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SPECIFICATION FOR APPROVAL

CUSTOMER	TRG
CERTIFIED MODEL/TYPE	SCK20200
PART NO.	SCK20200MSBY (RoHS+HF)
APPLICATION	
CUSTOMER P/N	
ISSUE DATE	Mar.20.2020
REV. NO.	
REV. DATE	

FOR CUSTOMER APPROVAL	CHECKED BY
	<i>Haili Gong</i>
	APPROVED BY
	<i>Huaifang Zhang</i>





NTC Thermistor SCK Type

Part No.:SCK20200MSBY

REVISED RECORD SHEET

REV. NO	REV. DATE	REVISED CONTENT



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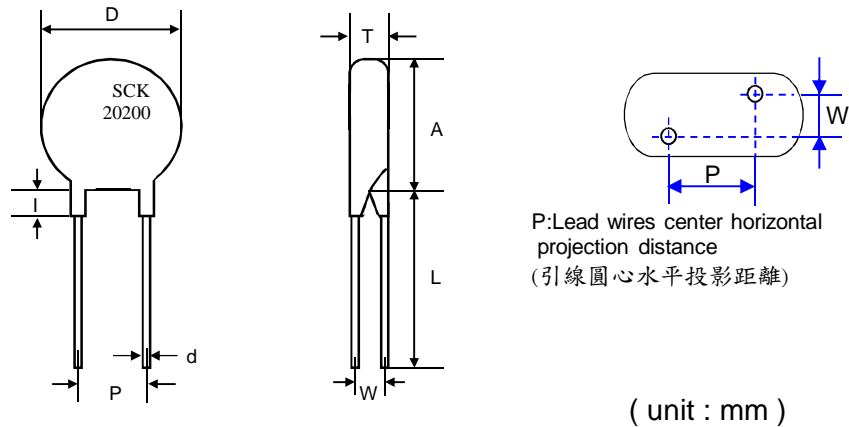
Part Number Code

Example :

SCK
20
200
M
S
B
Y
(1)
(2)
(3)
(4)
(5)
(6)
(7)

No.	Item	Digit	Specification
(1)	Product Type	SCK	Thinking NTC thermistor SCK type
(2)	Body Size	20	φ 20 mm
(3)	Zero Power Resistance at 25°C (R ₂₅)	200	20Ω
(4)	Tolerance of R ₂₅	M	± 20%
(5)	Appearance	S	Straight lead
(6)	Packaging	B	Bulk
(7)	Optional Suffix	Y	RoHS+HF compliance

Structure and Dimensions



Body Size	D	P	d	A max.	L min.	T	I max.	W
φ 20mm	18~21.5	7.5±0.5	1±0.02	21.5	26	3.5~6	3	2.6±0.3

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 (Ω)	(± %)	I _{max} (A)	R _{I_{max}} (Ω)	P _{max} (W)
SCK20200MSBY	20	20	4	0.306	4.9

Part No.	Dissipation Factor	Thermal Time Constant	Capacitance at 240Vac	Operating Temperature Range
	δ (mW/°C)	τ (sec.)	(uF)	T _L ~T _U (°C)
SCK20200MSBY	Approx. 28	Approx. 113	1000	-40 ~+200

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

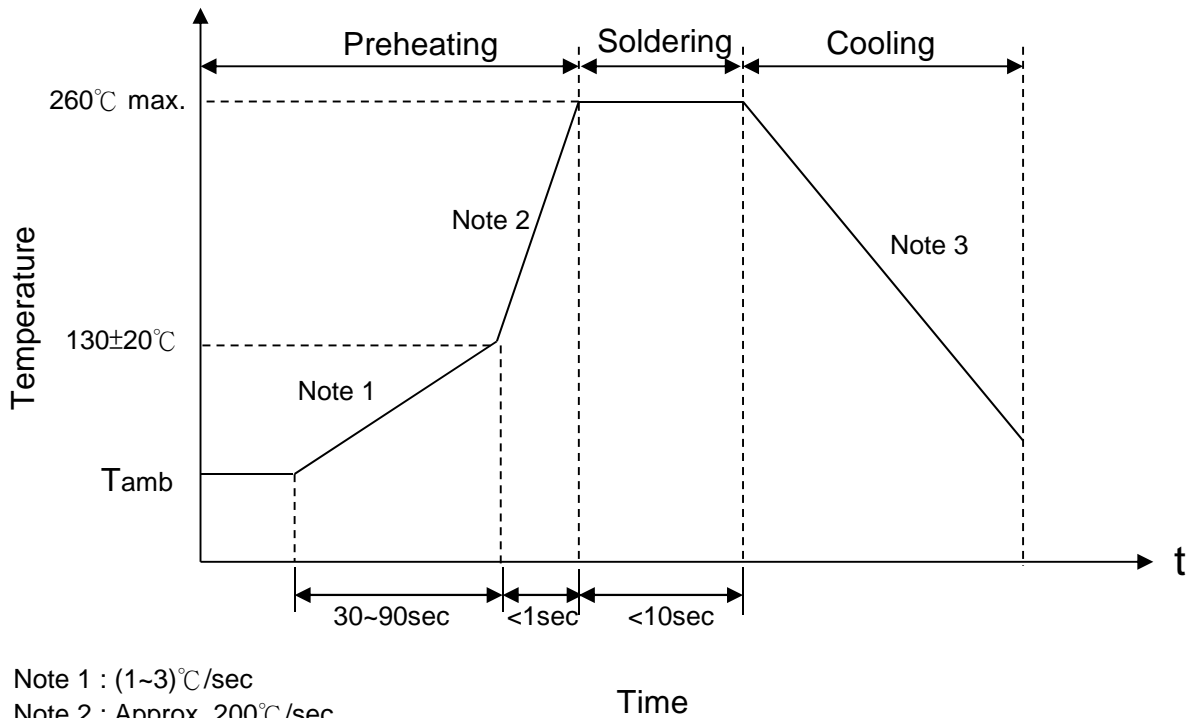
Reliability

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	$ \Delta R_{25}/R_{25} \leq 10\%$									
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	Inspection shall be carried out with the assistance of a magnifier capable of giving a magnification of 4 x to 10 x . At least 95% of terminal electrode is covered by new solder. The dipped surface shall be covered with a smooth and bright solder coating with no more than small amounts of scattered imperfections such as pin-holes or un-wetted or de-wetted areas. These imperfections shall not be concentrated in one area.															
Resistance to Soldering Heat	IEC60068-2-20	260 ± 3 °C , 10 ± 1 sec	No visible damage $ \Delta R_{25}/R_{25} \leq 10\%$															
High Temperature Storage	IEC60068-2-2	Tu ± 5 °C , 1000 ± 24 hrs	No visible damage $ \Delta R_{25}/R_{25} \leq 20\%$															
Damp Heat, Steady State	IEC 60068-2-78	40 ± 2°C , 90 ~ 95 % RH , 1000 ± 24 hrs	No visible damage $ \Delta R_{25}/R_{25} \leq 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;">TL ± 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;">Tu ± 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	TL ± 5	30 ± 3	2	Room temperature	5 ± 3	3	Tu ± 5	30 ± 3	4	Room temperature	5 ± 3	No visible damage $ \Delta R_{25}/R_{25} \leq 20\%$
Step	Temperature (°C)	Period (minutes)																
1	TL ± 5	30 ± 3																
2	Room temperature	5 ± 3																
3	Tu ± 5	30 ± 3																
4	Room temperature	5 ± 3																
Max. Current	IEC60539-1 4.26.1	25 ± 5 °C , Imax. , 1000 ± 24 hrs	No visible damage $ \Delta R_{25}/R_{25} \leq 20\%$															
Endurance	Specification Standard	25±5°C, Imax. , CT, 1min ON / 5 min OFF x1000 cycles CT=Capacitance at 240Vac	No visible damage $ \Delta R_{25}/R_{25} \leq 20\%$															
Insulation	MIL-STD-202F-Method 302	1000 VDC 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 CTD (Client Test Data Program).

Soldering Recommendation

Wave Soldering Profile



Note 1 : (1~3)°C/sec

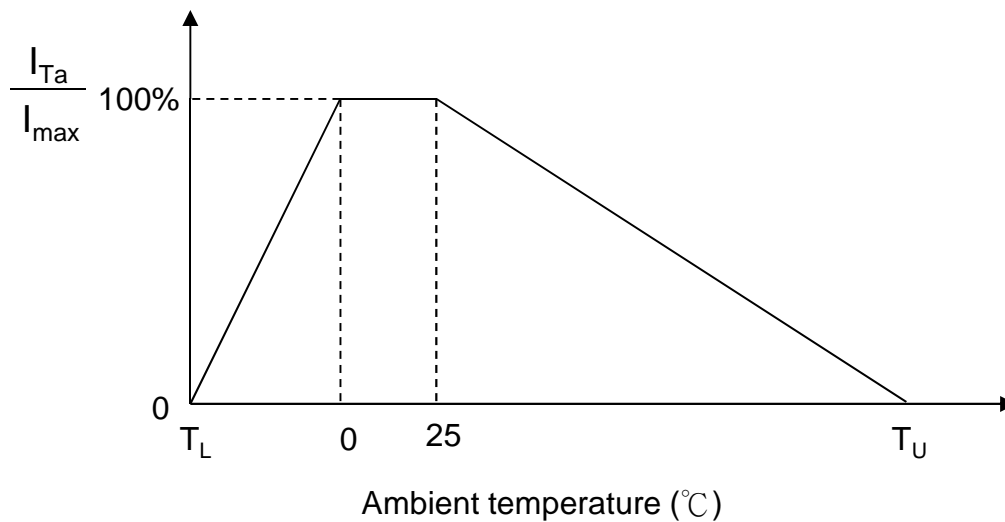
Note 2 : Approx. 200°C/sec

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 2015/863/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 : SCK20200)



* UL 1434 / cUL recognized (File # E138827)



* TÜV recognized (File # R 50050155)



* CQC GB/T 6663.1-2007 recognized (File # CQC04001011942)

* CQC GB/T 6663.1-2007 recognized (File # CQC04001011963)

Certificates

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

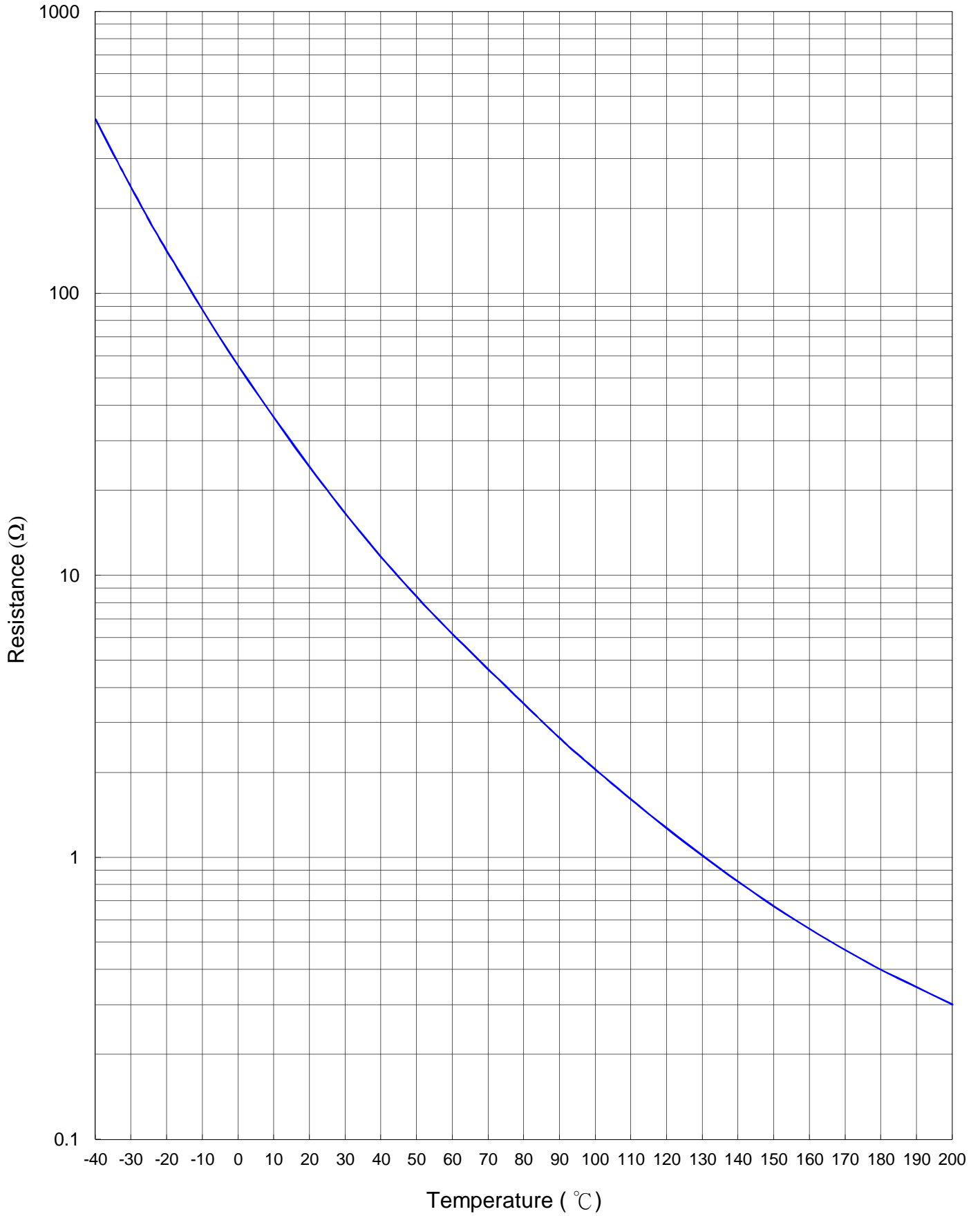
Test Report

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



R-T Characteristic Curve

SCK20200MSBY



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

SCK20200MSBY

