

Negative Temperature Coefficient Thermistor- MF59 Series

SPECIFICATION FOR APPROVAL

CUSTOMER: _____

PART NO: _____

PART OF STE: _____

SPECS OF STE: _____

★ Environmental Compliance:

RoHS Compliance REACH Compliance

Halogen-Free Compliance

★ Package: Bulk Tape

Drafted by	For Customer Approval
	(Please confirm by sign back)
Audit	
Approval	

Company and Factory Name: SHANTOU FREETRADEZONE SONGTIAN ELECTRONIC TECHNOLOGY CO.,LTD

Add: Songtian Science and Technology Park, Free Trade Zone, Shantou, City, Guangdong, China.

Tel: 86-754-88266532 Fax: 86-754-88266546

E-mail: info@songtian.cn P.O. BOX: 515071

Homepage: <http://songtian-ste.com>

Basic Parameter Definition

★ Thermistor

A thermistor is a heat-sensitive semiconductor resistor. Its resistance value changes with the temperature of the element itself.

★ NTC Thermistor

NTC thermistor is a kind of ceramic semiconductor thermal crystal sintered from manganese, cobalt, nickel and various metal oxides as raw materials. Its zero-power resistance value decreases with the increase of the temperature of the element itself.

★ Zero Power Resistance (Rt)

At a certain temperature (t), the DC resistance value when the power consumed by the thermistor is extremely low (if the power is further reduced, the resistance value change rate is still less than 0.1%).

★ B Value (B)

The B value is two specific ambient temperatures (calculated by the formula under the absolute temperature)

$$B = \ln(R1/R2) / (1/T1 - 1/T2)$$

Songtian's B value is obtained at T1=298.15K, T2=323.15K or 358.15K. Generally B=2000~6000K, the larger the B value, the greater the resistance change rate per 1°C.

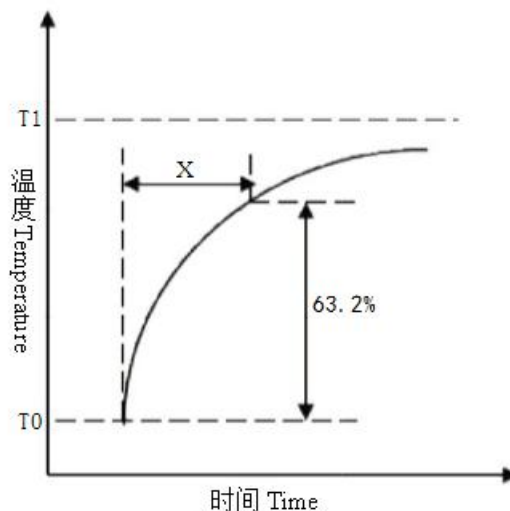
★ Dissipation Coefficient (δ)

At a certain ambient temperature, the power required by the NTC thermistor to increase its temperature by 1°C through self-heating, usually expressed in mW/°C, can be calculated by the following formula.

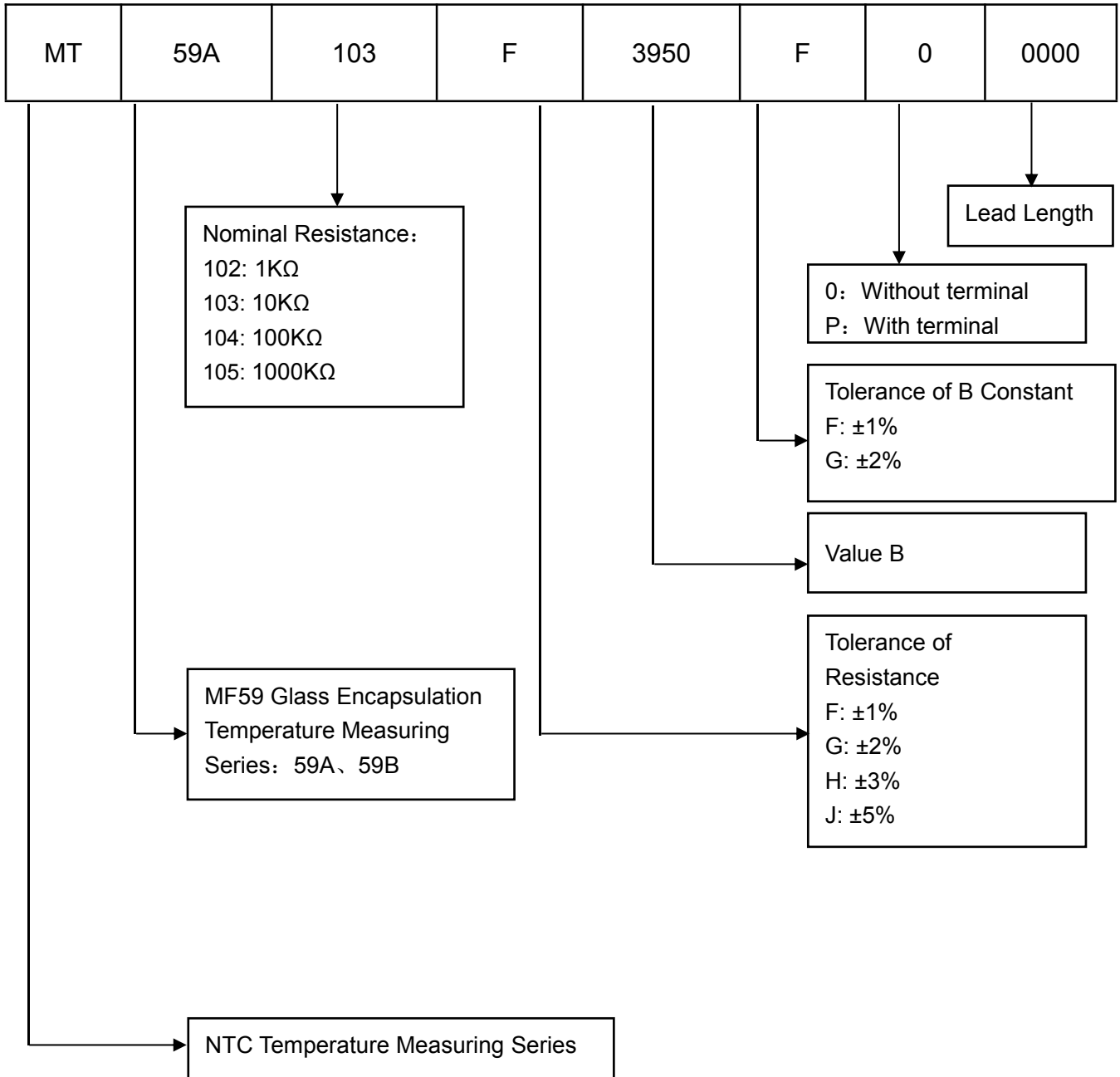
$$\delta = V \times I / (T - T_0)$$

★ Thermal time Constant(T)

Under zero power conditions, when the ambient temperature of the thermistor changes rapidly, the time required for the thermistor element to produce a temperature change of 63.2% of the temperature of both the initial temperature T0 and the final temperature T1, usually in seconds (S) indicated, refer to the figure below.



Part Number Code





★Product Feature

- Glass encapsulated, can be used in harsh environments such as high temperature and high humidity.
- High temperature measurement accuracy, good stability and wide resistance range.
- Small size, fast response and good sensitivity.
- No lead, easy for SMT automatic installation

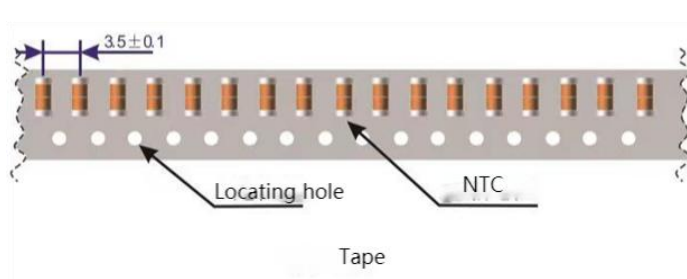
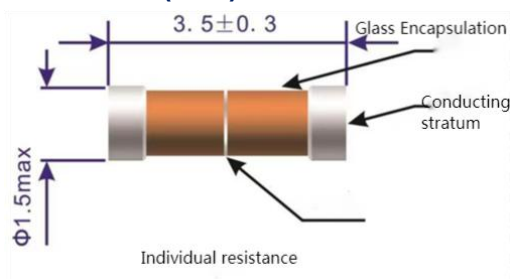
★Application Area

- Office automation equipment (such as laptops, copiers, printers, etc.).
- Digital devices (mobile phones, PDAs, cell phones, etc.).
- Rechargeable batteries (lithium batteries, NiMH batteries, etc.).
- Temperature compensation of instrument coils, integrated circuits, quartz crystal oscillators and thermocouples.

★Product Specifications

Style	R25 Nominal Resistance (KΩ)	R25 Resistance Tolerance	B Value Tolerance	Thermal Time Constant (S) In Still Air	Dissipation Factor (mW/°C) In Still Air	Rated power (25°C) (mW)	Operating Temperature Range (°C)
MF59A	0.1~100	±1%	±0.5%	A type ≤10	A type ≥2	A type ≤10	-55 ~ +220°C
MF59B		±2% ±3% ±5% ±10%		±1%	B type ≤5	B type ≥1	

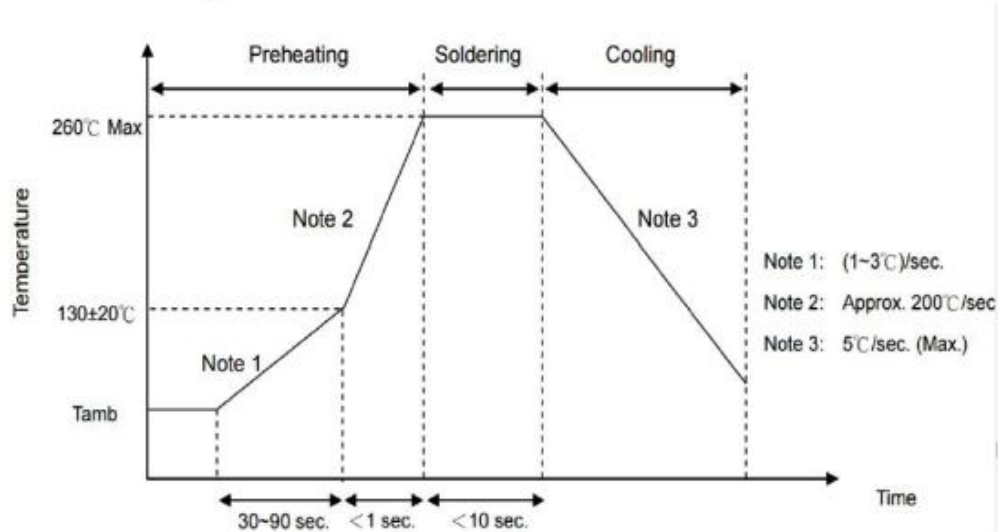
★Dimension (mm)



Style	L (mm)	D (mm)
MF59A	3.6 ± 0.3	1.5 ± 0.2
MF59B	1.8 ± 0.3	1.1 ± 0.2

Soldering Condition

Wave Soldering Profile



Iron Soldering Condition

Item	Condition
Temperature of soldering copper bit	300 °C (max.)
Soldering duration	3sec (max.)
Space between soldering position and coating layer	2mm (min.)

Storage Conditions

- When store under the atmosphere, the terminal may contact with the substance of hydrochloride, hydrosulfide, sulfuric acid, etc. in the atmosphere, which needs to be paid attention to the deterioration of the solderability of the terminal.
- Product could not be exposed to high humidity and high temperature environment. Please store under below condition with the original packing.
 - A Temperature: ≤35°C
 - B Humidity: ≤70%RH
 - C Storage period: Max 12 months
 - D After the package is opened, it needs to be resealed for storage.