



NTC Thermistor Temperature Sensing/Compensation

PCB Mounted Radial type Thermistor Sensor for Temperature Compensation and Measurement

Registered office

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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
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Temperature Measurement

Thermistors serve a crucial role in temperature detection. For example, thermistor temperature detection can be used in fire alarms to detect fires based on a sudden change in temperature. Unlike photoelectric detectors or ionization alarms, thermistors only require heat to activate

Applications

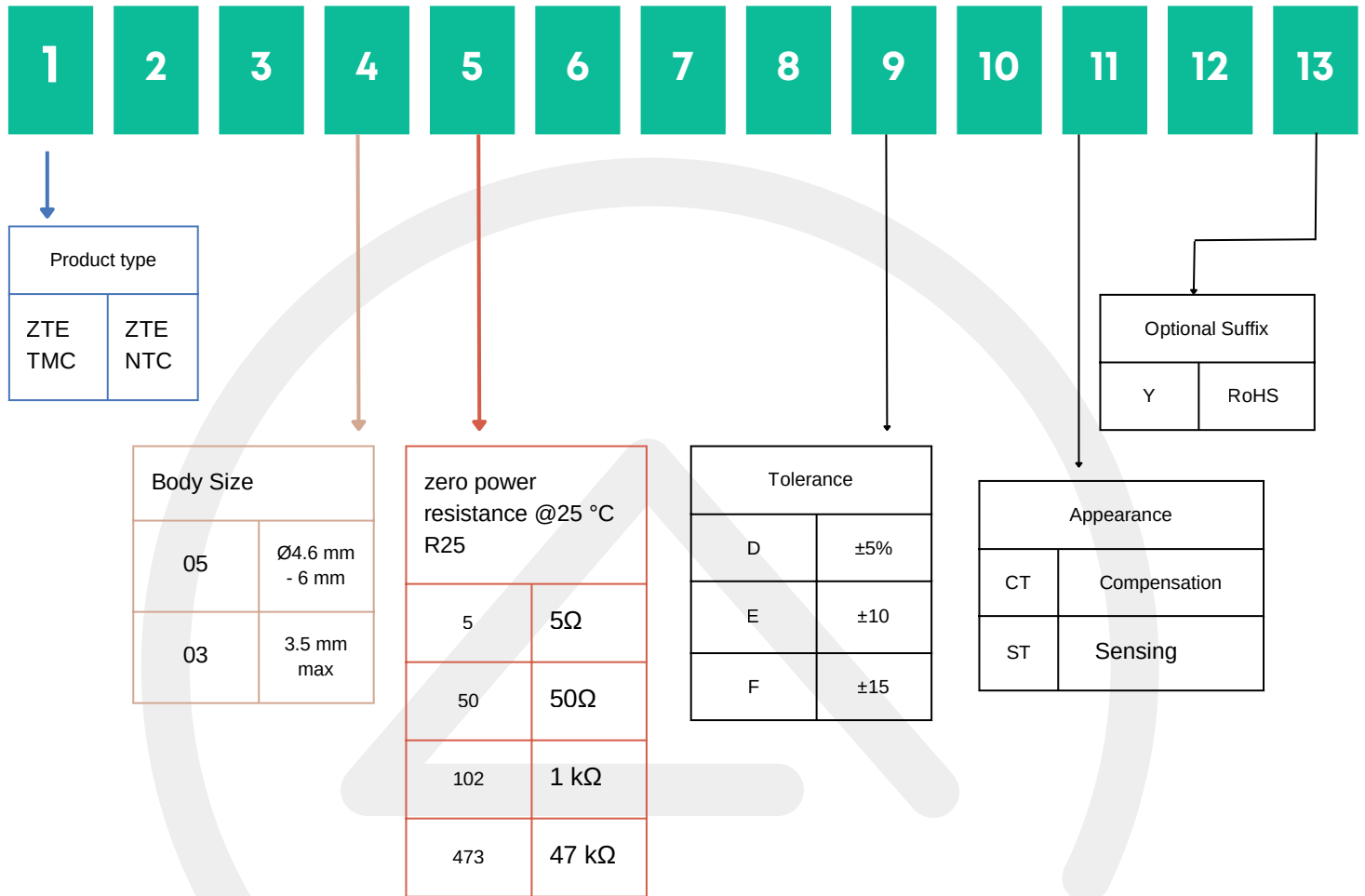
- Home appliances
- Computers
- Automotive Electronics
- Adapters
- Switch Mode Power Supply
- LED Drive Circuits



Features

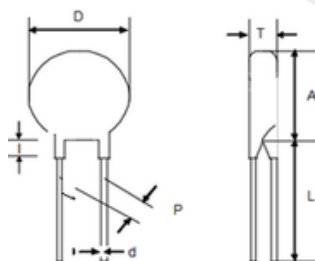
- RoHS compliant
- Halogen-Free (HF) series are available
- Body size: $\Phi 3\text{mm}$ to $\Phi 6.0\text{mm}$
- Radial lead without any Insulation
- Cost effective
- Operating temperature range: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$
- Wide resistance range

Part Numbering

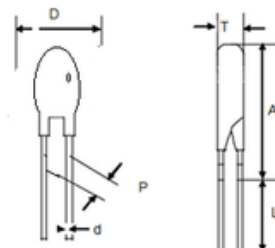


Structure and Dimensions

CT model (Compensation Type)



ST Type (Sensor Model)



(Unit: mm)



SERIES ZTE TMC	D max	P (mm)	d (mm)	l max	A max	L max	T max
CT model	6.5	5.0 + 0.5	0.5 + 0.1	3.0	8.0	32	5
ST model	3.5	3.0 + 0.5	0.5 + 0.1	-	6.0	32	3

Electrical Characteristics 1

Part No.	Zero Power Resistance at 25°C	Tolerance of R25	B(2550) Value	Tolerance of B value	Max. Power Dissipation at 25 °C	Dissipation factor	Thermal Time Constant	Operating Temperature Range	Safety Approvals	
	R25 (KΩ)	(±%)	(K)	(±%)	Pmax (mW)	Δ (mW/°C)	T (Sec.)	TL~TU (°C)	UL	cUL
ZTETMC05005□	5	10,15	2400	3	3450	~4 TO 5	~20	-30 ~ +125	Y	Y
ZTETMC05010□	10		2800						Y	Y
ZTETMC05015□	15		2800						Y	Y
ZTETMC05020□	20		2800						Y	Y
ZTETMC05025□	25		2900						Y	Y
ZTETMC05045□	45		3100						Y	Y
ZTETMC05050□	50		3100						Y	Y
ZTETMC05060□	60		3100						Y	Y
ZTETMC05085□	85		3200						Y	Y
ZTETMC05090□	90		3200						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	Thermal Time Constant	Operating Temperature Range	Safety Approvals	
	R25 (KΩ)	(±%)	(K)	(K)	(±%)	Pmax (mW)	Δ (mW/°C)	T (Sec.)	TL~TU (°C)	UL	cUL
ZTETMC0510 1□	100	10,15	25 /50	3200	3	3450	~4 TO 5	~20	-30 ~ +125	Y	Y
ZTETMC0512 1□	120			3300						Y	Y
ZTETMC0515 1□	150			3300						Y	Y
ZTETMC0520 1□	200			3500						Y	Y
ZTETMC0522 1□	220			3500						Y	Y
ZTETMC0525 1□	250			3500						Y	Y
ZTETMC0530 1□	300			3500						Y	Y
ZTETMC050 60□	470			3700						Y	Y
ZTETMC050 85□	500			3700						Y	Y
ZTETMC050 90□	680			3800						Y	Y

Electrical Characteristics 3

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	Thermal Time Constant	Operating Temperature Range	Safety Approvals	
	R25 (KΩ)	(±%)	(K)		(±%)	Pmax (mW)	Δ (mW/ °C)	T (Sec.)	TL~TU (°C)	UL	cUL
ZTETMC0570 1□	700	10,15	25 /50	3800	3	450	~4 TO 5	~20	-30 ~ +125	Y	Y
ZTETMC0510 2□	1000			3850						Y	Y
ZTETMC0515 2□	1500			3900						Y	Y
ZTETMC0520 2□	2000			4000						Y	Y
ZTETMC0522 2□	2200			4000						Y	Y
ZTETMC0525 2□	2500			4000						Y	Y
ZTETMC0530 2□	3000			4000						Y	Y
ZTETMC0533 2□	3300			4000						Y	Y
ZTETMC054 02□	4000			4000						Y	Y
ZTETMC0547 2□	4700			4050						Y	Y

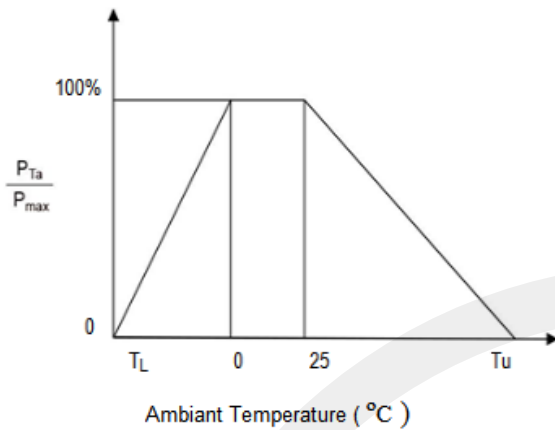
Electrical Characteristics 4

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	Thermal Time Constant	Operating Temperature Range	Safety Approvals	
	R25 (KΩ)	(±%)		(K)	(±%)	Pmax (mW)	Δ (mW/°C)	T (Sec.)	TL~TU (°C)	UL	cUL
ZTETMC055 02□	5000			3950						Y	Y
ZTETMC056 02□	6000			4050						Y	Y
ZTETMC0568 2□	6800			4050						Y	Y
ZTETMC058 02□	8000			4050						Y	Y
ZTETMC0510 3□	10000			4050						Y	Y
ZTETMC0512 3□	12000			4050						Y	Y
ZTETMC0515 3□	15000			4050						Y	Y
ZTETMC0520 3□	20000	10,15	25 /50	4200	3	450	~4 TO 5	~20	-30 ~ +125	Y	Y
ZTETMC053 03□	30000			4250						Y	Y
ZTETMC0547 3□	47000			4300						Y	Y
ZTETMC0 5503□	50000			4300							
ZTETMC0568 3□	68000			4350							
ZTETMC0510 4□	100000			4400							
ZTETMC0515 4□	150000			4500							
ZTETMC0 5204□	200000			4600							
ZTETMC0522 4□	220000			4600							

Note 1 : □ = Tolerance of R25

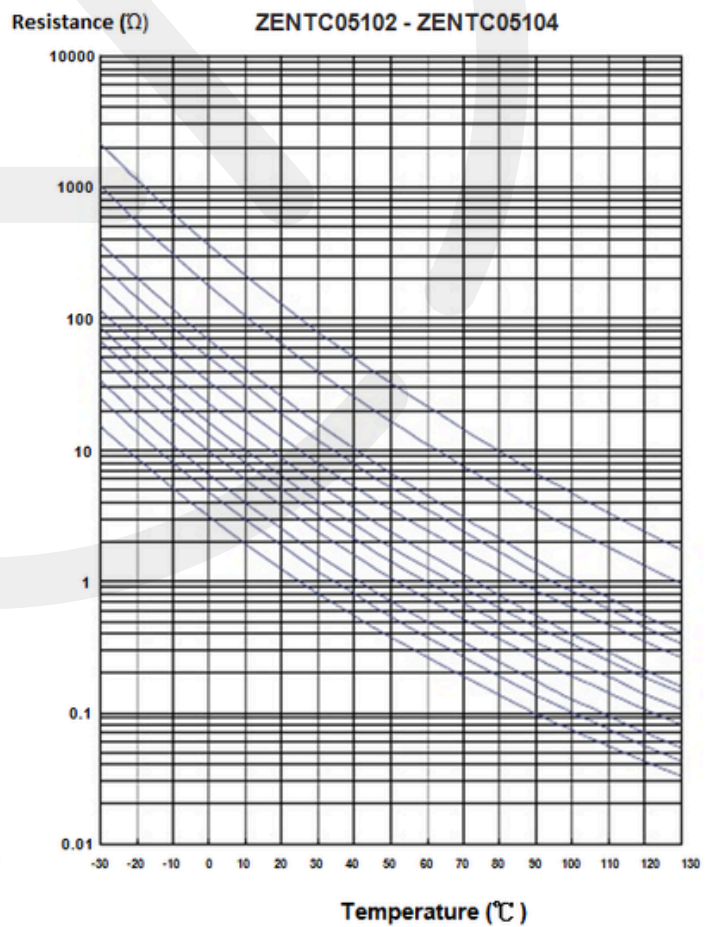
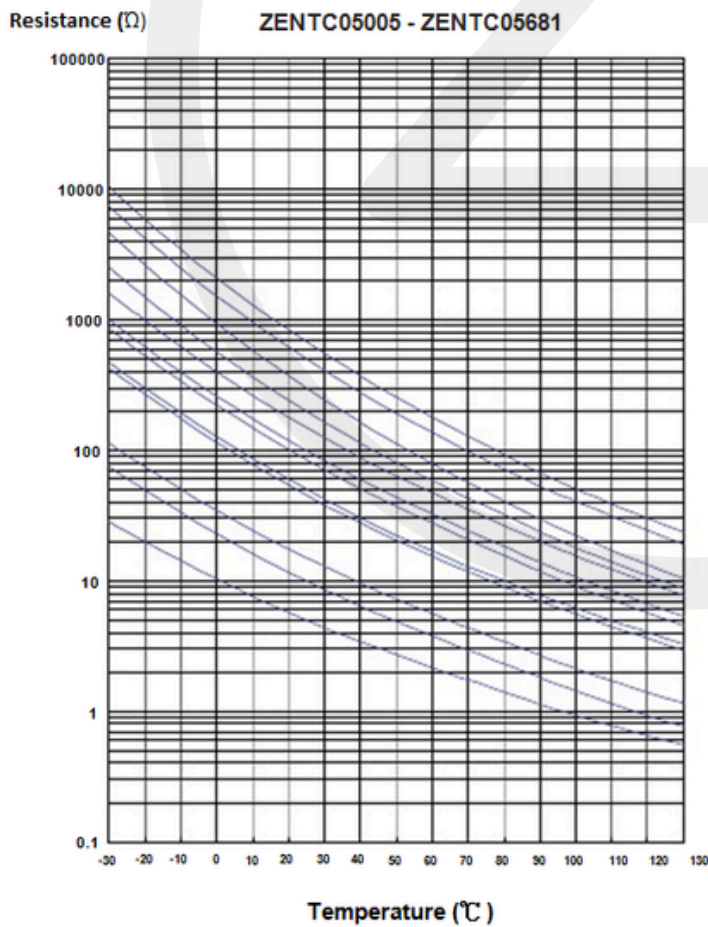
Note 2: Special FEASIBLE Mechanical and Electrical specifications are available upon request.

Maximum Power Dissipation Derating Curve



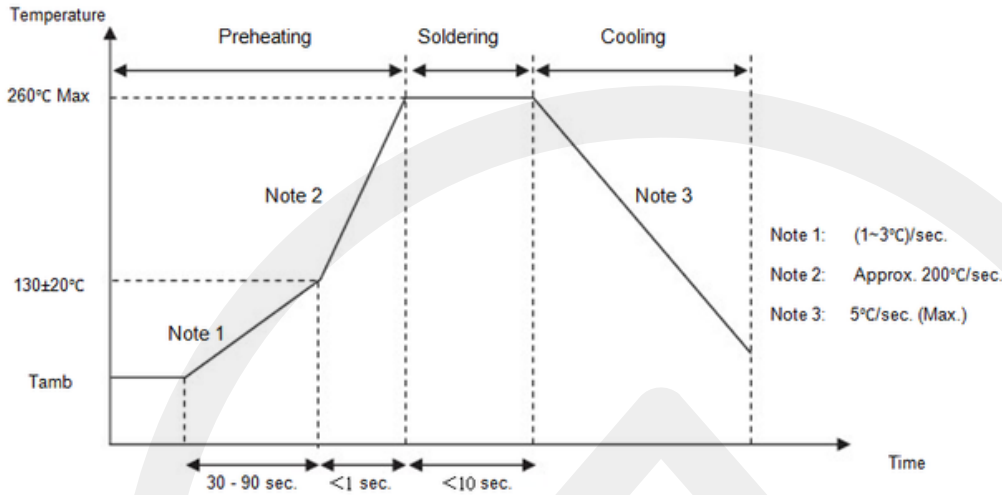
TU: Maximum operating Temperature (°C)
 TL : Minimum operating temperature (°C)
 For example:
 Ambient temperature(T_a) = 55°C
 Maximum operating temperature(TU) = 125°C
 $P_{Ta} = (T_u - T_a) / (T_u - 25) \times P_{max} = 70\% P_{max}$

R - T Characteristic Curve



Soldering Recommendation

Soldering Recommendation



Caution: It had better to keep the minimum distance as 6mm between the bottom of the thermistor body and PCB surface to prevent the component damage.

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

Reliability Measurement

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) 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 90°, and then return to the original position. Repeat the procedure in the opposite direction. Terminal Diameter (mm) Force (kg) 0.3<d≤0.5 0.25	No Visible Damage
Insulation Test	MIL-STD-202F-METHOD 302	1000 VDC ,1 min	> 500 MΩ
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 $\Delta R_{25}/R_{25} \leq 3\%$
High Temperature Storage	IEC 60068-2-2	125 + 5°C, 1000 + 24 hrs.	No Visible Damage $\Delta R_{25}/R_{25} \leq 5\%$
Damp Heat steady state	IEC 60068-2-78	40 + 2°C, 90-95% RH, 1000 + 24 hrs.	No Visible Damage $\Delta R_{25}/R_{25} \leq 3\%$
Rapid Change of Temp.	IEC 60068-2-14	The condition shown below shall be repeated 5 cycles Step period (minutes) Temp.°C 30 + 32 -30 + 5 Temp. 5 + 33 Room 30 + 34 125 + 5 Temp. 5 + 3 Room	No Visible Damage $\Delta R_{25}/R_{25} \leq 3\%$
Max. Power Dissipation	IEC 60539-14.26.3	25 + 5°C Pmax, 1000 + 24hrs..	No Visible Damage $\Delta R_{25}/R_{25} \leq 5\%$

Packaging

Normal Packaging : 250/500 pcs in Poly bag

Bulk Packaging: In Carton Box

Storage Conditions

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



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