



CG Series

Glass-Encapsulated NTC Thermistors for Temperature Compensation

◆ Product Description

The CG Series is a glass-encapsulated, single-ended leaded NTC thermistor designed for temperature compensation applications. Featuring a negative temperature coefficient (NTC) characteristic, its resistance decreases as temperature increases. The series offers excellent high-temperature resistance, superior stability, and high accuracy, making it ideal for temperature sensing and circuit temperature compensation in demanding operating environments.

◆ Features

1. RoHS compliant
2. Glass-encapsulated construction for excellent high-temperature resistance
3. Body size: $\Phi 2.5$ mm
4. Radial lead with resin encapsulation
5. Operating temperature range: -40°C to $+250^{\circ}\text{C}$
6. Safety certifications: UL / cUL

◆ Applications

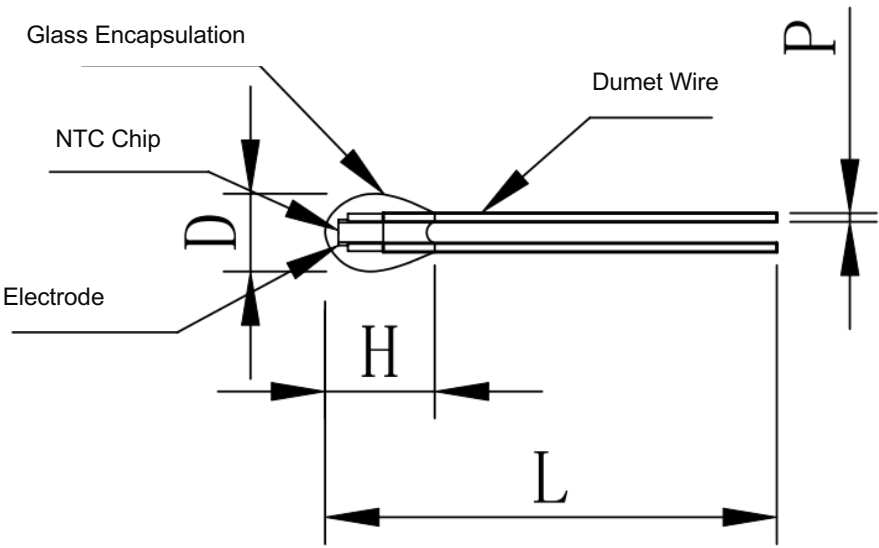
1. Home appliances
2. Automotive electronics
3. Liquid level sensors
4. Electronic calendars

◆ Part Numbering System

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15						
Product Type		Resistance Value			Resistance Tolerance	B Constant				B Constant Tolerance	B Constant Measurement		Package Type		Body Diameter		Overall Length			
CG	Glass Enca psulat ed	Standard Specifications of Zero Power e.g.: CD × 10E 103:10 × 103 = 10KΩ 473:47 × 103 = 47KΩ 502:50 × 102 = 5KΩ			A:±1.5%; B: ±0.1%; C: ±0.25%; D: ±0.5%; E: ±0.75%; F:±1%; G:±2%; H:±3%; I:±4%; J:±5%; K:±10%; L:±15%; M:±20%; N:±25%; X: ±2.5%; R: Others; U:±0.6%; T: ±0.44% (Equivalent to ±0.1°C at R25); S: Special Temperature Point	3435	3435K			A	±1.5%	A	25°C&85°C		A	Axial	A	2.5 mm	A	No code definition. The code indicates the length unit and is only used to distinguish different length options.
						3950	3950K			F	±1%	B	25°C&50°C		R	Radial				
						4250	4250K			H	±3%	C	0°C&100°C							
												D	100°C &200°C							

YAGEO SENSOR

◆ Structure and Dimension

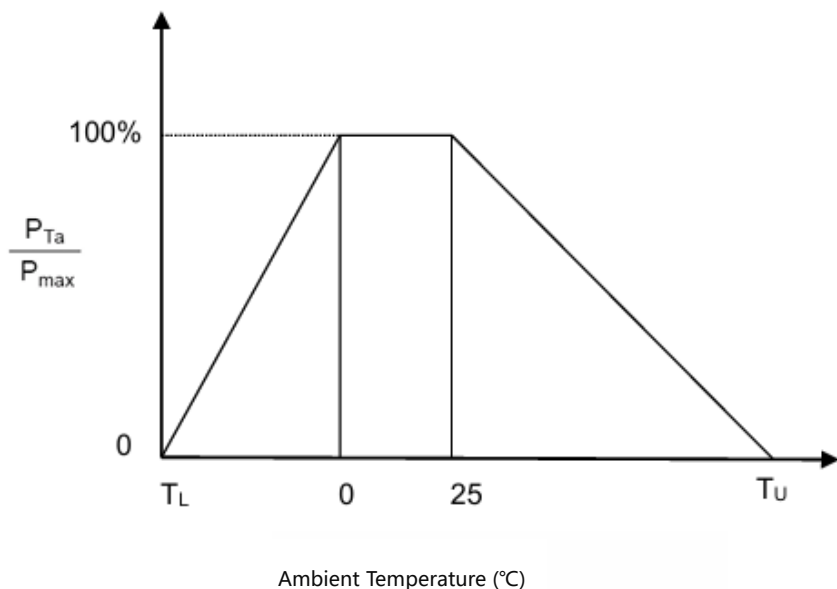


Series	D	H	L	d.
CG	2.5±0.2	3.8±0.5	≥40	0.30±0.02

◆ Electrical Characteristics

Part Number	Zero-Power Resistance	B Constant (25/50)	Resistance– Temperature Characteristic Curve	Maximum Power Rating @25°C	Dissipation Constant	Thermal Time Constant	Operating Temperature Range	Safety Approval	
	(KΩ)	(K)	--	P _{max} (mW)	Δ (mW/°C)	T (Sec.)	T _L ~T _U (°C)	UL	cUL
CG332G3970HC	R100=3.3K±2%	B0/100=397 0±3%	A	7	Approx. 1.4	Approx. 14	-40~ +250	✓	✓
CG332H3970HC	R100=3.3K±3%							✓	✓
CG332J3970HC	R100=3.3K±5%							✓	✓
CG503G3970HC	R25=50K±2%							✓	✓
CG503H3970HC	R25=50K±3%							✓	✓
CG503J3970HC	R25=50K±5%							✓	✓
CG104G4300HD	R25=100K±2%	B100/200=4 300±3%	B					✓	✓
CG104H4300HD	R25=100K±3%							✓	✓
CG104J4300HD	R25=100K±5%							✓	✓
CG551G4300HD	R200=0.55K±2%							✓	✓
CG551H4300HD	R200=0.55K±3%							✓	✓
CG551J4300HD	R200=0.55K±5%							✓	✓
CG103G3975AA	R25=10K±2%	B25/85=397 5±1.5%	C					✓	✓
CG103H3975AA	R25=10K±3%							✓	✓
CG103J3975AA	R25=10K±5%							✓	✓

◆ Maximum Power Derating Curve



T_U : Upper Operating Temperature Limit (°C)

T_L : Lower Operating Temperature Limit (°C)

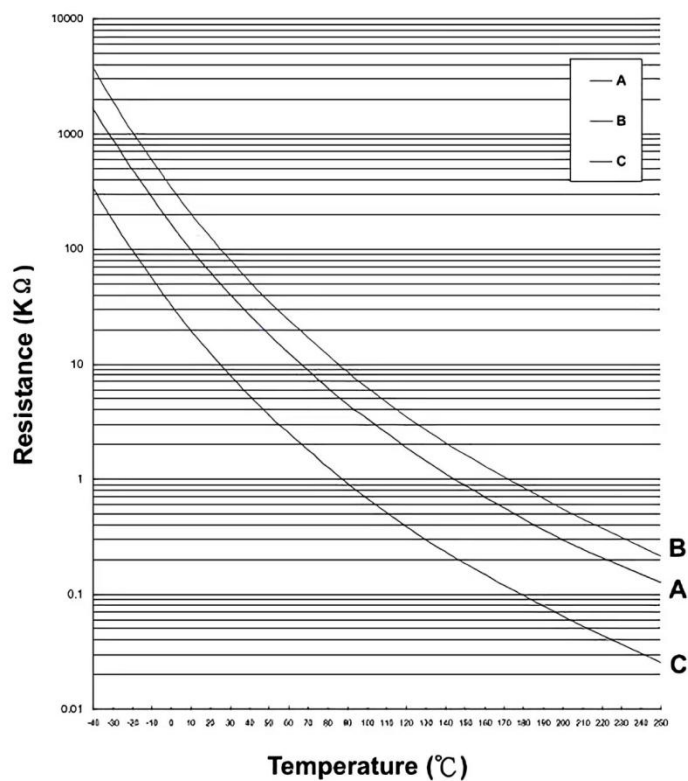
For example:

Ambient Temperature (T_a) = 60°C

Upper Operating Temperature Limit (T_U) = 200°C

$P_{Ta} = (T_U - T_a) / (T_U - 25) \times P_{max} = 80\% P_{max}$

◆ Resistance–Temperature Characteristic Curve (Typical)



◆ Reliability

Test Item	Test Standard	Test Conditions/Method	Performance Requirements															
High Temperature Storage Test	IEC 60068-2-2	TU ± 5°C x 1000 ± 24 hour	No visual damage ΔR25/R25 ≤ 5 %															
Steady-State Damp Heat Test	IEC 60068-2-78	40 ± 2°C, 90~95% RH, 1000 ± 24 hour	No visual damage ΔR25/R25 ≤ 3 %															
Thermal Shock Test	IEC 60068-2-14	Subject the device to five cycles on a PCB under the conditions specified in the table below. <table><tr><th>Step</th><th>Temperature (°C)</th><th>Cycle (min)</th></tr><tr><td>1</td><td>T_L±5</td><td>30±3</td></tr><tr><td>2</td><td>room temperature</td><td>5±3</td></tr><tr><td>3</td><td>T_U±5</td><td>30±3</td></tr><tr><td>4</td><td>room temperature</td><td>5±3</td></tr></table>	Step	Temperature (°C)	Cycle (min)	1	T _L ±5	30±3	2	room temperature	5±3	3	T _U ±5	30±3	4	room temperature	5±3	No visual damage ΔR25/R25 ≤ 3 %
Step	Temperature (°C)	Cycle (min)																
1	T _L ±5	30±3																
2	room temperature	5±3																
3	T _U ±5	30±3																
4	room temperature	5±3																
Maximum Power Dissipation	IEC 60539-1 4.26.3	25 ± 5°C, P _{max} , 1000 ± 24 hour	No visual damage ΔR25/R25 ≤ 5 %															

◆ Storage Conditions

● Storage Environment

1. Storage temperature: -10°C to $+40^\circ\text{C}$
2. Relative humidity: $\leq 75\%$ RH
3. Store the product in a clean, dry environment. Avoid exposure to corrosive gases and direct sunlight.

● Storage Period: 12 months