

Glass-sealed NTC Thermistors

Type: **ERTG**

Glass-sealed NTC Thermistors, Type ERTG, are miniature axial leaded type thermistors in hermetically sealed glass tube packages, featuring high accuracy and high reliability owing to their unique construction.

■ Features

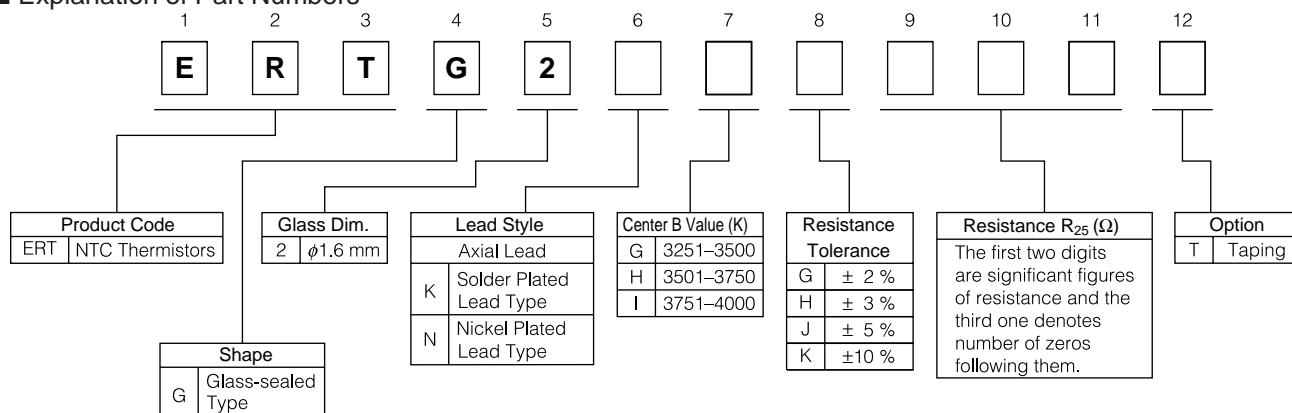
- Wide Operating Range
Nickel plated lead type: -40 to +300 °C
Solder plated lead type: -40 to +125 °C
- Miniature axial lead type: (φ1.6×2.4 mm)
- Quick response
- Highly stable in long term operation

■ Recommended Applications

Temperature detection for:

- Cooking Appliances
- Air conditioning equipment
- Automobile

■ Explanation of Part Numbers



■ Ratings and Characteristics

Part No.	Zero-Power Resistance (@25 °C)	B Value		Thermal Time Constant	Operating Temperature Range	Heat Dissipation Constant***	Table A Curve No.
		25°C/50°C	25°C/85°C				
ERTG2KG□*202	2.0 kΩ	3450 K	(3485 K)	6 s	-40 to +125 °C (Solder Plated Type)	1.5 mW/°C	1
ERTG2KH□*502	5.0 kΩ	3550 K	(3615 K)				2
ERTG2KH□*802	8.0 kΩ	3550 K	(3615 K)				3
ERTG2KG□*103	10.0 kΩ	3380 K	(3435 K)				4
ERTG2KI□*203	20.0 kΩ	3950 K	(3980 K)				5
ERTG2KI□*333	33.0 kΩ	3950 K	(3980 K)				6
ERTG2NG□*202	2.0 kΩ	3450 K	(3485 K)	6 s	-40 to +300 °C (Nickel Plated Type)	1.5 mW/°C	1
ERTG2NH□*502	5.0 kΩ	3550 K	(3615 K)				2
ERTG2NH□*802	8.0 kΩ	3550 K	(3615 K)				3
ERTG2NG□*103	10.0 kΩ	3380 K	(3435 K)				4
ERTG2NI□*203	20.0 kΩ	3950 K	(3980 K)				5
ERTG2NI□*333	33.0 kΩ	3950 K	(3980 K)				6

*Resistance Tolerance Code:

G	H	J	K
±2 %	±3 %	±5 %	±10 %

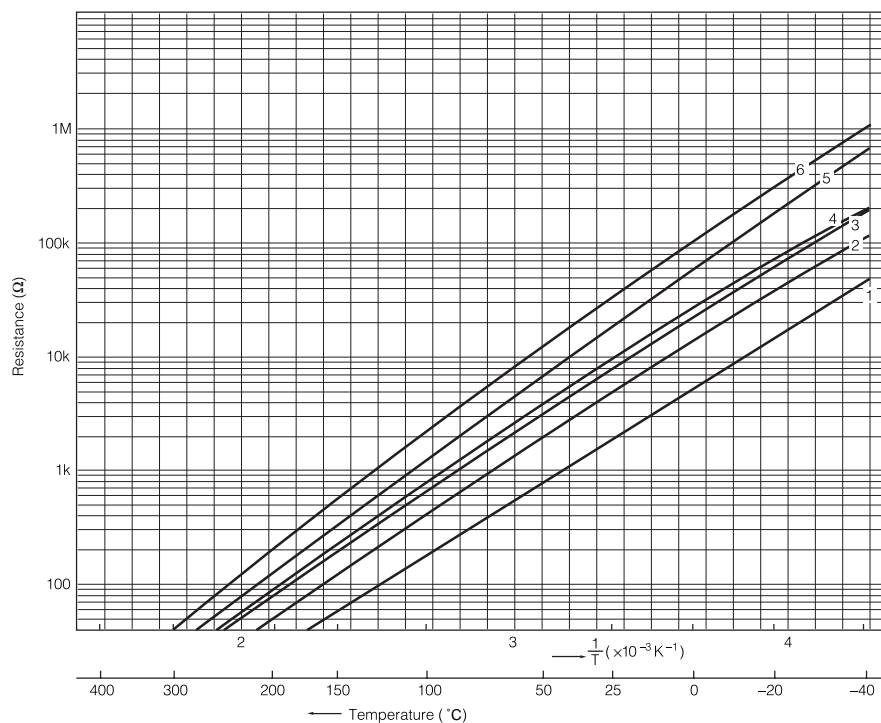
Tolerance of "B value": ±3 %

$$B(25^{\circ}\text{C}/50^{\circ}\text{C}) = \frac{\ln(R_{25}/R_{50})}{1/298.15 - 1/323.15}$$

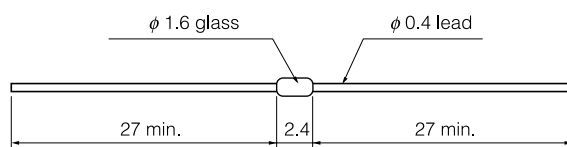
$$B(25^{\circ}\text{C}/85^{\circ}\text{C}) = \frac{\ln(R_{25}/R_{85})}{1/298.15 - 1/358.15}$$

R₂₅=Resistance at 25.0 °C
R₅₀=Resistance at 50.0 °C
R₈₅=Resistance at 85.0 °C

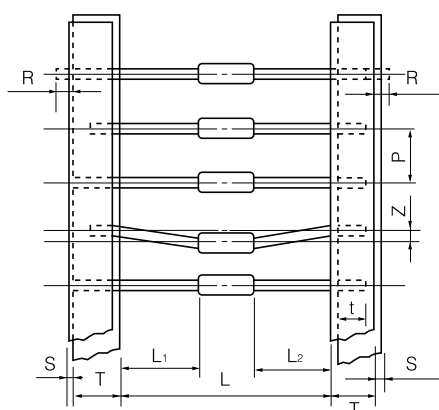
■ Resistance vs. Temperature (Table A)



■ Dimensions in mm (not to scale)



● Taping Type




L	26.0 ^{+0.5} ₋₀
P	5.0±0.5
L ₁ -L ₂	2.2 max.
Z	1.0 max.
R	0.2 max.
T	6.0±1.0
t	3.2 min.
S	1.0 max.

Glass-sealed NTC Thermistors

Precautions for Handling

Precautions for Safety

Glass-sealed NTC Thermistors (hereafter referred to as "The NTC Thermistors") may fail in burnout, flaming or glowing in the worst case, when subjected to severe conditions of electrical, environmental and/or mechanical stresses.

Following " Precautions for Safety" and "Application Notes" shall be taken in your major consideration. If you have a question about the "Precautions for Handling", Please contact our engineering section or factory.

1. Precautions for Safety

1.1 Operating Temperature Range

The NTC Thermistors shall not be operated beyond the specified Operating Temperature Range in the Catalog or the individual Specification.

1.2 Plastic Molding and Potting

In a case of plastic molding or potting, the NTC Thermistors may be damaged or deteriorated by extremely large mechanical stresses such as expanding and shrinking forces caused by the heat treatment of the plastics applied, depending on curing conditions and type of plastics.

1.3 Environmental Conditions

The NTC Thermistors shall not be operated and/or stored under following environmental conditions;

- a) To be exposed directly to water or salt water.
- b) To be exposed directly to sunlight.
- c) Under conditions of dew formation.
- d) To be exposed directly to oil, gasoline or organic solvent and/or atmospheres of them.
- e) Under conditions of deoxidized or corrosive atmospheres such as chlorine, hydrogen sulfide, sulfur oxide and cracked gas from vinyl chloride etc.
- f) Under severe conditions of extreme vibrations or shocks.

1.4 Fail-Safe Design for Equipment

In application of the Thermistors, equipment shall be protected against deterioration's and failures of the Thermistors.

2. Application Notes

2.1 Soldering Flux

Rosin-based and non-activated type soldering flux is recommended.

2.2 Abnormal Mechanical Stresses

The NTC Thermistors may be damaged or deteriorated, when dropped or exposed to a large impact. Excessive shock and impact shall not be applied.

2.3 Soldering

- (1) Soldering of the thermistors shall be done at a position of 2.5 mm or more apart from glass edges of the devices.
- (2) In soldering the device, the glass sealed section shall not be touched by molten solder and/or heated iron tip.

2.4 Bending of the Lead Wires

The NTC Thermistors are easybreakable against mechanical stresses. Bending of the lead wires shall be done after securing/clamping the lead wires.

2.5 Long Term Storage

- (1) The NTC Thermistors shall not be stored under severe conditions of high temperatures and high humidities.
- (2) The NTC Thermistors shall not be stored under conditions of corrosive atmosphere such as hydrogen sulfide, sulfur oxide and chlorine and ammonia etc.
- (3) The NTC Thermistors shall not be exposed to directly sunlight.
- (4) The NTC Thermistors shall not be stored under dew formation.
- (5) Store them indoors under 40 °C max. and 75 %RH max.
Use them within one year and check the solderability before use.