NTC / PTC Thermistors for Automotive

NTC Thermistor Resin Coated Radial Lead Type

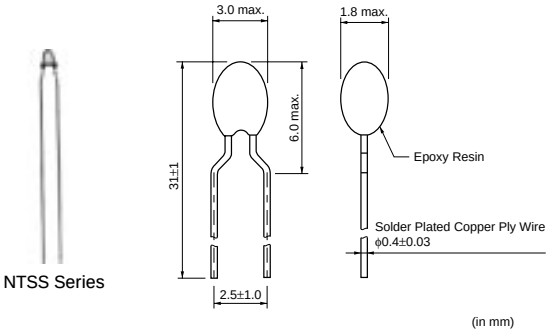
This product is a sensor type NTC Thermistor to be useful in the normal temperature range developed by the unique ceramic technology and the automatic assembly.

■ Features

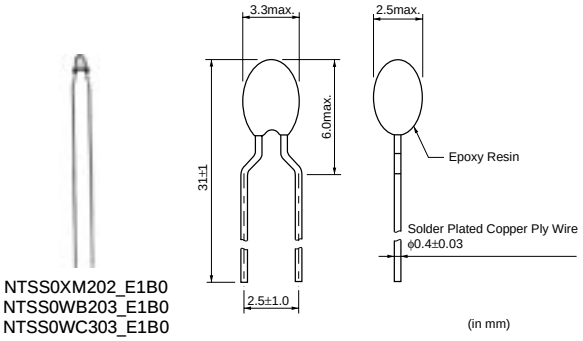
1. High-accuracy of +/-1%
   +/-1% of resistance and B-Constant tolerance is realized due to uniform thickness by the precise sheet forming method.
2. Quick response
   This product provides faster response time due to its smaller size.
3. Taping type is available.
4. Strong lead strength
   Original lead-wiring technique assures reliable connection. It can be formed and bent flexibly according to the mounting conditions.

■ Applications

1. Car audio, car navigation
2. Various engine control units
3. Circuits for ETC equipment
4. Various motor driving circuits
5. Temperature compensation for various circuists



NTSS Series

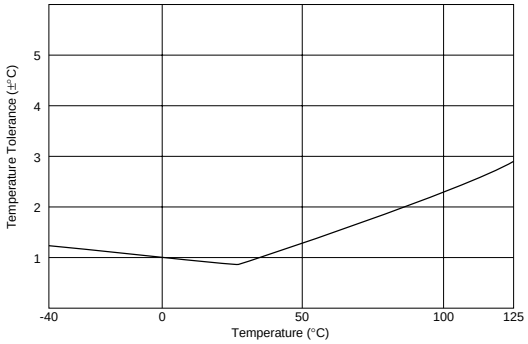


NTSS0XM202_E1B0
NTSS0WB203_E1B0
NTSS0WC303_E1B0

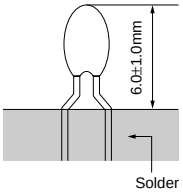
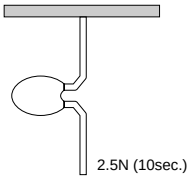
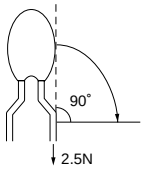
Part Number	Resistance (25°C) (k ohm)	B-Constant (25-50°C) (K)	Permissive Operating Current (25°C) (mA)	Rated Electric Power (25°C) (mW)	Typical Dissipation Constant (25°C) (mW/°C)	Thermal Time Constant (25°C)(s)	Operating Temperature Range (°C)
NTSS0XM202□E1B0	2.0	3500 ±1%	1.05	21	2.1	7	-40 to 125
NTSS0XR502□E1B0	5.0	3700 ±1%	0.68	21	2.1	7	-40 to 125
NTSS0XH103□E1B0	10	3380 ±1%	0.38	15	1.5	7	-40 to 125
NTSS0XV103□E1B0	10	3900 ±1%	0.46	21	2.1	7	-40 to 125
NTSS0WB203□E1B0	20	4050 ±1%	0.31	21	2.1	7	-40 to 125
NTSS0WC303□E1B0	30	4100 ±1%	0.26	21	2.1	7	-40 to 125
NTSS0WD503□E1B0	50	4150 ±1%	0.20	21	2.1	7	-40 to 125
NTSS0WF104□E1B0	100	4250 ±1%	0.14	21	2.1	7	-40 to 125

A blank column is filled with resistance tolerance codes. (F: ±1%, E: ±3%)
Taping type of part numbers with "N6A0" is available. (Lead spacing=5mm)
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the "Package" page.

■ Temperature Tolerance-Temperature Characteristics



for NTC Thermistors Lead Type Specifications and Test Methods

No.	Item	Rating Value	Method of Examination
1	High temp. test 1	•Resistance (R25) fluctuation rate less than ±2% •B-Constant (B25/50) fluctuation rate less than ±1%	150±2°C in air, for 1000 +48/-0 hrs. without loading
2	High temp. test 2	•Resistance (R25) fluctuation rate less than ±1% •B-Constant (B25/50) fluctuation rate less than ±1%	125±3°C in air, for 1000 +48/-0 hrs. without loading
3	Low temp. test		-40±3°C in air, for 1000 +48/-0 hrs. without loading
4	Humidity test		60±2°C, 90-95%RH in air, for 1000 +48/-0 hrs. without loading
5	High temp. pressure test	•Resistance (R25) fluctuation rate less than ±2% •B-Constant (B25/50) fluctuation rate less than ±1%	121±2°C, 2atm. in saturated vapor, leave for 2 +1/-0 hrs. without loading
6	Heat shock test		-55°C±3°C, 30min. in air 125°C±2°C, 30min. in air (1 cycle) Continuous 1000 +4/-0 cycles without loading
7	High temp. continuous load test		100±2°C in air, with Permissive Operating Current for 1000 +48/-0 hrs.
8	Humidy continuous load test		85±2°C, 85%RH in air, with Permissive Operating Current for 1000 +48/-0 hrs.
9	Insulation break-down Voltage	•Normal appearance •Normal electrical characteristics on 500Vdc, 1 min.	2 mm length of coating resin from the top of thermistor is to be dipped into beads of lead (Pb), and D.C 500V is applied to circuit between beads of lead (Pb) and lead wire.
10	Solvent proof	•Normal appearance •Resistance (R25) fluctuation rate less than ±1% •B-Constant (B25/50) fluctuation rate less than ±1%	Using Chlorine Washing Solvents, Boiling, 10 min. Supersonic, 10 min.
11	Resistance to Soldering Heat	•Resistance (R25) change less than ±1% •B-Constant (B25/50) change less than ±1%	Both lead wires are immersed into 350±10°C solder for 3.5±0.5 secs. or 260±5°C solder for 10±1 secs. according to Fig-1. (solder <JIS Z 3282 H60A>) Fig-1 
12	Solderability	More than 90% of lead wire surface should be covered by solder.	Both lead wires are immersed into flux (25wt% colophony <JIS K 5902> isopropyl alcohol <JIS K 8839>) for 5-10 secs. Then both lead wires are immersed into 235±5°C solder <JIS Z 3282 H60A> for 2±0.5 secs. according to Fig-1.
13	Lead Wire Pull Strength	•No visible damage •Resistance (R25) change less than ±1% •B-Constant (B25/50) change less than ±1%	One end of a lead wire should be fixed and 2.5N force for 10 secs. should be applied to the other lead wire as shown in Fig-2. Fig-2 
14	Lead Wire Bending Strength	No visible damage on lead wire	One lead wire is held and 2.5N force is applied. Then the body of NTC thermistor is bent 90° degrees and again bent back to the initial position. This sequence should be completed twice. See Fig-3. Fig-3 
15	Drop Test	•No visible damage •Resistance (R25) change less than ±1% •B-Constant (B25/50) change less than ±1%	NTC Thermistor should be dropped without any force onto concrete floor from 1 meter height one time.
16	Vibration		NTC Thermistor is to be fixed to the vibration test equipment. Vibration of total 1.5mm amplitude, frequency sequence of 10Hz - 55Hz - 10Hz in 1 minute, should be applied for right angled 3 directions for 2 hours duration each.

＊ •R25 is zero-power resistance of Thermistor in 25°C.
•After each test, NTC Thermistor should be kept for 1 hour at room temperature (normal humidity and normal atmospheric pressure). Then the resistances (R25 and R50) should be measured and the appearance should be visually examined.