

规格承认书

SPECIFICATION

编号(No):

日期(Date):

客户 (Customer):

品名(Product Name): 片式NTC热敏电阻 Chip NTC thermistor

恭成料号 (QAMCN Part Number) : QN0603X104J3950HB

客户规格(Customer's Part Number):

客户承认 CUSTOMER CONFIRM			
承认章	核准	审核	经办人
STAMP	APPROVE	CHECK	SIGNATURE

恭成科技有限公司

Quest for Advanced Materials Electronics Co., Ltd.

营销中心: 广东省深圳市龙华新区观澜银星科技大厦 518109

Marketing Center: Yinxing Technology Building, Guanlan, Longhua new district, Shenzhen 518109

电话 Tel: 0086-755-23732935 传真 Fax: 0086-755-23762516

制造中心: 河北省唐山市曹妃甸工业区中日生态园 063200

Manufactory: Sino-Japan Eco-industrial park, Caoheidian industrial district, Tangshan, Hebei, China 063200

电话 Tel: 0086-315-7332530

网址 Website: <https://www.qamcn.com>邮箱 E-Mail: qam@qamcn.com

1 外形尺寸 Shape and Dimensions

- 尺寸: 见图 1 和表 1
- PCB 焊盘: 见图 2 和表 1
- Dimensions: See Fig.1 and Table 1.
- Recommended PCB pattern for reflow soldering: See Fig.2 and Table 1

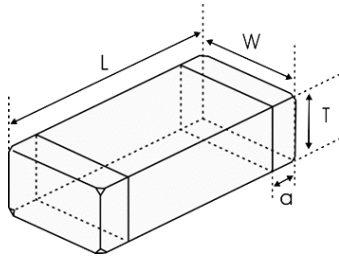


图 1 Fig.1

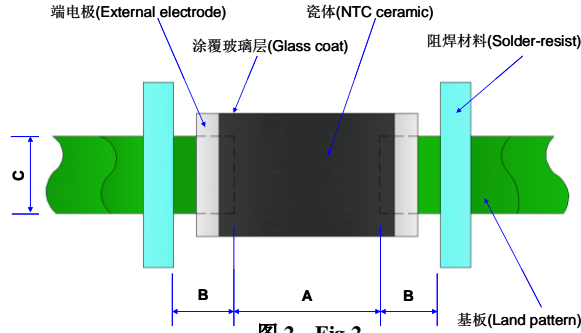


图 2 Fig.2

表 1 (Table 1)

单位 unit: inch[mm]

类别 Type	L	W	T	a	A	B	C
0603 [1608]	0.063±0.006 [1.6±0.15]	0.031±0.006 [0.8±0.15]	0.031±0.006 [0.8±0.15]	0.012±0.008 [0.3±0.2]	[0.6-0.8]	[0.6-0.7]	[0.6-0.8]

2 产品标识 (料号) Product Identification(Part Number)

QN **0**603 **X** **1**04 **J** **3**950 **H** **B**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① 类别 Type	
QN	片式 NTC 热敏电阻器 Chip NTC Thermistor
② 外形尺寸(mm) External Dimensions (L×W×T)	
0201[0603]	0.60×0.30×0.30
0402[1005]	1.00×0.50×0.50
0603[1608]	1.60×0.80×0.80
0805[2012]	2.00×1.25×0.85
1206[3216]	3.20×1.60×0.85
③ 分隔符 Delimiter	
	X

④ 25℃的零功率电阻 Nominal Zero-Power Resistance	
472	4.7kΩ
683	68kΩ
104	100kΩ

⑤ 电阻值公差 Tolerance of Resistance	
F	±1%
G	±2%
H	±3%
J	±5%

⑥ B 值常数 B Constant	
3600	3600K
3950	3950K
4500	4500K

⑦ B 值公差 Tolerance of B Constant	
F	±1%
H	±3%

⑧ B 值计算方式 B constant calculation method	
A	25℃ & 85℃
B	25℃ & 50℃

3 电气特性 Electrical Characteristics

型号 Part No	电阻值 Resistance (25℃) (kΩ)	B 常数 B Constant (25/50℃) (K)	B 常数 B Constant (25/85℃) (K)	允许工作电流 Permissible Operating Current (25℃) (mA)	耗散系数 Dissipation Factor (mW/℃)	热时间常数 Thermal Time Constant (s)	额定功率 Rated Electric Power(25℃) (mW)	工作温度 Operating ambient temperature (℃)
QN0603X104J3950HB	100±5%	3950±3%	3987	0.10	1.0	<5	100	-40~+125

4 检验和测试程序

测试条件

如无特别规定，检验和测试的标准大气环境条件如下：

- a. 环境温度：20±5℃；
- b. 相对湿度：65±20%；
- c. 气压：86 kPa~106 kPa

如果对测试结果有异议，则在下述条件下测试：

- a. 环境温度：25±2℃；
- b. 相对湿度：65±5%
- c. 气压：86kPa ~ 106kPa

检查设备

外观检查：20 倍放大镜；
阻值检查：热敏电阻测试仪

4 Test and Measurement Procedures

Test Conditions

Unless otherwise specified, the standard atmospheric conditions for measurement/test as:

- a. Ambient Temperature: 20±5℃
- b. Relative Humidity: 65±20%
- c. Air Pressure: 86kPa to 106kPa

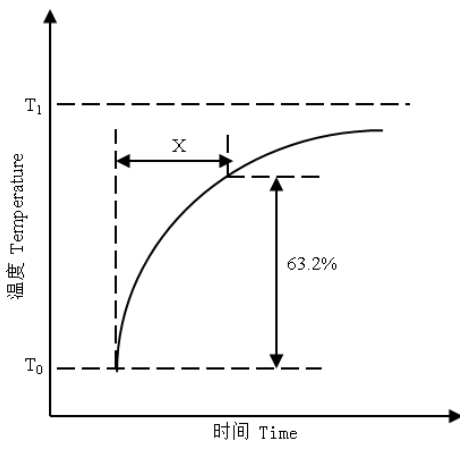
If any doubt on the results, measurements/tests should be made within the following limits:

- a. Ambient Temperature: 25±2℃
- b. Relative Humidity: 65±5%
- c. Air Pressure: 86kPa to 106kPa

Inspection Equipment

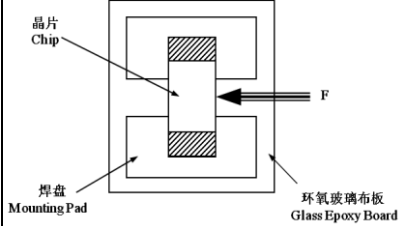
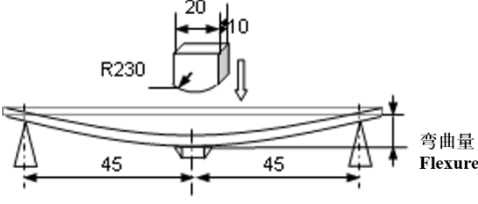
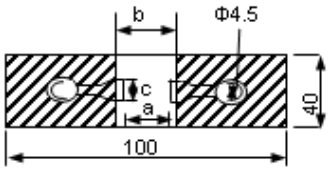
Visual Examination: 20× magnifier
Resistance value test: Thermistor resistance tester

5 电性测试 Electrical Test

序号 No.	项目 Items	测试方法及备注 Test Methods and Remarks
1	25℃零功率电阻值 Nominal Zero-Power Resistance at 25℃(R25)	环境温度 Ambient temperature: 25±0.05℃ 测试功率 Measuring electric power: ≤0.1mW
2	B 值常数 Nominal B Constant	分别在环境温度 25±0.05℃, 50±0.05℃或 85±0.05℃下测量电阻值。 Measure the resistance at the ambient temperature of 25±0.05℃, 50±0.05℃ or 85±0.05℃. $B(25-50^{\circ}\text{C}) = \frac{\ln R_{25} - \ln R_{50}}{1/T_{25} - 1/T_{50}} \quad B(25-85^{\circ}\text{C}) = \frac{\ln R_{25} - \ln R_{85}}{1/T_{25} - 1/T_{85}}$ T: 绝对温度 (K) Absolute temperature (K)
3	热时间常数 Thermal Time Constant	在零功率条件下，当热敏电阻的环境温度发生急剧变化时，热敏电阻元件产生最初温度 T ₀ 与最终温度 T ₁ 两者温度差的 63.2% 的温度变化所需要的时间，通常以秒(S)表示。 The total time for the temperature of the thermistor to change by 63.2% of the difference from ambient temperature T ₀ (°C) to T ₁ (°C) by the drastic change of the power applied to thermistor from Non-zero Power to Zero-Power state, normally expressed in second(S). 

4	耗散系数 Dissipation Factor	在一定环境温度下，NTC 热敏电阻通过自身发热使其温度升高 1℃时所需要的功率，通常以 mW/℃表示。可由下面公式计算： The required power which makes the NTC thermistor body temperature raise 1℃ through self-heated, normally expressed in milliwatts per degree Celsius (mW/℃). It can be calculated by the following formula: $\delta = \frac{W}{T-T_0}$
5	额定功率 Rated Power	在环境温度 25℃下因自身发热使表面温度升高 100℃所需要的功率。 The necessary electric power makes thermistor's temperature rise 100℃ by self-heating at ambient temperature 25℃.
6	允许工作电流 Permissible operating current	在静止空气中通过自身发热使其升温为 1℃的电流。 The current that keep body temperature of chip NTC on the PC board in still air rising 1℃ by self-heating.

6 信赖性试验 Reliability Test

项目 Items	测试标准 Standard	测试方法及备注 Test Methods and Remarks	要求 Requirements																														
端头附着力 Terminal Strength	IEC 60068-2-21	<p>将晶片焊接在测试基板上（如右图所示的环氧玻璃布板），按箭头所示方向施加作用力； Solder the chip to the testing jig (glass epoxy board shown in the right) using eutectic solder. Then apply a force in the direction of the arrow.</p> <table border="1" data-bbox="497 1075 1034 1209"> <thead> <tr> <th>尺寸 Size</th> <th>F</th> <th>保持时间 Duration</th> </tr> </thead> <tbody> <tr> <td>0201, 0402, 0603</td> <td>5N</td> <td rowspan="2">10±1s</td> </tr> <tr> <td>0805</td> <td>10N</td> </tr> </tbody> </table>	尺寸 Size	F	保持时间 Duration	0201, 0402, 0603	5N	10±1s	0805	10N	<p>端电极无脱落且瓷体无损伤。 No removal or split of the termination or other defects shall occur.</p> 																						
尺寸 Size	F	保持时间 Duration																															
0201, 0402, 0603	5N	10±1s																															
0805	10N																																
抗弯强度 Resistance to Flexure	IEC 60068-2-21	<p>将晶片焊接在测试基板上（如右图所示的环氧玻璃布板），按下图箭头所示方向施加作用力； Solder the chip to the test jig (glass epoxy board shown in the right) using a eutectic solder. Then apply a force in the direction shown as follow;</p>  <table border="1" data-bbox="446 1758 1085 1982"> <thead> <tr> <th>尺寸 Size</th> <th>弯曲变形量 Flexure</th> <th>施压速度 Pressurizing Speed</th> <th>保持时间 Duration</th> </tr> </thead> <tbody> <tr> <td>0201,</td> <td>1mm</td> <td rowspan="2"><0.5mm/s</td> <td rowspan="2">10±1s</td> </tr> <tr> <td>0402, 0603, 0805</td> <td>2mm</td> </tr> </tbody> </table>	尺寸 Size	弯曲变形量 Flexure	施压速度 Pressurizing Speed	保持时间 Duration	0201,	1mm	<0.5mm/s	10±1s	0402, 0603, 0805	2mm	<p>① 无外观损伤。 No visible damage. ② $\Delta R_{25}/R_{25} \leq 5\%$</p> <p>单位 unit: mm</p> <table border="1" data-bbox="1157 1512 1516 1724"> <thead> <tr> <th>类型 Type</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>0201</td> <td>0.25</td> <td>0.3</td> <td>0.3</td> </tr> <tr> <td>0402</td> <td>0.4</td> <td>1.5</td> <td>0.5</td> </tr> <tr> <td>0603</td> <td>1.0</td> <td>3.0</td> <td>1.2</td> </tr> <tr> <td>0805</td> <td>1.2</td> <td>4.0</td> <td>1.65</td> </tr> </tbody> </table> 	类型 Type	a	b	c	0201	0.25	0.3	0.3	0402	0.4	1.5	0.5	0603	1.0	3.0	1.2	0805	1.2	4.0	1.65
尺寸 Size	弯曲变形量 Flexure	施压速度 Pressurizing Speed	保持时间 Duration																														
0201,	1mm	<0.5mm/s	10±1s																														
0402, 0603, 0805	2mm																																
类型 Type	a	b	c																														
0201	0.25	0.3	0.3																														
0402	0.4	1.5	0.5																														
0603	1.0	3.0	1.2																														
0805	1.2	4.0	1.65																														

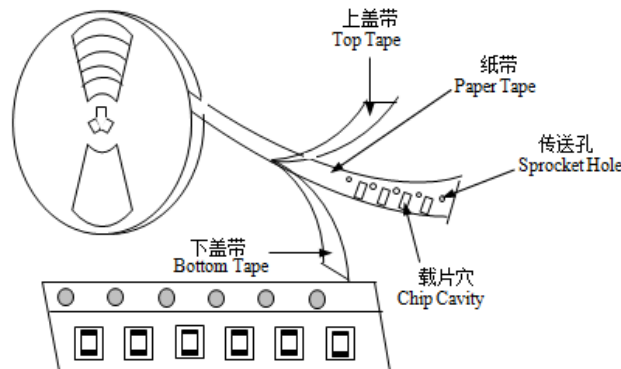
<p>振动 Vibration</p>	<p>IEC 60068-2-80</p>	<p>① 将晶片焊接在测试基板上（如右图所示的环氧玻璃布板）； Solder the chip to the testing jig (glass epoxy board shown in the left) using eutectic solder.</p> <p>② 晶片以全振幅为 1.5mm 进行振动，频率范围为 10Hz ~ 55 Hz； The chip shall be subjected to a simple harmonic motion having total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55 Hz.</p> <p>③ 振动频率按 10Hz→55Hz→10Hz 循环，周期为 1 分钟，在空间三个互相垂直的方向上各振动 2 小时（共 6 小时）。 The frequency ranges from 10 to 55 Hz and return to 10 Hz shall be traversed in approximately 1 minute. This motion shall be applied for a period of 2 hours in each 3 mutually perpendicular directions (total of 6 hours).</p>	<p>无外观损伤。 No visible damage.</p>  <p>铜箔 Cu pad 阻焊膜 Solder mask 环氧玻璃布板 Glass Epoxy Board</p>															
<p>坠落 Dropping</p>	<p>IEC 60068-2-32</p>	<p>从 1m 的高度让晶片自由坠落至水泥地面 10 次。 Drop a chip 10 times on a concrete floor from a height of 1 meter.</p>	<p>无外观损伤。 No visible damage.</p>															
<p>可焊性 Solderability</p>	<p>IEC 60068-2-58</p>	<p>① 焊接温度 Solder temperature: 245±5℃. ② 浸渍时间 Duration: 3±0.3s. ③ 焊锡成分 Solder: Sn/3.0Ag/0.5Cu. ④ 助焊剂 Flux: （重量比）25% 松香和 75% 酒精 25% Resin and 75% ethanol in weight.</p>	<p>① 无外观损伤； No visible damage. ② 元件端电极的焊锡覆盖率不小于 95%。 Wetting shall exceed 95% coverage.</p>															
<p>耐焊性 Resistance to Soldering Heat</p>	<p>IEC 60068-2-58</p>	<p>① 焊接温度 Solder temperature: 260±5℃. ② 浸渍时间 Duration: 10±1s. ③ 焊锡成分 Solder: Sn/3.0Ag/0.5Cu. ④ 助焊剂 Flux: （重量比）25% 松香和 75% 酒精 25% Resin and 75% ethanol in weight. ⑤ 试验后标准条件下放置 1~2 小时后测量。 The chip shall be stabilized at normal condition for 1~2 hours before measuring.</p>	<p>① 无外观损伤； No visible damage. ② $\Delta R_{25}/R_{25} \leq 5\%$ ③ $\Delta B/B \leq 2\%$</p>															
<p>温度周期 Temperature cycling</p>	<p>IEC 60068-2-14</p>	<p>① 无负载于下表所示的环境条件下重复 5 次。 5 cycles of following sequence without loading.</p> <table border="1" data-bbox="491 1429 1040 1624"> <thead> <tr> <th>步骤 Step</th> <th>温度 Temperature</th> <th>时间 Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±5℃</td> <td>30±3min</td> </tr> <tr> <td>2</td> <td>25±2℃</td> <td>5±3min</td> </tr> <tr> <td>3</td> <td>125±2℃</td> <td>30±3min</td> </tr> <tr> <td>4</td> <td>25±2℃</td> <td>5±3min</td> </tr> </tbody> </table> <p>② 试验后标准条件下放置 1~2 小时后测量。 The chip shall be stabilized at normal condition for 1~2 hours before measuring.</p>	步骤 Step	温度 Temperature	时间 Time	1	-40±5℃	30±3min	2	25±2℃	5±3min	3	125±2℃	30±3min	4	25±2℃	5±3min	<p>① 无外观损伤； No visible damage. ② $\Delta R_{25}/R_{25} \leq 3\%$ ③ $\Delta B/B \leq 2\%$</p>
步骤 Step	温度 Temperature	时间 Time																
1	-40±5℃	30±3min																
2	25±2℃	5±3min																
3	125±2℃	30±3min																
4	25±2℃	5±3min																
<p>高温存放 Resistance to dry heat</p>	<p>IEC 60068-2-2</p>	<p>① 在 125±5℃ 空气中，无负载放置 1000±24 小时。 125±5℃ in air, for 1000±24 hours without loading. ② 试验后标准条件下放置 1~2 小时后测量。 The chip shall be stabilized at normal condition for 1~2 hours before measuring.</p>	<p>① 无外观损伤； No visible damage. ② $\Delta R_{25}/R_{25} \leq 5\%$ ③ $\Delta B/B \leq 2\%$</p>															

低温存放 Resistance to cold	IEC 60068-2-1	① 在 $-40\pm 3^{\circ}\text{C}$ 空气中, 无负载放置 1000 ± 24 小时。 $-40\pm 3^{\circ}\text{C}$ in air, for 1000 ± 24 hours without loading. ② 试验后标准条件下放置 1~2 小时后测量。 The chip shall be stabilized at normal condition for 1~2 hours before measuring.	① 无外观损伤; No visible damage. ② $ \Delta R25/R25 \leq 5\%$ ③ $ \Delta B/B \leq 2\%$
湿热存放 Resistance to damp heat	IEC 60068-2-78	① 在 $40\pm 2^{\circ}\text{C}$, 相对湿度 90~95% 空气中, 无负载放置 1000 ± 24 小时。 $40\pm 2^{\circ}\text{C}$, 90~95%RH in air, for 1000 ± 24 hours without loading. ② 试验后标准条件下放置 1~2 小时后测量。 The chip shall be stabilized at normal condition for 1~2 hours before measuring.	① 无外观损伤; No visible damage. ② $ \Delta R25/R25 \leq 3\%$ ③ $ \Delta B/B \leq 2\%$
高温负荷 Resistance to high temperature load	IEC 60539-1 5.25.4	① 在 $85\pm 2^{\circ}\text{C}$ 空气中, 施加允许工作电流 1000 ± 48 小时。 $85\pm 2^{\circ}\text{C}$ in air with permissive operating current for 1000 ± 48 hours ② 试验后标准条件下放置 1~2 小时后测量。 The chip shall be stabilized at normal condition for 1~2 hours before measuring.	① 无外观损伤; No visible damage. ② $ \Delta R25/R25 \leq 5\%$ ③ $ \Delta B/B \leq 2\%$

7 编带 Taping

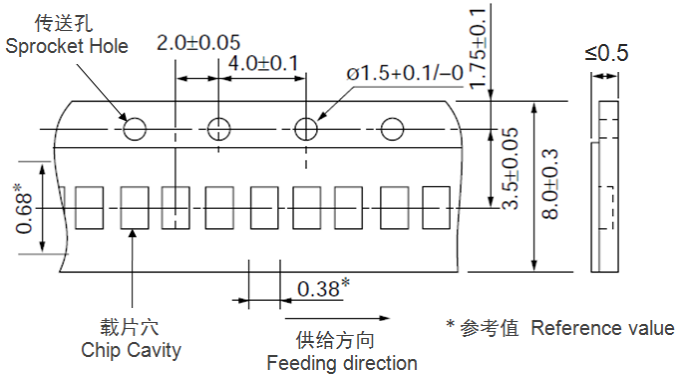
类型 Type	0201	0402	0603	0805
编带厚度 Tape thickness(mm)	0.5 ± 0.15	0.5 ± 0.15	0.8 ± 0.15	0.85 ± 0.2
编带材质 Tape material	纸带 Paper Tape			
每盘数量 Quantity per Reel	15K	10K	4K	4K

(1) 编带图 Taping Drawings

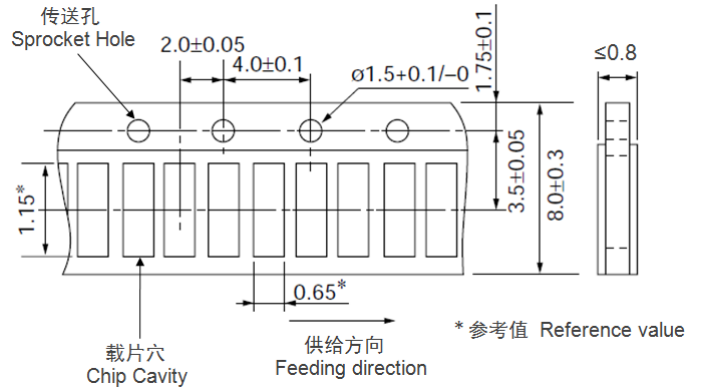


(2) 纸带尺寸 Paper Tape Dimensions (单位 Unit: mm)

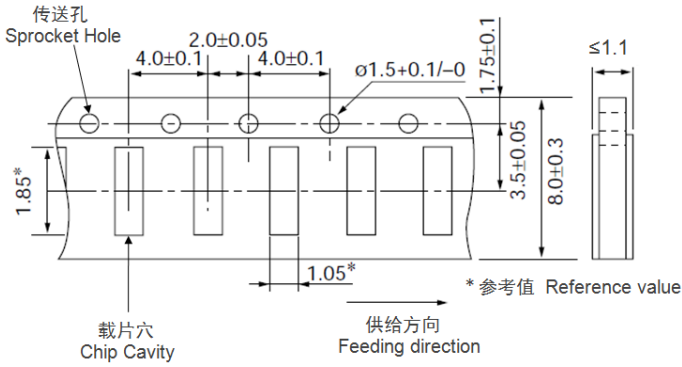
QN0201 系列 QN0201 series



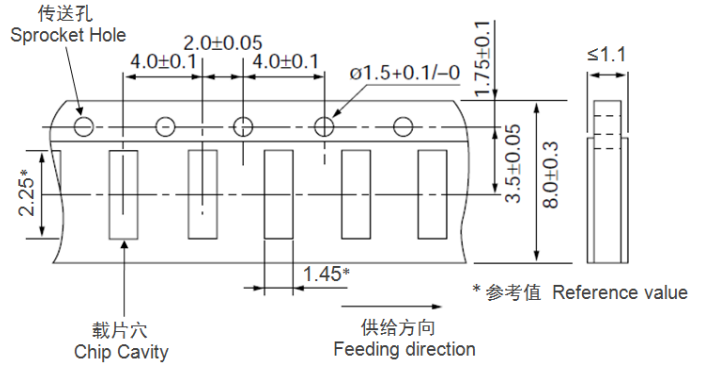
QN0402 系列 QN0402 series



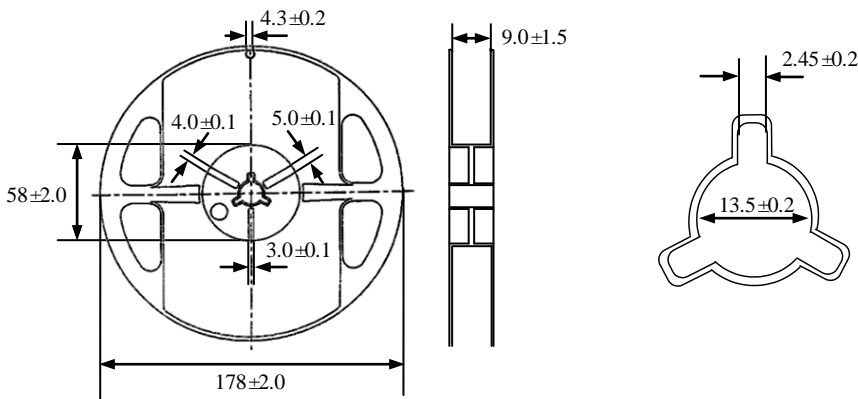
QN0603 系列 QN0603 series



QN0805 系列 QN0805 series



(3) 卷盘尺寸 Reel Dimensions (单位 Unit: mm)



8 储存

- 储存条件
 - a. 储存温度: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$
 - b. 相对湿度: $\leq 75\%RH$
 - c. 避免接触粉尘、腐蚀性气氛和阳光
- 储存期限: 产品交付后 6 个月

9 注意事项

- QN 系列热敏电阻不可在以下条件下工作或储存:
 - (1) 腐蚀性气体或还原性气体
(氯气、硫化氢气体、氨气、硫酸气体、一氧化氮等)。
 - (2) 挥发性或易燃性气体
 - (3) 多尘条件
 - (4) 高压或低压条件
 - (5) 潮湿场所
 - (6) 存在盐水、油、化学液体或有机溶剂的场所
 - (7) 强烈振动
 - (8) 存在类似有害条件的其他场所
- QN 系列热敏电阻的陶瓷属于易碎材料, 使用时不可施加过大压力或冲击。
- QN 系列热敏电阻不可在超过目录规定的温度范围情况下工作。

8 Storage

- **Storage Conditions**
 - a. Storage Temperature: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$
 - b. Relative Humidity: $\cong 75\%RH$
 - c. Keep away from corrosive atmosphere and sunlight.
- **Period of Storage: 6 Months after delivery**

9 Notes & Warnings

- The QN series thermistors shall not be operated and stored under the following environmental condition:
 - (1) Corrosive or deoxidized atmospheres
(such as chlorine, sulfurated hydrogen, ammonia, sulfuric acid, nitric oxide and so on)
 - (2) Volatile or inflammable atmospheres
 - (3) Dusty condition
 - (4) Excessively high or low pressure condition
 - (5) Humid site
 - (6) Places with brine, oil, chemical liquid or organic solvent
 - (7) Intense vibration
 - (8) Places with analogously deleterious conditions
- The ceramic body of the QN series thermistors is fragile, no excessive pressure or impact shall be exerted on it.
- The QN series thermistors shall not be operated beyond the specified "Operating Temperature Range" in the catalog.

10 建议焊接条件

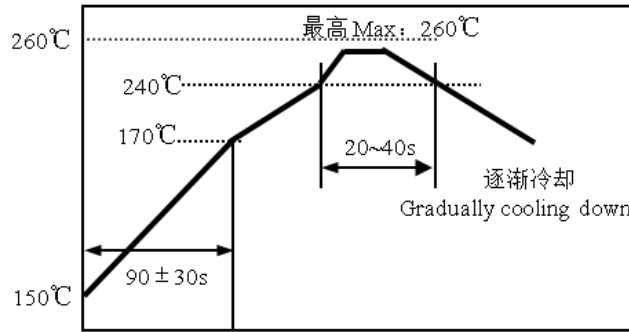
• 回流焊

- 温升 1~2°C/sec.
- 预热: 150~170°C/90±30 sec.
- 大于 240°C 时间: 20~40sec
- 峰值温度: 最高 260°C/10 sec.
- 焊锡: Sn/3.0Ag/0.5Cu
- 回流焊: 最多 2 次

10 Recommended Soldering Technologies

• Re-flowing Profile

- 1~2°C/sec. Ramp
- Pre-heating: 150~170°C/90±30 sec.
- Time above 240°C: 20~40 sec.
- Peak temperature: 260°C Max./10 sec.
- Solder paste: Sn/3.0Ag/0.5Cu
- Max.2 times for re-flowing



• 手工焊

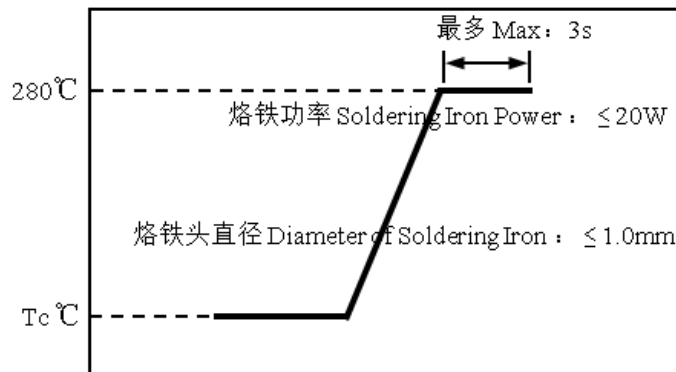
- 烙铁功率: 最大 20W
- 预热: 150°C/60sec.
- 烙铁头温度: 最高 280°C
- 焊接时间: 最多 3sec.
- 焊锡: Sn/3.0Ag/0.5Cu
- 手工焊: 最多 1 次

• Iron Soldering Profile

- Iron soldering power: Max.20W
- Pre-heating: 150°C/60sec.
- Soldering Tip temperature: 280°C Max.
- Soldering time: 3 sec Max.
- Solder paste: Sn/3.0Ag/0.5Cu
- Max.1 times for iron soldering

[注: 不要使烙铁头接触到端头]

[Note: Take care not to apply the tip of the soldering iron to the terminal electrodes.]



11 R-T 表 R-T table

QN0603X104J3950HB

温度 Temp. (°C)	R 最小值 R_Min (Kohm)	R 中心值 R_Cent (Kohm)	R 最大值 R_Max (Kohm)	阻值公差 Res TOL.	温度公差 Temp. TOL.(°C)
-40	2,949.467	3,452.748	4,031.802	16.77%	2.41
-39	2,762.977	3,227.909	3,761.648	16.54%	2.39
-38	2,589.556	3,019.247	3,511.437	16.30%	2.38
-37	2,428.204	2,825.494	3,279.567	16.07%	2.36
-36	2,278.001	2,645.486	3,064.573	15.84%	2.35
-35	2,138.106	2,478.161	2,865.120	15.61%	2.33
-34	2,007.744	2,322.542	2,679.982	15.39%	2.32
-33	1,886.204	2,177.736	2,508.042	15.17%	2.30
-32	1,772.833	2,042.922	2,348.273	14.95%	2.28
-31	1,667.029	1,917.347	2,199.738	14.73%	2.27
-30	1,568.240	1,800.319	2,061.576	14.51%	2.25
-29	1,475.956	1,691.203	1,932.995	14.30%	2.24
-28	1,389.708	1,589.414	1,813.274	14.08%	2.22
-27	1,309.062	1,494.413	1,701.744	13.87%	2.20
-26	1,233.621	1,405.707	1,597.795	13.66%	2.19
-25	1,163.015	1,322.839	1,500.865	13.46%	2.17
-24	1,096.763	1,245.222	1,410.241	13.25%	2.15
-23	1,034.716	1,172.662	1,325.676	13.05%	2.13
-22	976.581	1,104.798	1,246.725	12.85%	2.12
-21	922.086	1,041.298	1,172.983	12.65%	2.10
-20	870.982	981.854	1,104.073	12.45%	2.08
-19	823.037	926.182	1,039.649	12.25%	2.06
-18	778.035	874.020	979.391	12.06%	2.05
-17	735.780	825.125	923.007	11.86%	2.03
-16	696.086	779.274	870.222	11.67%	2.01
-15	658.783	736.257	820.785	11.48%	1.99
-14	623.712	695.883	774.465	11.29%	1.97
-13	590.726	657.974	731.045	11.11%	1.95
-12	559.690	622.365	690.329	10.92%	1.94
-11	530.476	588.902	652.129	10.74%	1.92
-10	502.966	557.444	616.278	10.55%	1.90
-9	477.052	527.858	582.616	10.37%	1.88
-8	452.630	500.023	550.996	10.19%	1.86
-7	429.607	473.824	521.284	10.02%	1.84
-6	407.895	449.155	493.353	9.84%	1.82
-5	387.411	425.920	467.086	9.67%	1.80
-4	368.052	403.995	442.341	9.49%	1.78
-3	349.777	383.332	419.056	9.32%	1.76
-2	332.521	363.850	397.137	9.15%	1.74
-1	316.219	345.475	376.495	8.98%	1.72
0	300.815	328.139	357.049	8.81%	1.70
1	286.269	311.793	338.744	8.64%	1.68

2	272.511	296.357	321.484	8.48%	1.66
3	259.495	281.775	305.204	8.31%	1.64
4	247.177	267.995	289.841	8.15%	1.61
5	235.513	254.969	275.341	7.99%	1.59
6	224.448	242.628	261.624	7.83%	1.57
7	213.967	230.956	248.671	7.67%	1.55
8	204.038	219.915	236.436	7.51%	1.53
9	194.628	209.467	224.873	7.36%	1.51
10	185.707	199.576	213.944	7.20%	1.48
11	177.252	190.215	203.616	7.05%	1.46
12	169.231	181.348	193.846	6.89%	1.44
13	161.618	172.943	184.599	6.74%	1.42
14	154.391	164.976	175.846	6.59%	1.39
15	147.527	157.420	167.557	6.44%	1.37
16	141.005	150.250	159.702	6.29%	1.35
17	134.808	143.448	152.259	6.14%	1.33
18	128.918	136.991	145.205	6.00%	1.30
19	123.320	130.862	138.518	5.85%	1.28
20	117.995	125.041	132.176	5.71%	1.26
21	112.930	119.511	126.160	5.56%	1.23
22	108.111	114.257	120.451	5.42%	1.21
23	103.525	109.264	115.032	5.28%	1.18
24	99.158	104.515	109.887	5.14%	1.16
25	95.000	100.000	105.000	5.00%	1.14
26	90.799	95.704	100.622	5.14%	1.17
27	86.808	91.617	96.451	5.28%	1.21
28	83.013	87.726	92.475	5.41%	1.25
29	79.404	84.021	88.684	5.55%	1.29
30	75.972	80.493	85.070	5.69%	1.33
31	72.708	77.133	81.623	5.82%	1.37
32	69.602	73.932	78.335	5.96%	1.41
33	66.646	70.881	75.198	6.09%	1.45
34	63.831	67.973	72.203	6.22%	1.49
35	61.149	65.199	69.343	6.36%	1.54
36	58.595	62.554	66.612	6.49%	1.58
37	56.162	60.030	64.004	6.62%	1.62
38	53.842	57.621	61.511	6.75%	1.66
39	51.631	55.322	59.129	6.88%	1.70
40	49.522	53.127	56.852	7.01%	1.75
41	47.510	51.030	54.674	7.14%	1.79
42	45.591	49.028	52.592	7.27%	1.83
43	43.760	47.115	50.600	7.40%	1.88
44	42.011	45.285	48.693	7.53%	1.92
45	40.341	43.537	46.869	7.65%	1.96
46	38.748	41.867	45.124	7.78%	2.01
47	37.227	40.270	43.454	7.90%	2.05

48	35.773	38.743	41.854	8.03%	2.10
49	34.384	37.281	40.321	8.15%	2.14
50	33.056	35.882	38.852	8.28%	2.19
51	31.786	34.543	37.445	8.40%	2.23
52	30.571	33.260	36.096	8.53%	2.28
53	29.409	32.032	34.802	8.65%	2.33
54	28.297	30.856	33.562	8.77%	2.37
55	27.233	29.729	32.372	8.89%	2.42
56	26.214	28.649	31.231	9.01%	2.47
57	25.239	27.613	30.135	9.13%	2.51
58	24.305	26.620	29.084	9.25%	2.56
59	23.410	25.669	28.074	9.37%	2.61
60	22.553	24.755	27.105	9.49%	2.66
61	21.733	23.881	26.176	9.61%	2.71
62	20.947	23.042	25.283	9.73%	2.76
63	20.193	22.237	24.426	9.84%	2.81
64	19.471	21.464	23.602	9.96%	2.85
65	18.777	20.721	22.809	10.08%	2.90
66	18.111	20.007	22.046	10.19%	2.95
67	17.472	19.321	21.313	10.31%	3.00
68	16.858	18.661	20.607	10.42%	3.05
69	16.268	18.028	19.927	10.54%	3.11
70	15.702	17.419	19.274	10.65%	3.16
71	15.162	16.836	18.649	10.76%	3.21
72	14.643	16.276	18.047	10.88%	3.26
73	14.144	15.738	17.467	10.99%	3.31
74	13.665	15.220	16.909	11.10%	3.36
75	13.204	14.721	16.372	11.21%	3.42
76	12.760	14.240	15.853	11.32%	3.47
77	12.333	13.777	15.352	11.43%	3.52
78	11.922	13.332	14.871	11.54%	3.58
79	11.527	12.903	14.406	11.65%	3.63
80	11.147	12.490	13.959	11.76%	3.68
81	10.783	12.093	13.529	11.87%	3.74
82	10.432	11.711	13.114	11.98%	3.79
83	10.094	11.343	12.714	12.09%	3.85
84	9.770	10.988	12.328	12.19%	3.90
85	9.456	10.646	11.955	12.30%	3.96
86	9.155	10.316	11.596	12.40%	4.01
87	8.865	9.999	11.249	12.51%	4.07
88	8.585	9.692	10.914	12.62%	4.12
89	8.315	9.396	10.592	12.72%	4.18
90	8.055	9.111	10.279	12.82%	4.24
91	7.805	8.836	9.978	12.93%	4.30
92	7.563	8.570	9.687	13.03%	4.35
93	7.330	8.314	9.406	13.13%	4.41

94	7.106	8.066	9.134	13.24%	4.47
95	6.889	7.828	8.872	13.34%	4.53
96	6.681	7.598	8.619	13.44%	4.58
97	6.480	7.376	8.375	13.54%	4.64
98	6.286	7.162	8.139	13.64%	4.70
99	6.099	6.955	7.910	13.74%	4.76
100	5.918	6.755	7.689	13.84%	4.82
101	5.744	6.561	7.476	13.94%	4.88
102	5.575	6.374	7.269	14.04%	4.94
103	5.413	6.194	7.069	14.14%	5.00
104	5.255	6.019	6.875	14.24%	5.06
105	5.104	5.850	6.689	14.33%	5.12
106	4.957	5.686	6.507	14.43%	5.18
107	4.815	5.528	6.331	14.53%	5.25
108	4.678	5.375	6.162	14.62%	5.31
109	4.545	5.227	5.997	14.72%	5.37
110	4.417	5.084	5.837	14.82%	5.43
111	4.293	4.945	5.682	14.91%	5.50
112	4.173	4.811	5.533	15.01%	5.56
113	4.057	4.681	5.388	15.10%	5.62
114	3.944	4.555	5.247	15.20%	5.69
115	3.836	4.433	5.111	15.29%	5.75
116	3.731	4.316	4.980	15.38%	5.81
117	3.630	4.202	4.852	15.47%	5.88
118	3.532	4.092	4.729	15.57%	5.94
119	3.437	3.985	4.609	15.66%	6.01
120	3.345	3.881	4.493	15.75%	6.07
121	3.256	3.781	4.380	15.84%	6.14
122	3.169	3.684	4.270	15.93%	6.20
123	3.086	3.589	4.164	16.02%	6.27
124	3.005	3.498	4.061	16.11%	6.34
125	2.926	3.409	3.961	16.20%	6.40

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [NTC Thermistors](#) category:

Click to view products by [QAMcn](#) manufacturer:

Other Similar products are found below :

[GA10K4D25](#) [GAG22K7MCD419](#) [118-253FAJ-P01](#) [121-202EAC-P01](#) [123-802EAJ-P01](#) [128-105NDP-Q02](#) [129-202VME-S01](#) [135-103LZF-J02](#) [135-503LAD-J01](#) [B57620C472K962](#) [B57620C5103K062](#) [B59970C0080A070](#) [199-303KAF-A02](#) [GA100K6MBD1](#) [B57423V2473H062](#) [B57471V2474H062](#) [B57620C5102J062](#) [B57620C5223J062](#) [111-802EAJ-901](#) [112-103FAG-H02](#) [111-182CAG-H01](#) [112-103FAF-H01](#) [112-202EAJ-B02](#) [118-202CAJ-P01](#) [NTC0805J100K](#) [B57442V5103J62](#) [B59100M1140A070](#) [B57401V2103H62](#) [NTC0805J3K3](#) [PTCTL8NR100HBE](#) [194303KEVA01](#) [NTCACAPE3C90193](#) [GAG10K3976B1](#) [B57250V2104F360](#) [GAG10K3976A1](#) [NXRT15WB473FA1B040](#) [50070974-003-01](#) [B57250V2473F560](#) [189-602LDR-A01](#) [B57621C5472K062](#) [135-105QAF-J02](#) [NTCASCWE3222J](#) [B57421V2153J062](#) [B57230V2103H260](#) [B57471V2684H062](#) [B57471V2333H062](#) [126-153YJC-B01](#) [NTCS0603E3333FHT](#) [GA10K4D67](#) [118-802EAJ-P01](#)