmax
MF71-1D-25MY	30	7.5/10	1.0	7	8

2. 主要电性能 Electrical Characteristic

型号 Type	1D-25
25℃时零功率电阻值 Zero Power Resistance at 25℃	1±20% ohm
25℃时最大电流 maximum steady state current at 25℃	20A
脉冲容量 Capacitance at 240Vac	1200μF（240V）
热耗散系数 Thermal Dissipation Constant (δ)	≧30 mw/℃
热时间常数 Thermal Time constantτ（t）	≦130S
工作温度范围 Operation Temperature	-40～+200℃
额定功率 Rating power (Pmax)	7.0W

功耗衰减曲线 Power attenuation curve



3. 可靠性能 Reliability

3.1 特性参数 Performance Characteristics

项目 Item	试验要求及方法 Test Methods	性能要求 Specifications
25℃时零功率电阻值 Zero Power Resistance at 25℃	在室温为 25.0±0.2℃环境下对电阻器施加不使电阻器自身发热的直流电压进行测量 Resistance shall be measured at DC current applied when the self heat generation does not occur at room ambient (25.0±0.2℃)	1±20% ohm

热耗散系数 Thermal Dissipation Constant	在自然室温条件下，电阻器温度每提高 1℃时所消耗的功率 mw/℃ Equivalent to the required power to rise temperature of the thermistor up to 1℃ in the air and without cooling of airflow. the unit of the constant is mw/℃	≥30mw/℃
最大稳态电流 Maximum allowable steady-state current (Imax)	在自然室温条件下，电阻器允许施加的最大电流 Maximum allowable steady-state DC current applied at the specified temperature without cooling of airflow	20A
热时间常数 Thermal Time constant	从起始温度点下降 63.2%的温度值所需的时间(85℃ →47.1℃) The period of time when the temperature of the specimens is (1-1/e) times the temperature difference shall be measured when the ambient temperature is changed.(e:2.71828)	≤130S
耐电压（在引线与包封料之间）Voltage withstanding (Between Terminals and coating)	施加交流电压:AC1000V 时间:1 分钟 An AC Voltage of 1000V shall be applied. Between the terminals and the insulating coating for one minute at room ambient.	无击穿或飞弧 No substantial damage ΔR/R≤±20%
绝缘电阻（在引线与包封料之间）Insulation Resistance (Between Terminals and coating)	测量电压:1000Vdc 时间:1 分钟 Insulation resistance between terminals and the insulating coating shall be measured at 1000Vdc with one minute electrification, and at room ambient.	≥500MΩ

3.2. 机械性能 Mechanical Characteristics

项目 Item	试验要求及方法 Test Methods	性能要求 Specifications
引线拉力 Robustness of Terminations (Tensile)	在引出端施加规定的拉力维持 10±1 s 引线直径 Lead diameter: 1.0mm — 拉力: 30N The specimen shall be secured by the body and subjected to the specified force in radial direction for 10±1 seconds.	无可见性损伤 No substantial damage
引线弯曲 Robustness of Terminations (Bending)	将电阻体垂直放置，并在引线末端表中重量的法码，使电阻本体弯曲 90^0 再回到初始位置。再电阻本体向相反方向弯曲 90^0 再回到初始位置。 引线直径: 1.0mm — 弯曲力: 20N The specimen shall be secured by the body and subjected to the specified force in radial direction, move the body to a horizontal position by 90^0bending and return it to the initial position. Move it to the opposite horizontal position and return it to the initial vertical position .	无可见性损伤 No substantial damage Resistance change

振动 Vibration	频率范围：10-55-10Hz/min 振　幅：1.5mm 或加速度 98m/s² (取较不严酷者) 总持续时间：6h The specified harmonic vibration shall be applied to the specimen, to each of three perpendicular directions for 2hours(for totals of 6hours). Amplitude:0.75mm/sinMF71(1.5mm/double) Sweep frequency and its interval: 10HZ---55HZ---10HZ with duration of 1minute.	无可见性损伤 No substantial damage Resistance change ΔR/R≤±20%
可焊性 Solderability	无铅波峰焊曲线图如附件 4 Wave flowing sodering profile refers to attachment 4	焊料自由流动并与引线润湿，涂覆有效面积不小于 95%为可焊性良好 More than 95% of the terminal electrode should be covered with new solder.
耐焊接热 Resistance to Soldering Heat	260+2/-0℃，10±0.5S	ΔR/R≤±20%

3．3 环境及耐久性试验 Environmental and Endurance Tests

项目 Item	试验要求及方法 Test	性能要求 Specifications
高温贮存 High temperature storage	将电阻器放入 200±5℃环境下 1000 h。取出在室温下恢复 1 至 2 h 后进行测量 Specimen shall be subjected to the highest ambient for 1000 hours And after the specimen shall be left at room ambient for 1to 2 hours, the resistance value shall be measured.	ΔR/R≤±20%
稳态湿热 Damp Heat (Steady State)	将电阻器放入温度为 40±2℃，湿度为 90—95% R.H.环境下 1000h。取出在室温下恢复 1 至 2 h 后进行测量 Specimen shall be subjected to an ambient of 40±2℃,90 to 95% R.H. for 1000h. And after the specimen shall be left at room ambient for 1 to 2 hours, the resistance value shall be measured.	ΔR/R≤±20%
温度循环 Temperature Cycle	将电阻器按下列要求进行 5 次循环取出在室温下恢复 1 至 2 h 后进行测量 温度(℃) / 时间(分) -40±2 / 30±3 室温 / 5±2 200±2 / 30±3 室温 / 5±2 Temperature Cycle operation of the following table shall be repeated 5 times continuously. And after the specimen shall be left at room ambient for 1to 2 hours, the resistance value shall be measured.	无可见性损伤 No substantial damage Resistance change ΔR/R≤±20%

电冲击寿命试验 Impulse , Load Life	施加直流 V=240VRMS ,电容 C=1000μf, 60s on,300s off, 1000 次 Use RC circuit test V、C refer to table1 ,1min on,5min off, 1000 cycle.	无可见性损伤 No substantial damage Resistance change ΔR/R≤±20%
室温时最大电流耐久性 Load Life at room temoerature	对电阻器连续 1000h 施加最大稳态电流。取出在室温下恢复 1 至 2 h 后进行测量 Specimen shall be subjected with the rated current(Imax) applied for 1000 hours. And after the specimen shall be left at room ambient for 1 to 2 hours without load, the resistance shall be measured.	ΔR/R≤±20%

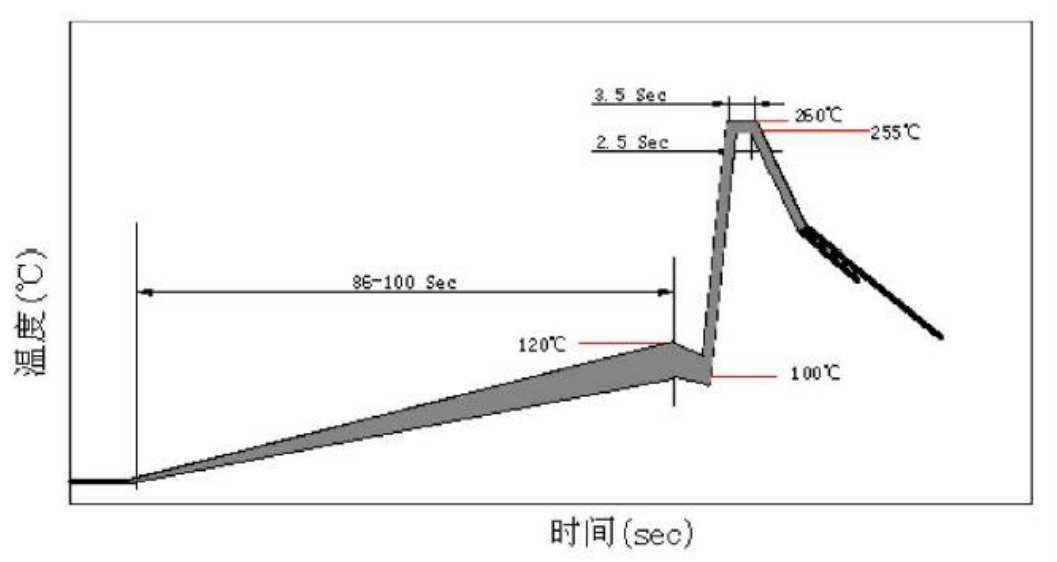
4. 物料清单 Bom List

材料 Materials	供应商 Materials origin	规格 Type	质量认证 Certifications
Mn3O4	湖南，江苏 Hunan, Jiangsu	电子级	ISO
Co3O4	江苏 Jiangsu	电子级	ISO
Ni2O3	江苏 Jiangsu	电子级	ISO
CuO	江苏 Jiangsu	电子级	ISO
银浆 Silver Paste	上海，江苏 Shanghai, Jiangsu	电子级	ISO
焊锡 Solder	安徽，江苏 Anhui, Jiangsu	Sn96.5-Ag3-Cu0.5	ISO
镀锡铜线 Tinned Copper Wires	天津， 江苏 Tianjin, Jiangsu	-----	ISO
包封料 Silicone Coating	陕西，台湾，江苏 Shanxi, Taiwan, Jiangsu	-----	ISO/UL

附件 1 包装要求 Attachment 3: Packing Specification

每盒数量（PCS） Quantity of each inter-box	每箱数量（PCS） Quantity of each outer-box
200	Appr. 2000

附件 2　无铅波峰焊曲线图　Attachment 2:Wave Flow Sodering Profile



二. 无铅波峰焊制程温度 Lead-free wave soldering process temp.：

1. 预热温度 100-120℃，时间 86-100 秒，升温速率为 1-2℃/秒。
   Preheat temp.:100-120 ℃, Time:86-100/Sec, Heating rate:1-2 ℃/Sec
2. 零件从预热后即进入 255-260℃的熔锡中，浸入时间为 2.5-3.5 秒。
   Parts after preheating, into the 255-260 ℃ molten tin, immersion time:2.5-3.5/Sec
3. 零件焊接后的降温速率为 1-3℃/秒。
   Parts after welding cooling rate of 1-3 ℃/Sec
4. 焊接总时间为 3.5 分钟
   Total welding time was 3.5Min.

为保证零件过波峰焊接时能够承受热冲击，零件之耐温规格必须高于波峰焊接之温度曲线最大温度，即 260℃以上。

In order to ensure the parts had to withstand thermal shock wave soldering, specification of heat-resistant parts must be higher than the temperature curve of wave soldering temperature, the largest is above 260 ℃

附件 3　贮存条件　Attachment 5: Storage Conditions

1. 贮存温度：-10℃~+40℃
   Storage Temperature : -10℃~+40℃
2. 贮存湿度：≦75%RH
   Relative Humidity : ≦75%RH
3. 不应有酸性、碱性、腐蚀性气体或辐射源存在，以防止电极氧化，影响可焊性
   Keep products away from corrosive such as sulfur, chlorine gas or acid, or it may cause oxidization of electrode, resulting in poor solderability
4. 贮存期限:上述条件下，可贮存 2 年。
   The products can be used in two years under storage co