SEMITEC

GT-2 & NT-4 Comparison Chart

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EN: KH - SUS

For Reference Only

1. GT-2 and NT-4 comparison chart on Table 1 below

Product name		GT-2	NT-4
Rating	Dissipation Factor	Appx 0.6mW/℃ (in still air)	Appx <mark>0.8</mark> mW/℃ (in still air)
	Thermal Time Constant	appx 7 sec (in still air)	Appx <mark>6 sec</mark> (in still air)
	Operating Temp Range	-50℃ \sim +300℃	−50°C \sim +300°C
	Max Power Dissipation	3mW at 25℃ (Temp rises appx 5℃ due to self-heating)	<mark>4</mark> mW at 25℃ (Temp rises appx 5℃ due to self-heating)
Appearance and Dimensions	Appearance	C B Glass Lead Frame	C B Glass Dumet Wire
	Dimension A	1.35mm ±0.15mm	1.25 mm ± 0.30 mm
	Dimension B	3.0mm ±1.0mm	2.5 mm ± 0.4 mm
	Dimension C	48.0mm ±1.0mm	70.0 mm ± 2.0 mm
	Dimension D	□ (0.18mm) × (0.15mm)	φ 0.20 mm ± 0.02 mm
Glass Part	Interior Structure	Chip Electrode (Au or Ag) Au coated Glass Lead Frame	Chip Electrod Contact Paste Glass(※) Dumet Wire ※ Glass is the same as GT-2

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Table 1. GT-2 and NT-4	Comparison Chart
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Product Name		GT-2	NT-4	
Reliability	Test Criteria	Top Row: Testing Condition		
		Bottom Row: Review Standard		
Electrical	Insulation	Apply DC 500V		
Properties	Resistance	100MΩ or more		
	Voltage	Apply AC 500V for 1 minute		
	Tolerance	No more than 1mA of current		
Mechanical	Terminal Tensile	Pull the terminal towards the axis with 1N pull and hold for 10 seconds		
Properties	Strength	Within ΔR25±2%, ΔB25/85±2%		
	Terminal Bend	Apply 0.5N load to the lead frame (dumet wire)		
		Bend 90°, then bend it back to original position. Bend 90° once in the opposite direction too		
		Within ΔR25±2%, ΔB25/85±2%		
	Free Fall	Drop from 1m height on maple wood board 3 times		
		Within $\Delta R_{25}\pm 2\%$, $\Delta B_{25/85}\pm 2\%$		
	Soldering	Apply the appropriate flux and dip it in $+245^{\circ}$ solder bath for 2 to 3 seconds		
	Properties	Solder deposit ratio of 75% or more	Solder deposit ratio of 90% or more	
	Solder Heat Res	Dip the lead frame (dumet wire) in solder bath of $+260^{\circ}$ for 10 senconds		
	(soldering flow)	Within ΔR25±2%, ΔB25/85±2%		
ent Jce	Low Temp	-50℃ / 1000hr	-55 ℃ / 1000hr	
mar		$\Delta R_{25} \pm 2\%$, $\Delta B_{25/85} \pm 2\%$		
Environment Performance	High Temp	+300℃ / 1000hr		
Pe		Within ΔR25±2%, ΔB25/85±2%		
	Thermal Cycle	-30℃ 5min→Rom Temp 3min→+200℃ 5min	→Room Temp 3min/ 5cycle	
×1 –	(Air)	Within $\Delta R25\pm 2\%$, $\Delta B25/85\pm 2\%$		
	Thermal Shock		-30℃ 3min→+150℃ 3min / 1000cycles	
	(Liquid)		Within $\Delta R25\pm 2\%$, $\Delta B25/85\pm 2\%$	
×2 –	Damp Heat	+70℃、RH90~95% / 1000hr		
		Within $\Delta R25\pm 2\%$, $\Delta B25/85\pm 2\%$		
	Damp Heat	+70℃、RH90~95%、DC 0.1mA / 1000hr	+ <mark>85</mark> ℃、RH <mark>85</mark> %、DC 0.1mA / 1000hr	
	(Load)	Within $\Delta R_{25}\pm 2\%$, $\Delta B_{25/85}\pm 2\%$		
×3 –	Pressure		+121°C、2 atm、RH90~100% /100hr	
	Cooker		Within ΔR25±2%, ΔB25/85±2%	

 $\times 1$ NT-4 goes through more severe thermal shock tests than the thermal cycle

%2 NT-4 goes through more severe damp heat load test than the damp heat test

%3 NT-4 goes through the pressure cooker test to put it at a higher standard than the GT-2