

# DATA SHEET

**PRODUCT** NTC Thermistor

**SERIES** JCR 03 Series

**PART NO.**

**QUICK  
REFERENCE  
DATA**

PARAMETER	VALUE	UNIT
Size	03	mm
Resistance Value R25	10~ 330	KΩ
B25/50	3380~4250	K
B25/85	3435~4250	K

**ISSUE DATE** 2023/2/4

**REVISION DATE** 2023/2/4

**REFERENCE NO.**

**RoHS COMPLIANCE ITEM**

**Halogen Free**

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# NTC Sensor STD. JCR03 series



## Features

RoHS / Halogen-Free (HF) compliant  
Body size :  $\varnothing 3\text{mm}$   
Operating temperature range :  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$   
Wide resistance range  
Qualified based on AEC-Q200  
Agency recognition: UL / TUV

符合 RoHS / Halogen-Free (HF) 規範  
尺寸 :  $\varnothing 3\text{mm}$   
工作溫度範圍 :  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$   
電阻範圍廣  
符合 AEC-Q200  
安規認證: UL / TUV

## Applications

Home appliances  
Office automation  
Automotive  
Switch mode power supplies  
Adapters  
Security

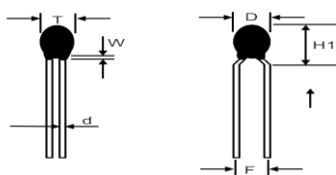
家電  
OA 設備  
汽車  
開關模式電源  
適配器  
安防設備

## How to Order

Part Number Code																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
J	C	R	1	0	3	F	3	4	4	F	B	5	2	P	U	5	0	3	B
	①			②		③		④		⑤	⑥	⑦	⑧	⑨		⑩		Ⓐ	Ⓑ

①	Product Type	JCR03 series	⑤	Tolerance of B Value	F = $\pm 1\%$ G = $\pm 2\%$ H = $\pm 3\%$ J = $\pm 5\%$	⑨	Lead Style	E = Outside Kink Lead G = Winder Kink Lead
②	Zero Power Resistance @25°C (R25)	502 = 5K $\Omega$ 103 = 10K $\Omega$ 474 = 470K $\Omega$	⑥	Definition of B Value	A = 25/50 B = 25/85	⑩	Packaging	U5 = L:25mm for Bulk AW = H0:16mm for Ammo
③	Tolerance of R25	F = $\pm 1\%$ G = $\pm 2\%$ H = $\pm 3\%$ J = $\pm 5\%$ K = $\pm 10\%$	⑦	Lead Diameter	5 = 0.5 mm	Ⓐ	Body Size	03 = 3 mm
④	B Value	344 = 3435 K 405 = 4050 K	⑧	Lead Spacing	2 = 2.5 mm 4 = 3.5 mm	Ⓑ	Optional Suffix	Internal Control Code

## Structure and Dimension



$\varnothing 3\text{mm}$	4.0	3.5	2.5	0.5	3.0	10.0
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Unit in mm

Body Size	Dmax.	Tmax.	F $\pm 0.5$	d $\pm 0.05$	Wmax	H1max
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## Electrical Characteristics

Part No	Zero Power Resistance at 25°C	Tolerance of R25	B25/50 Value	Tolerance of B Value	Dissipation Factor	Thermal Time Constant	Max. Power Rating at 25°C	Safety Approvals	
	R 25 (Ω)	(± %)	( K )	(± %)	δ(mW/°C)	τ (sec.)	(mW)		
JCR103X338YA	10,000	10,5,3,2,1	3380	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR103X410YA	10,000	10,5,3,2,1	4100	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR473X395YA	47,000	10,5,3,2,1	3950	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR503X395YA	50,000	10,5,3,2,1	3950	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR104X395YA	100,000	10,5,3,2,1	3950	5,3,2,1	Approx. 2.5	Approx. 18	150		
JCR104X425YA	100,000	10,5,3,2,1	4250	5,3,2,1	Approx. 2.5	Approx. 18	150		

Part No	Zero Power Resistance at 25°C	Tolerance of R25	B25/85 Value	Tolerance of B Value	Dissipation Factor	Thermal Time Constant	Max. Power Rating at 25°C	Safety Approvals	
	R 25 (Ω)	(± %)	( K )	(± %)	δ(mW/°C)	τ (sec.)	(mW)		
JCR102X360YB	1,000	10,5,3,2,1	3600	5,3,2,1	Approx. 2.5	Approx. 18	150		
JCR472X390YB	4,700	10,5,3,2,1	3900	5,3,2,1	Approx. 2.5	Approx. 18	150		
JCR502X345YB	5,000	10,5,3,2,1	3450	5,3,2,1	Approx. 2.5	Approx. 18	150		
JCR682X390YB	6,800	10,5,3,2,1	3900	5,3,2,1	Approx. 2.5	Approx. 18	150		
JCR103X344YB	10,000	10,5,3,2,1	3435	5,3,2,1	Approx. 2.5	Approx. 18	150	■	■
JCR103X398YB	10,000	10,5,3,2,1	3980	5,3,2,1	Approx. 2.5	Approx. 18	150	■	■
JCR333X398YB	33,000	10,5,3,2,1	3980	5,3,2,1	Approx. 2.5	Approx. 18	150		
JCR473X409YB	47,000	10,5,3,2,1	4090	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR503X409YB	50,000	10,5,3,2,1	4090	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR104X395YB	100,000	10,5,3,2,1	3950	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR104X408YB	100,000	10,5,3,2,1	4080	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR104X419YB	100,000	10,5,3,2,1	4190	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR104X425YB	100,000	10,5,3,2,1	4250	5,3,2,1	Approx. 2.5	Approx. 18	150		
JCR104X436YB	100,000	10,5,3,2,1	4360	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR204X406YB	200,000	10,5,3,2,1	4055	5,3,2,1	Approx. 2.5	Approx. 18	150	■	
JCR334X398YB	330,000	10,5,3,2,1	3980	5,3,2,1	Approx. 2.5	Approx. 18	150		

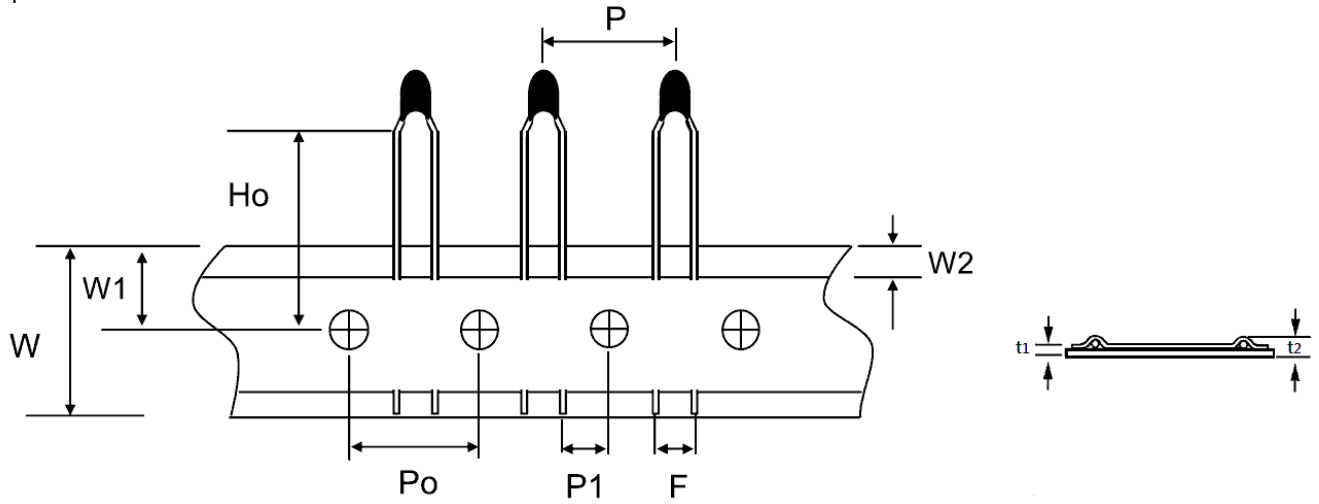
※ X : R Tolerance, Y : B Value Tolerance

## Reliability-NTC Thermistor JCR

Item	Standard	Test condition	Specifications															
Terminal pull strength	IEC 60068-2-21	<p>Gradually applying the force specified and keeping the unit fixed for 10±1 sec.</p> <table border="1"> <thead> <tr> <th>Terminal diameter (mm)</th> <th>Force (Kg)</th> </tr> </thead> <tbody> <tr> <td><math>d \leq 0.25\text{mm}</math></td> <td>1N (0.102Kg)</td> </tr> <tr> <td><math>0.25\text{mm} &lt; d \leq 0.35\text{mm}</math></td> <td>2.5N (0.255Kg)</td> </tr> <tr> <td><math>0.35\text{mm} &lt; d \leq 0.50\text{mm}</math></td> <td>5N (0.510Kg)</td> </tr> <tr> <td><math>0.50\text{mm} &lt; d \leq 0.80\text{mm}</math></td> <td>10N (1.02Kg)</td> </tr> </tbody> </table>	Terminal diameter (mm)	Force (Kg)	$d \leq 0.25\text{mm}$	1N (0.102Kg)	$0.25\text{mm} < d \leq 0.35\text{mm}$	2.5N (0.255Kg)	$0.35\text{mm} < d \leq 0.50\text{mm}$	5N (0.510Kg)	$0.50\text{mm} < d \leq 0.80\text{mm}$	10N (1.02Kg)	No visible damage					
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Bending Strength of Terminals	IEC 60068-2-21	<p>Hold specimen and apply the force specified below to each lead. Bend the specimen to 90°, then return to the original position. Repeat the procedure in the opposite direction.</p> <table border="1"> <thead> <tr> <th>Terminal diameter (mm)</th> <th>Force (Kg)</th> </tr> </thead> <tbody> <tr> <td><math>d \leq 0.25\text{mm}</math></td> <td>0.5N (0.051Kg)</td> </tr> <tr> <td><math>0.25\text{mm} &lt; d \leq 0.35\text{mm}</math></td> <td>1.25N (0.128Kg)</td> </tr> <tr> <td><math>0.35\text{mm} &lt; d \leq 0.50\text{mm}</math></td> <td>2.5N (0.255Kg)</td> </tr> <tr> <td><math>0.50\text{mm} &lt; d \leq 0.80\text{mm}</math></td> <td>5N (0.510Kg)</td> </tr> </tbody> </table>	Terminal diameter (mm)	Force (Kg)	$d \leq 0.25\text{mm}$	0.5N (0.051Kg)	$0.25\text{mm} < d \leq 0.35\text{mm}$	1.25N (0.128Kg)	$0.35\text{mm} < d \leq 0.50\text{mm}$	2.5N (0.255Kg)	$0.50\text{mm} < d \leq 0.80\text{mm}$	5N (0.510Kg)	No visible damage					
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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±5°C, 10±1 sec	No visible damage $\Delta R_{25}/R_{25} \leq \pm 5\%$															
High temperature storage	IEC 60068-2-2	125±2°C, 1000hrs	No visible damage $\Delta R_{25}/R_{25} \leq \pm 5\%$															
Damp Heat Steady State	IEC 60068-2-78	40±2°C, 90~95% RH, 1000±24hrs	No visible damage $\Delta R_{25}/R_{25} \leq \pm 5\%$															
Rapid Change of Temperature	IEC 60068-2-14	<p>The conditions shown below shall be repeated 5 cycles.</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Period (minutes)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±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>125±5</td> <td>30±3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>5±3</td> </tr> </tbody> </table>	Step	Temperature (°C)	Period (minutes)	1	-40±5	30±3	2	Room temperature	5±3	3	125±5	30±3	4	Room temperature	5±3	No visible damage $\Delta R_{25}/R_{25} \leq \pm 5\%$
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1	-40±5	30±3																
2	Room temperature	5±3																
3	125±5	30±3																
4	Room temperature	5±3																
Life Test	IEC 60539-1 4.26.3	25±5°C, Pmax, 1000hrs	No visible damage $\Delta R_{25}/R_{25} \leq \pm 5\%$															

# Packaging

## Tape and Reel Dimensions



Unit in mm

Symbols	P	Po	P1	F	Ho	W	Wo	W1	W2	t1	t2
Nor.	12.7	12.7	5.1	2.5	18	18 <sup>+1.0</sup>	12	9.0	2.0	0.6	1.2
Tol.	±1.0	±0.3	±1.0	±0.5	±1.0	<sup>+1.0</sup> <sub>-0.5</sub>	min	±0.5	max	±0.05	max

