

# DATA SHEET

**PRODUCT** NTC Thermistor

**SERIES** JCR 05 Series

**PART NO.**

**QUICK REFERENCE DATA**

PARAMETER	VALUE	UNIT
Size	05	mm
Resistance Value R25	6.8~ 470	KΩ
B25/50	4050~5200	K
B25/85	3750~5000	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. JCR05 series



## Features

RoHS / Halogen-Free (HF) compliant  
Body size: Ø5mm  
Operating temperature range: -40°C~+125°C  
Wide resistance range  
Agency recognition: UL / TUV

符合 RoHS / Halogen-Free (HF)規範  
尺寸：Ø5mm  
工作溫度範圍：-40°C ~+ 125°C  
電阻範圍廣  
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

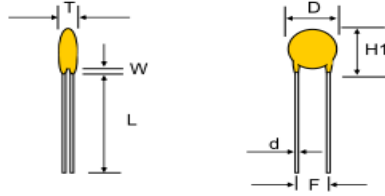
## How to Order

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	5	Y
①			②			③	④			⑤	⑥	⑦	⑧	⑨	⑩			Ⓐ	Ⓑ

①	Product Type	JCR05 series	⑤	Tolerance of B Value	F = ±1% H = ±3% J = ±5%	⑨	Lead Style	E = Outside Kink Lead G = Winder Kink Lead P = Straight Lead
②	Zero Power Resistance @25°C (R25)	502 = 5KΩ 103 = 10KΩ 474 = 470KΩ	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 = ±1% H = ±3% J = ±5% K = ±10%	⑦	Lead Diameter	5 = 0.5 mm	Ⓐ	Body Size	05 = 5 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

## Structure and Dimensions



( Unit : mm )

Body Size	D max.	T max.	F±1.0	d±0.05	L min	W max	H1 max
Φ 5 mm	6.0	3.5	3.5	0.5	25.0	3.0	8.0

# 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)	
JCR682X405YA	6,800	10,5,3,1	4050	5,3,1	Approx. 7.2	Approx. 18	450	■
JCR103X405YA	10,000	10,5,3,1	4050	5,3,1	Approx. 7.2	Approx. 18	450	■ ■
JCR103X410YA	100,000	10,5,3,1	4100	5,3,1	Approx. 7.2	Approx. 18	450	■
JCR104X440YA	100,000	10,5,3,1	4400	5,3,1	Approx. 7.2	Approx. 18	450	■ ■
JCR474X520YA	470,000	10,5,3,1	5200	5,3,1	Approx. 7.2	Approx. 18	450	■ ■

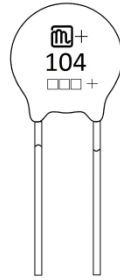
Part No	Zero Power Resistance at 25°C	Tolerance of R25	B25/85 Value	Tolerance of B Value	Dissipation Factor	Thermal Time Constant	Max. Power Rating at 25°C	Safety Approvals
	R 25 (Ω)	(± %)	(K)	(± %)	δ(mW/°C)	τ (sec.)	(mW)	
JCR102X375YB	1,000	10,5,3,1	3750	5,3,1	Approx. 7.2	Approx. 18	450	
JCR202X385YB	2,000	10,5,3,1	3850	5,3,1	Approx. 7.2	Approx. 18	450	
JCR252X390YB	2,500	10,5,3,1	3900	5,3,1	Approx. 7.2	Approx. 18	450	
JCR332X390YB	3,000	10,5,3,1	3900	5,3,1	Approx. 7.2	Approx. 18	450	
JCR502X405YB	5,000	10,5,3,1	4050	5,3,1	Approx. 7.2	Approx. 18	450	
JCR303X430YB	30,000	10,5,3,1	4300	5,3,1	Approx. 7.2	Approx. 18	450	
JCR204X470YB	200,000	10,5,3,1	4700	5,3,1	Approx. 7.2	Approx. 18	450	
JCR224X500YB	220,000	10,5,3,1	5000	5,3,1	Approx. 7.2	Approx. 18	450	




※ 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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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 $\Delta R_{25}/R_{25} \leq \pm 5\%$															

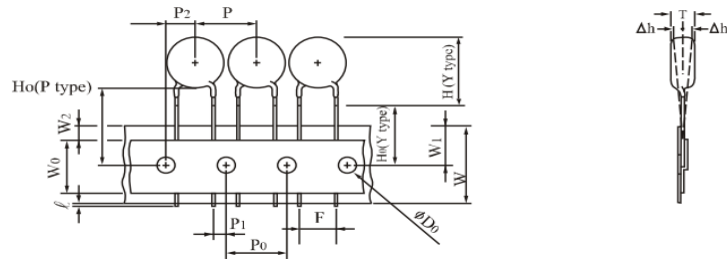
## Marking



+: Taiwan Joyin  
\*: Dongguan Joyin  
+: Internal code

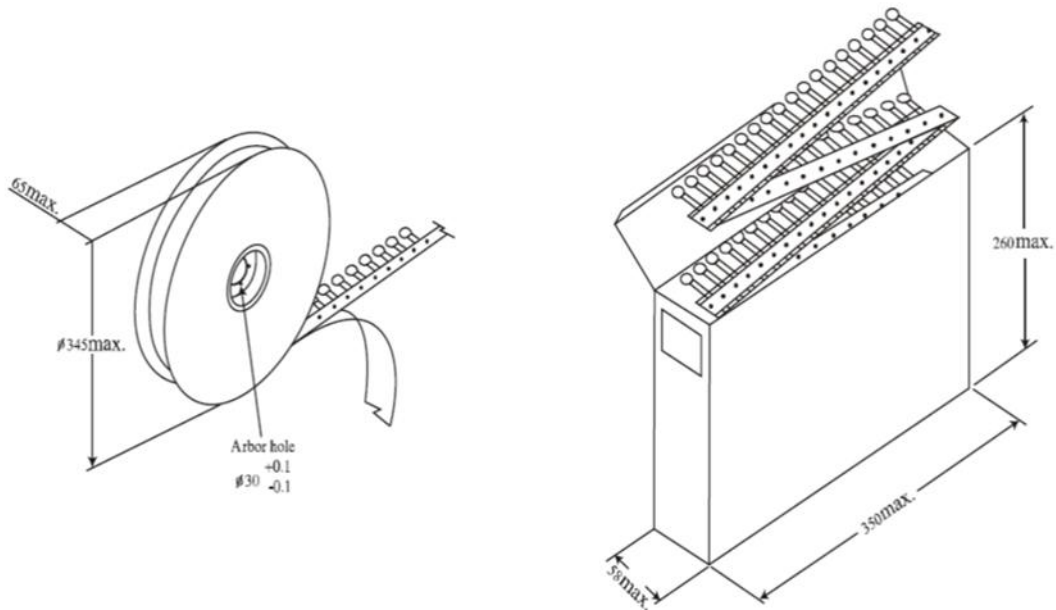
## Tape and Reel

1/2" pitch



Symbols	Item	JCR05
l	Cut out length	1.1 mm max.
Ho(P type)	Height of component from hole center	16.0 ~ 21.0 mm
Δh	Front to back deviation	0± 2.0 mm
W	Carrier tape width	18 <sup>+1.5</sup> mm
W0	Hold down tape width	10.0 mm
W1	Sprocket hole position	9 <sup>+0.75</sup> <sub>-0.5</sub> mm
W2	Adhesive tape position	3.0 mm max.
F	Component lead spacing	3.5±1.0 mm
P	Pitch of component	12.7 ± 1.0 mm
P0	Sprocket hole pitch	12.7 ± 0.3 mm
P1	Lead length from hole center to lead	4.6 ± 0.7 mm
P2	Length from hole center to disk center	6.35 ± 1.3 mm
D0	Sprocket hole diameter	4.0 ± 0.2 mm
d	Lead wire diameter	0.5± 0.05 mm
T	Disk thickness	3.5 mm max.
t1	Total thickness tape	0.7 ± 0.05 mm
t2	Total thickness	1.6 mm max.

# Packaging



Diameter	Packaging	Bulk (box)	Reel	Ammo
	JCR05		5000	1500

Packaging	Bulk (box)	Reel (JCR05)	Ammo (JCR05)
Box size (mm)	290X155X110	350X350X108	335X245X43
Carton size (mm)	310X328X250	371X371X590	515X354X258
One carton with	4 Boxes	5 Boxes (10 reels)	10 Boxes