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**SPECIFICATION FOR APPROVAL**

CUSTOMER	TRG(TESE003)
CERTIFIED	
MODEL/TYPE	SCK-104
PART NO.	SCK13104MFY (RoHS+HF)
APPLICATION	
CUSTOMER P/N	
ISSUE DATE	Jul.26,2013
REV. NO.	
REV. DATE	

FOR CUSTOMER APPROVAL	CHECKED BY
	<i>Xiaona Qian</i>
	APPROVED BY
	<i>Huaifang Zhang</i>





REVISED RECORD SHEET

REV. NO	REV. DATE	REVISED CONTENT



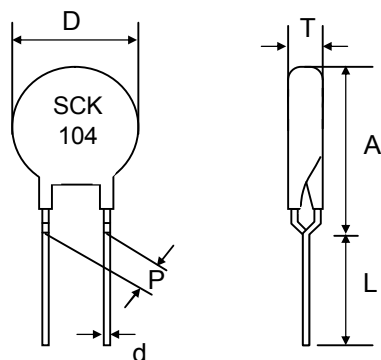
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Part Number Code

Example :

SCK **13** **10** **4** **M** **F** **Y**
 (1) (2) (3) (4) (5) (6) (7)

No.	Item	Digit	Specification
(1)	Product Type	SCK	Thinking NTC thermistor SCK type
(2)	Body Size	13	φ 13 mm
(3)	Zero Power Resistance at 25°C (R ₂₅)	10	10Ω
(4)	Max. Current at 25°C	4	I _{max} =4A
(5)	Tolerance of R ₂₅	M	±20%
(6)	Appearance	F	Y kink lead
(7)	Optional Suffix	Y	RoHS+HF compliance

Structure and Dimensions

(unit : mm)

Body Size	D max.	P	d	A max.	L min	T max.
φ 13mm	14.5	7.5±1	0.8±0.02	17.5	27	6

Electrical Characteristics

Part No.	Zero Power Resistance at 25°C	Tolerance of R_{25}	Max. Current at 25°C	Residual Resistance at 25°C I_{max}	Max. Power Rating at 25°C
	$R_{25}(\Omega)$	(± %)	$I_{max}(A)$	$R_{I_{max}}(\Omega)$	$P_{max}(W)$
SCK13104MFY	10	20	4	0.217	3.1

Part No.	Dissipation Factor	Thermal Time Constant	Capacitance at 240Vac	Operating Temperature Range
	δ (mW/°C)	τ (sec.)	(μF)	$T_L \sim T_U$ (°C)
SCK13104MFY	Approx. 18	Approx. 66	470	-40 ~ +200

Note: Due to the mechanical force, which is acted on the wire lead, the coating may have cracks and chips. However, it does not affect the performance and reliability of the component.

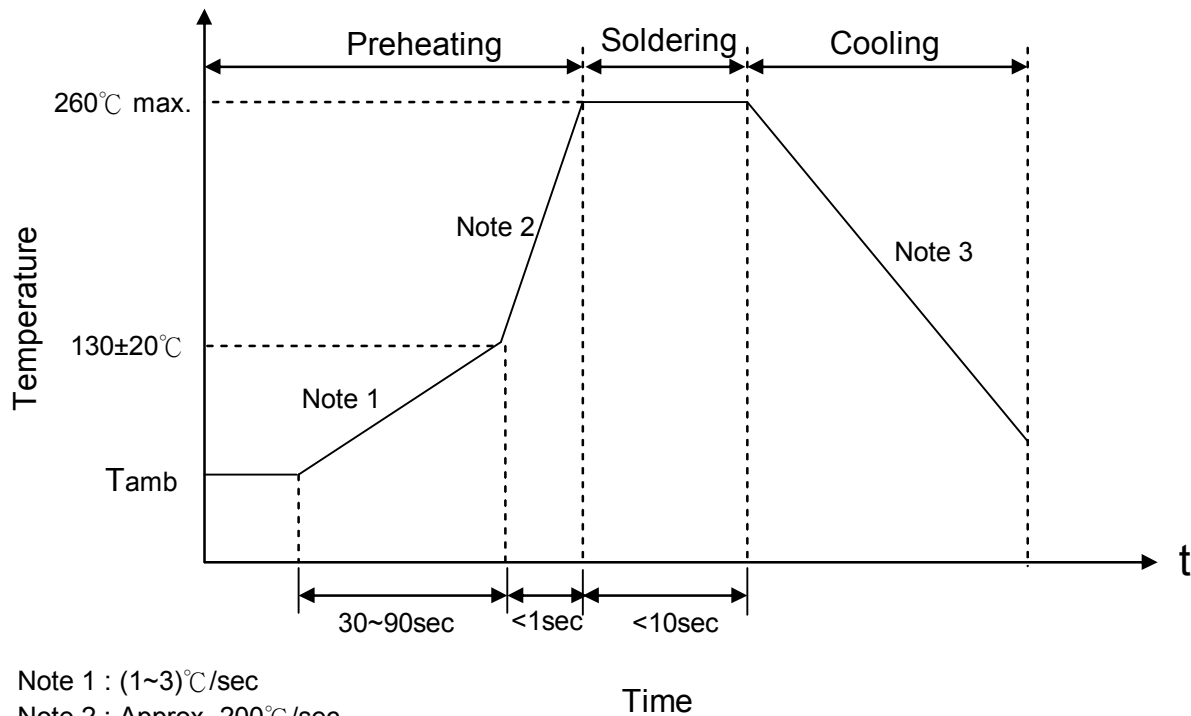
Reliability

Item	Standard	Test conditions / Methods	Specifications															
Tensile Strength of Terminals	IEC60068-2-21	Gradually applying the force specified and keeping the unit fixed for 10±1 sec. <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Terminal diameter (mm)</td> <td style="text-align: center;">Force (Kg)</td> </tr> <tr> <td style="text-align: center;">0.5<d ≤ 0.8</td> <td style="text-align: center;">1.0</td> </tr> <tr> <td style="text-align: center;">0.8<d ≤ 1.25</td> <td style="text-align: center;">2.0</td> </tr> </table>	Terminal diameter (mm)	Force (Kg)	0.5<d ≤ 0.8	1.0	0.8<d ≤ 1.25	2.0	No visible damage									
Terminal diameter (mm)	Force (Kg)																	
0.5<d ≤ 0.8	1.0																	
0.8<d ≤ 1.25	2.0																	
Solderability	IEC60068-2-20	245 ± 3 °C , 3 ± 0.3 sec	At least 95% of terminal electrode is covered by new solder															
Resistance to Soldering Heat	IEC60068-2-20	260 ± 3 °C , 10 ± 1 sec	No visible damage ΔR ₂₅ /R ₂₅ ≤ 10%															
High Temperature Storage	IEC60068-2-2	T _u ± 5 °C , 1000 ± 24 hrs	No visible damage ΔR ₂₅ /R ₂₅ ≤ 20%															
Damp Heat, Steady State	IEC 60068-2-78	40 ± 2°C , 90 ~ 95 % RH , 1000 ± 24 hrs	No visible damage ΔR ₂₅ /R ₂₅ ≤ 20%															
Rapid Change of Temperature	IEC60068-2-14	The conditions shown below shall be repeated 5 cycles <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Period (minutes)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">T_L ± 5</td> <td style="text-align: center;">30 ± 3</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">Room temperature</td> <td style="text-align: center;">5 ± 3</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">T_u ± 5</td> <td style="text-align: center;">30 ± 3</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">Room temperature</td> <td style="text-align: center;">5 ± 3</td> </tr> </tbody> </table>	Step	Temperature (°C)	Period (minutes)	1	T _L ± 5	30 ± 3	2	Room temperature	5 ± 3	3	T _u ± 5	30 ± 3	4	Room temperature	5 ± 3	No visible damage ΔR ₂₅ /R ₂₅ ≤ 20%
Step	Temperature (°C)	Period (minutes)																
1	T _L ± 5	30 ± 3																
2	Room temperature	5 ± 3																
3	T _u ± 5	30 ± 3																
4	Room temperature	5 ± 3																
Max. Current	IEC60539-1 4.26.1	25 ± 5 °C , I _{max.} , 1000 ± 24 hrs	No visible damage ΔR ₂₅ /R ₂₅ ≤ 20%															
Endurance	Specification Standard	25±5°C, I _{max.} , C _T , 1min ON / 5 min OFF x1000 cycles C _T =Capacitance at 240Vac	No visible damage ΔR ₂₅ /R ₂₅ ≤ 20%															
Insulation	MIL-STD-202F-Method 302	1000 V _{DC} 1 min	No visible damage ≥ 500 MΩ															

Products have been tested at Thinking Electronic Industrial Co., Ltd. Laboratory recognized by UL (Underwriters Laboratories Inc.) under CTDTP (Client Test Data Program).

Soldering Recommendation

Wave Soldering Profile



Note 1 : (1~3)°C/sec

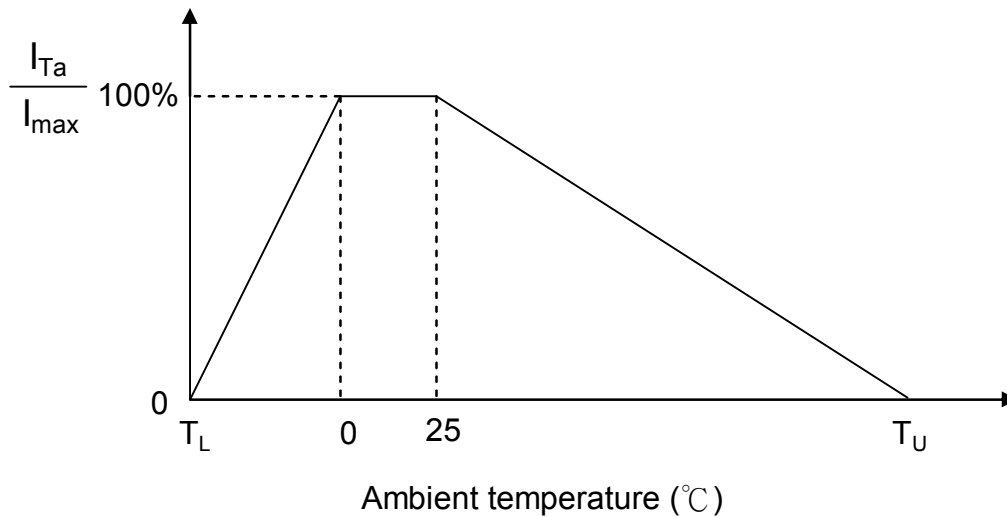
Note 2 : Approx. 200°C/sec

Note 3 : 5°C/sec max

Recommended Reworking Conditions with Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	360°C (max.)
Soldering Time	3 sec (max.)
Distance From Thermistor	2 mm (min.)

Max. Current Derating Curve



Note: T_L = Minimum operating temperature ($^{\circ}C$)

T_U = Maximum operating temperature ($^{\circ}C$)

For example :

Ambient temperature(T_a) = 60 $^{\circ}C$

Maximum operating temperature(T_u) = 200 $^{\circ}C$

$I_{Ta} = [1 - (T_a - 25) / (T_u - 25)] \times I_{max} = 80\% I_{max}$.

RoHS Compliant Declaration

We hereby declare that the components delivered to your company are compliant with RoHS directive 2011/65/EU.

Warehouse Storage Conditions of Products

(I) Storage Conditions :

- 1.Storage Temperature : -10 $^{\circ}C$ ~ +40 $^{\circ}C$
- 2.Relative Humidity : $\leq 75\%RH$
- 3.Keep away from corrosive atmosphere and sunlight.

(II) Period of Storage : 1 year

Safety Approvals (Certified Model/Type : SCK-104)



* UL 1434 / cUL recognized (File # E138827)



* CSA recognized (File # 97495)



* TÜV recognized (File # R 50050155)



* CQC GB/T 6663.1-2007 recognized (File # CQC05001011985)

* CQC GB/T 6663.1-2007 recognized (File # CQC05001011990)

Certificates

- (1) TS 16949 certificate
- (2) ISO 9001 certificate

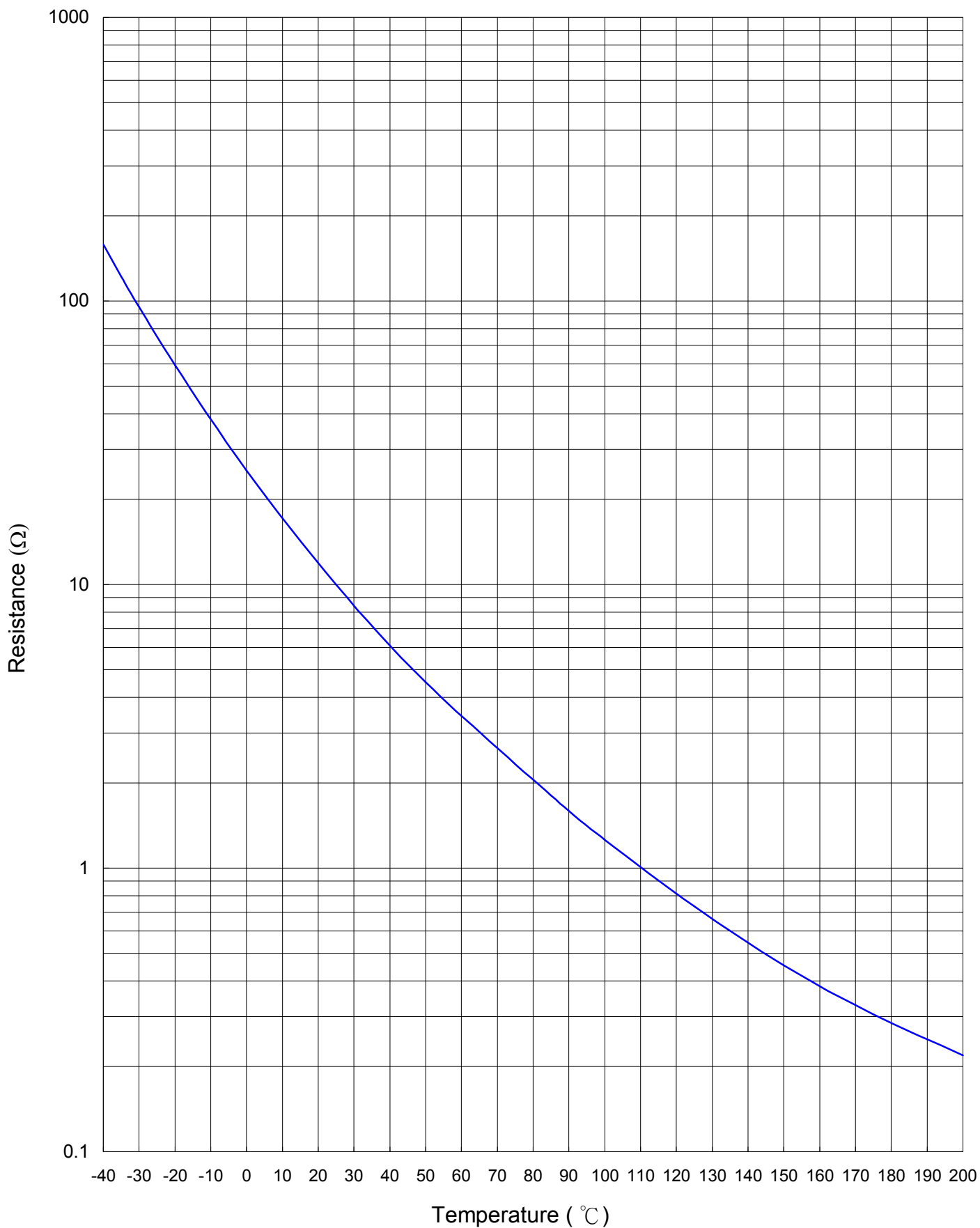
Test Report

- (1) RoHS test report
- (2) Halogen-free test report



R-T Characteristic Curve

SCK13104MFY





V-I Characteristic Curve (Ambient $T_a=25^\circ\text{C}$)

SCK13104MFY

