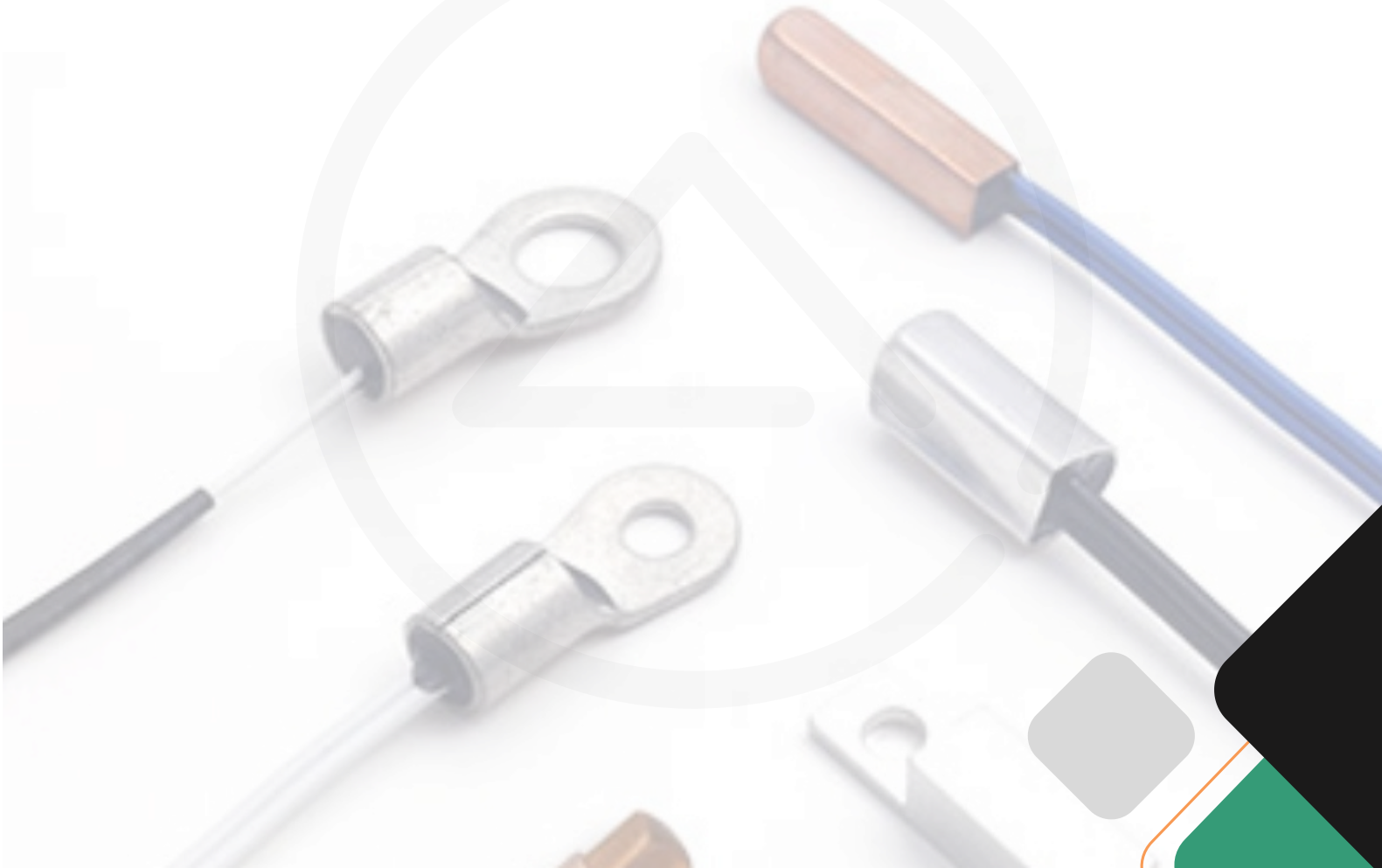
NTC Thermistor Temperature Sensing/Compensation

PCB Mounted Radial type Thermistor Sensor for Temperature Compensation and Measurement



Registered office

Zen Triad Door no. 18/331/32, 2nd Floor EDENS Complex,Kanjani Road,
Chungam, Thrissur, Kerala, India, Pin - 680 004.
Office PH: +91 8086861017, +91 6282940030

Manufacturing unit:

ZENTRIAD ELECTROLINK CORP
Industrial Development Plot No : 3
Varavoor Industrial Estate Thalssery Road Varavoor
8086861017 kerala

ZENTRIAD
Second Floor, 500 SQ.FEET,Plot No:- E-69, Hall No.5,GIDC Road, Sector 26,Gandhinagar,Gujarat,Pin-382028
Mob: +91-8980802380, +91-9778170597

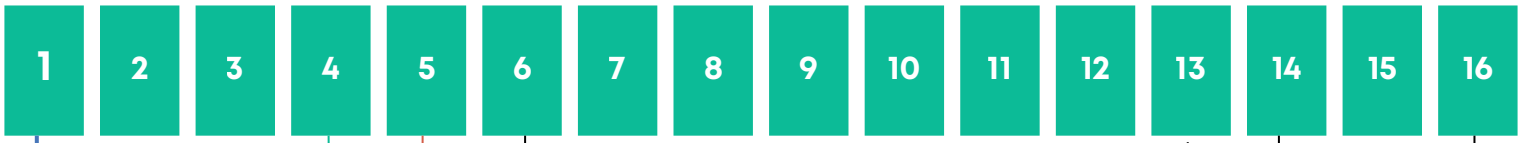
Features

- RoHS compliant
- Halogen-Free (HF) series are available
- Body size: Φ4.6mm to Φ6.0mm
- Radial lead with /without any Insulation
- Cost effective
- Operating temperature range: -40℃~+140℃
- Wide resistance range

Applications

- Home appliances
- Computers
- Automotive Electronics
- Adapters
- Switch Mode Power Supply
- LED Drive Circuits

Part Numbering



Product	
ZTE CB	ZTE NTC

SIZE	
1	Ø 1.8 mm × 6.0 mm (max)
2	Ø 3.0 mm × 6.0 mm (max)

Definition of B Value	
A	B25/85
B	B25/50

Resistance @ 25 °C (R25)	
102	1 kΩ
103	10 kΩ
473	47 kΩ

Tolerance	
A	±1%
B	±2%
C	±3%
D	±5%
E	±10%

B Value	
338	3380
343	3435
395	3950
405	4050

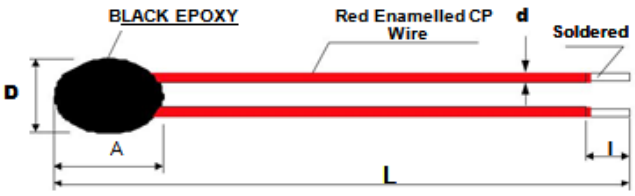
Tolerance of B Value	
1	±1%
2	±2%
3	±3%

Optional	
Y	RoHS

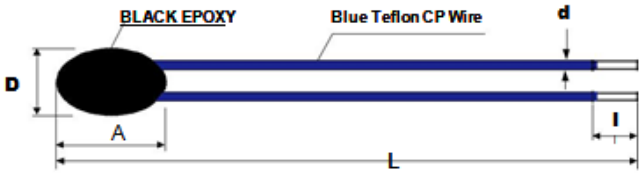
Appearance	
R	Ø 0.30 mm Enamelled CP wire
T	Ø 0.30 mm Teflon CP wire
C	Customised Teflon Nickel/Copper wire

Models and Dimensions

R Type



T Type



SERIES ZENCB	D (mm)	A (mm)	D (mm)	L (mm)	I (mm)
R TYPE	1.8	6.0	0.3 + 0.02	70 + 5	2.0 + 0.5
T TYPE	3.0	6.0	0.3 + 0.02	70 + 5	2.0 + 0.5

Note: Customised Dimension in Diameter and wire type upon request.

Electrical Characteristics 1

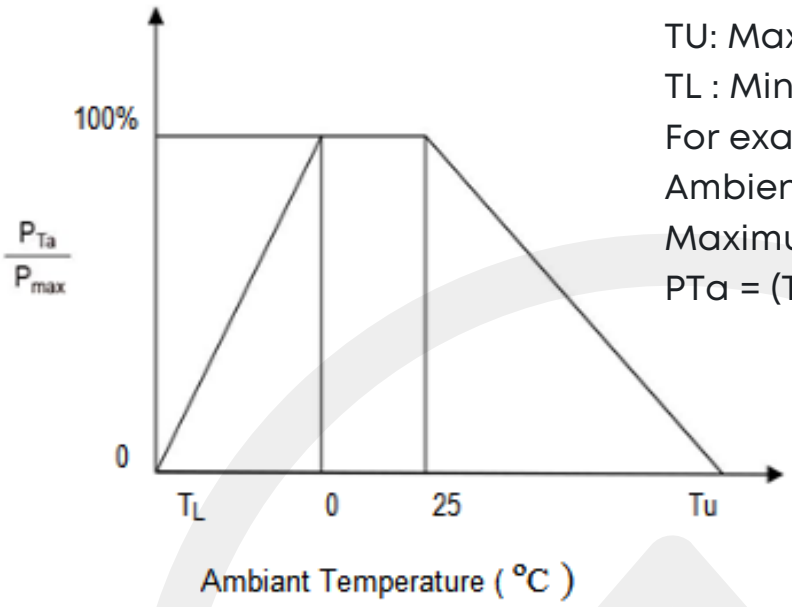
Part No.	Zero Power Resistance at 25°C	Tolerance of R25	B Value		Tolerance of B value	Max.Power Dissipation at 25 °C	Dissipation factor	ThermalTime Constant	Temperature RangeOperating	Safety Approvals	
	R25 (KΩ)	(±%)	(K)		(±%)	Pmax(mW)	Δ (mW/°C)	T (Sec.)	TL~TU (°C)	UL	cUL
ZENCB1(2)A202□36D*	2	2,3,5	25/85	3600	2,3	45	⩾1	≤10	-40 ~ +100	Y	Y
ZENCB1(2)A502□34D*	5			3435						Y	Y
ZENCB1(2)A502□395*	5			3950						Y	Y
ZENCB1(2)A103□34D*	10			3435						Y	Y
ZENCB1(2)A103□39H*	10			3975						Y	Y
ZENCB1(2)A153□39H*	15			3975						Y	Y
ZENCB1(2)A203□39H*	20			3975						Y	Y
ZENCB1(2)A503□395*	58			3950						Y	Y
ZENCB1(2)A683□34D*	60			4250						Y	Y
ZENCB1(2)A104□436*	100			4360						Y	Y

Electrical Characteristics 2

Part No.	Zero Power Resistance at 25°C	Tolerance of R25	B Value		Tolerance of B value	Max.Power Dissipation at 25 °C	Dissipation factor	ThermalTime Constant	Temperature RangeOperating	Safety Approvals	
	R25 (KΩ)	(±%)	(K)		(±%)	Pmax(mW)	Δ (mW/°C)	T (Sec.)	TL~TU (°C)	UL	cUL
ZENCB1(2)A212□390*	2.1	2,3,5	25/85	3900	2,3	45	⩾1	≤10	-40 ~ +100	Y	Y
ZENCB1(2)A272□39H*	2.7			3977						Y	Y
ZENCB1(2)A502□395*	5			3950						Y	Y
ZENCB1(2)A103□34D*	10			3435						Y	Y
ZENCB1(2)A103□39H*	10			3975						Y	Y
ZENCB1(2)A153□39H*	15			3975						Y	Y
ZENCB1(2)A203□39H*	20			3975						Y	Y
ZENCB1(2)A503□395*	50			3950						Y	Y
ZENCB1(2)A473□402*	47			4020						Y	Y
ZENCB1(2)A104□436*	100			4360						Y	Y

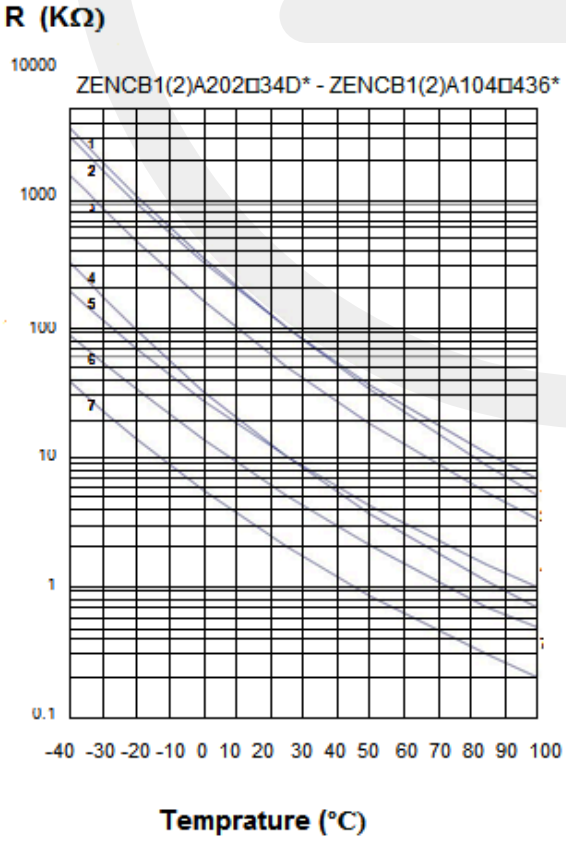
Note 1 : □ = Tolerance of R25
* = Tolerance of B value
Note 2: Special Mechanical and Electrical specifications are available upon request.

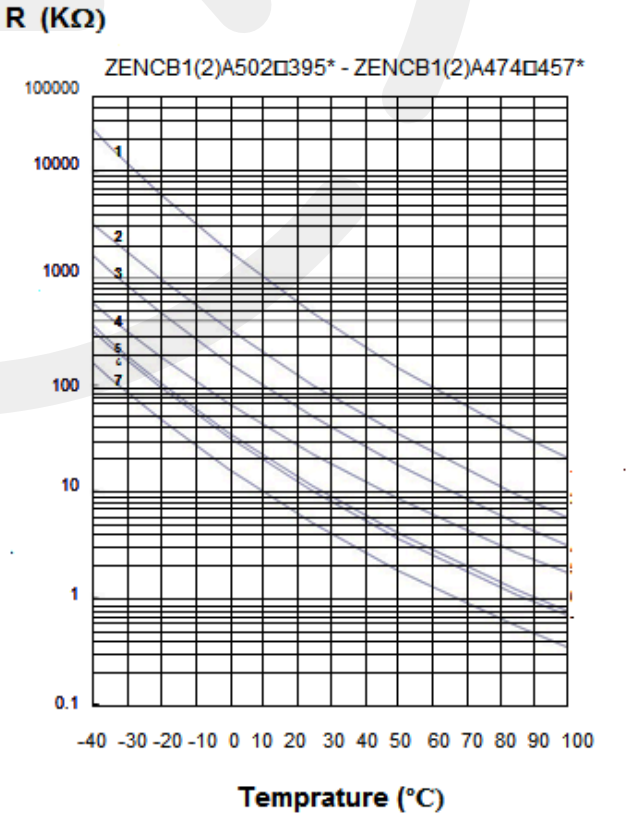
Maximum Power Dissipation Derating Curve



TU: Maximum operating Temperature (°C)
TL : Minimum operating temperature (°C)
For example:
Ambient temperature(Ta) = 55°C
Maximum operating temperature(TU) = 100°C
PTa = (TU-Ta)/(TU-25)×Pmax = 60% Pmax

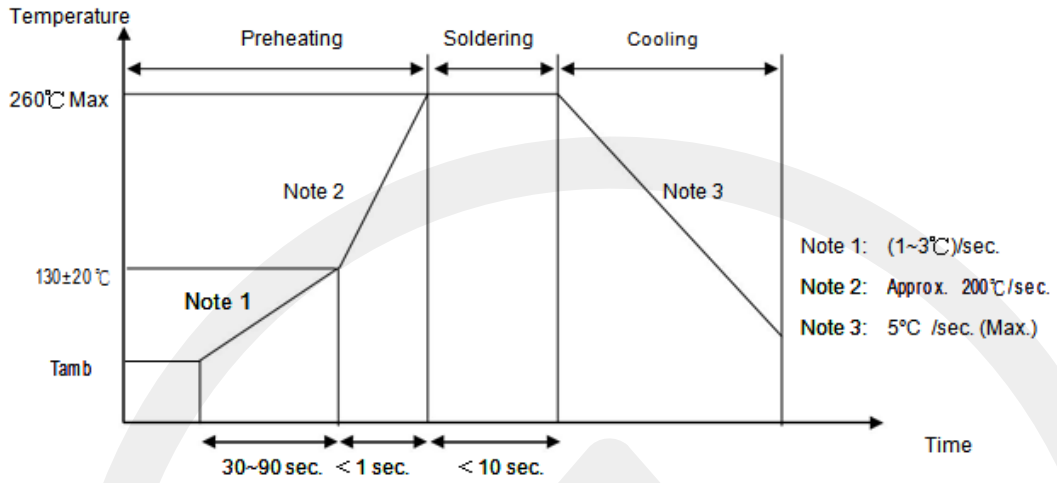
R - T Characteristic Curve





Soldering Recommendation

Wave Soldering Profile



Recommended Reworking Conditions With Soldering Iron

Item	Conditions
Temperature of Soldering Iron Tip	360℃ max.
Soldering Time	3 Sec. max.
Distance from Thermistor	10mm min

Soldering Recommendation

Item	Standard	Test conditions	Specifications
Tensile Strength of Terminals	IEC 60068-2-21	Gradually Applied specified force and keep the Unit Fixed for 10±1 sec. Terminal Diameter (mm) — Force (kg) d≤0.25 — 0.10 0.25<d≤0.3 — 0.25 0.3<d≤0.5 — 0.5	No Visible Damage
Bending Strength of Terminals	IEC 60068-2-21	Hold specimen and apply the force specified below to each lead. Bend the specimen to 900 , and then return to the original position. Repeat the procedure in the opposite direction. Terminal Diameter (mm) — Force (kg) d≤0.25 — 0.05 0.25<d≤0.3 — 0.125 0.3<d≤0.5 — 0.25	No Visible Damage
Solderability	IEC 60068-2-20	**245 ± 3°C, 3 ± 0.3 sec.**	At least 95% of terminal electrode is covered by new solder
Resistance to soldering Heat	IEC 60068-2-20	**260 ± 3°C, 10 ± 1 sec.**	No Visible Damage **△R25/R25 I ≤3%**
High Temperature Storage	IEC 60068-2-2	**100 ± 5°C, 1000 ± 24 hrs.**	No Visible Damage **△R25/R25 I ≤5%**
Damp Heat steady state	IEC 60068-2-78	**40 ± 2°C,90-95% RH, 1000 ± 24 hrs.**	No Visible Damage **△R25/R25 I ≤3%**
Rapid Change of Temp.	IEC 60068-2-14	The condition shown below shall be repeated 5 cycles Step — Temp.°C — period (minutes) 1 — -40 ± 5 — 30 ± 3 2 — Room Temp. — 5 ± 3 3 — 100 ± 5 — 30 ± 3 4 — Room Temp. — 5 ± 3	No Visible Damage **△R25/R25 I ≤3%**
Max. Power Dissipation	IEC 60539-14.26.3	**25 ± 5°C Pmax, 1000 ± 24hrs..**	No Visible Damage **△R25/R25 I ≤5%**

Packaging

Normal Packaging : 500 pcs / Poly bag

Bulk Packaging: In Carton Box

Storage Conditions

1. Storage Temperature : -10 °C to +40°C
2. Relative Humidity : ≤75%RH
3. Keep Away from Corrosive Atmosphere
4. Keep Away from Direct Sunlight
5. Period of Storage : 1 year

Manufacturing Precision
Delivering Trust