NTC Thermistor：JPTC3 Series

Ø3 mm Lead Type for Temperature Sensing/Compensation

■ Features

1. RoHS compliant
2. Halogen-Free(HF) series are available
3. Body size:Ø3mm
4. Radial lead resin coated
5. Operating temperature range: -40℃~+125℃
6. Wide resistance range
7. Cost effective
8. Agency recognition: UL / CQC

■ Recommended Applications

1. Home appliances
2. Computers
3. Digital meters
4. Switch mode power supplies
5. Adapters

■ Part Number Code

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Product Type	
JPTC	NTC Thermistor JPTC Series

Body Size	
3	Ø3mm

Definition of B Value	
A	$B_{25/85}$
B	$B_{25/50}$

Zero Power Resistance at 25℃ (R_{25})	
102	1KΩ
103	10KΩ
473	47KΩ

Tolerance of R_{25}	
F	±1%
G	±2%
H	±3%
J	±5%
K	±10%

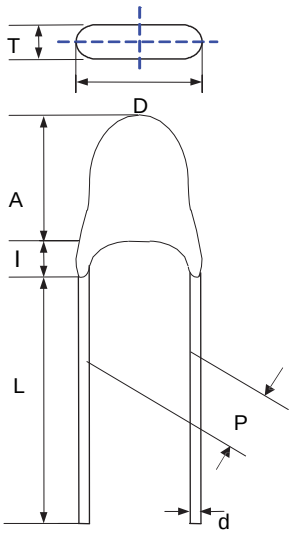
B Value	
374	3740
39D	3935
395	3950
39H	3975
520	5200

Tolerance of B Value	
1	±1%
2	±2%
3	±3%

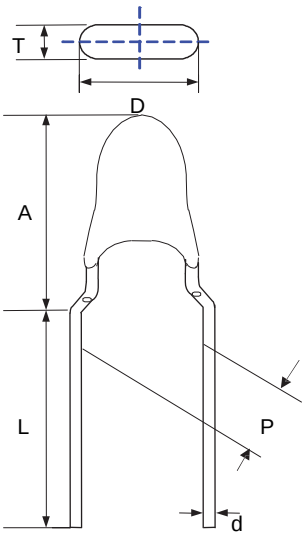
Optional Suffix	
Y	RoHS Compliant
A	RoHS & HF Compliant

Appearance	
E	Straight lead, pitch 2.54mm, Ø0.5mm
P	Straight lead, pitch 5mm, Ø0.5mm
L	Wider Kink, pitch 2.54mm, Ø0.5mm
Q	Wider Kink, pitch 5mm, Ø0.5mm
F	Outer Kink, pitch 2.54mm, Ø0.5mm

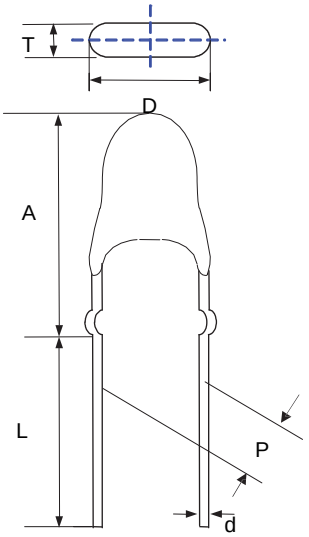
■ Structure and Dimensions



Straight Lead



Wider Kink



Outer Kink

(Unit: mm)

Lead Type	P	$D_{max.}$	$T_{max.}$	$A_{max.}$	$I_{max.}$	L	d
Straight Lead	2.54±0.5	4	3	5	3	30~40	0.5±0.02
	5±0.5	6.5	5	7	3		
Wider Kink	2.54±0.5	4	3	6	--		
	5±0.5	4	3	10	--		
Outer Kink	2.54±0.5	4	3	13.5	--	24.5~34.5	

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■ Electrical Characteristics

Part No.	Zero Power Resistance at 25°C R_{25} (KΩ)	Tolerance of R_{25} (±%)	B Value (K)		Tolerance of B value (±%)	Max. Power Dissipation at 25℃ P_{max}(mW)	Dissipation Factor ä(mW/°C)	Thermal Time Constant τ (Sec.)	Operating Temperature Range T_L~T_U(°C)	Safety Approvals		
										UL cUL	TUV	CQC
JPTC3A901□39D*	0.9	1、2、3、5	25/85	3935	2、3	150	≧2.5	≦18	-40~+125			√
JPTC3A102□39D*	1			3935								√
JPTC3A152□39D*	1.5			3935								√
JPTC3A202□39H*	2			3975								√
JPTC3A222□39H*	2.2			3975								√
JPTC3A272□39H*	2.7			3975								√
JPTC3A302□39H*	3			3975								√
JPTC3A332□39H*	3.3			3975								√
JPTC3A472□39H*	4.7			3975	1、2、3							√
JPTC3A482□395*	4.8			3950								
JPTC3A482□39H*	4.8			3975								
JPTC3A502□39H*	5			3975								√
JPTC3A682□39H*	6.8			3975								√
JPTC3A103□34D*	10			3435								√
JPTC3A103□374*	10			3740								√
JPTC3A103□39H*	10			3975								√
JPTC3A123□374*	12			3740								√
JPTC3A153□374*	15			3740								√
JPTC3A203□374*	20			3740								√
JPTC3A203□426*	20			4260								√
JPTC3A223□374*	22			3740								√
JPTC3A333□409*	33			4090								√
JPTC3A473□409*	47			4090								√
JPTC3A503□39H*	50			3975								√
JPTC3A503□406*	50			4060								√
JPTC3A683□419*	68			4190								√
JPTC3A104□419*	100			4190								√
JPTC3A104□436*	100			4360								√
JPTC3A154□437*	150			4370								√
JPTC3A204□385*	200			3850								
JPTC3A224□437*	220			4370								√
JPTC3A334□457*	330			4570								√
JPTC3A474□457*	470			4570								√
JPTC3A474□520*	470			5200	3							√
JPTC3B202□350*	2		25/50	3500	2、3							√
JPTC3B473□39D*	47			3935	1、2、3							√
JPTC3B503□440*	50			4400	2、3							√
JPTC3B434□507*	430			5070								
JPTC3B474□520*	470			5200	3							√

Note 1: □ = Tolerance of R_{25}

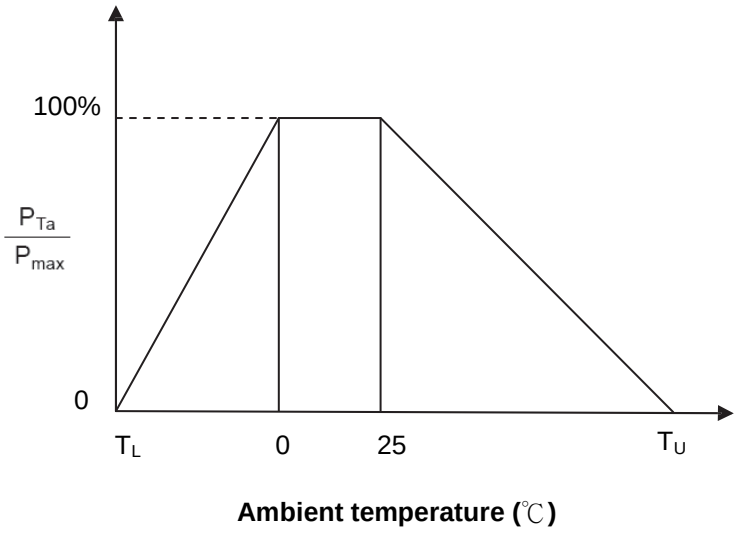
* = Tolerance of B value

Note 2: UL

CQC

Note 3: Special specifications are available upon request.

■ Max. Power Dissipation Derating Curve

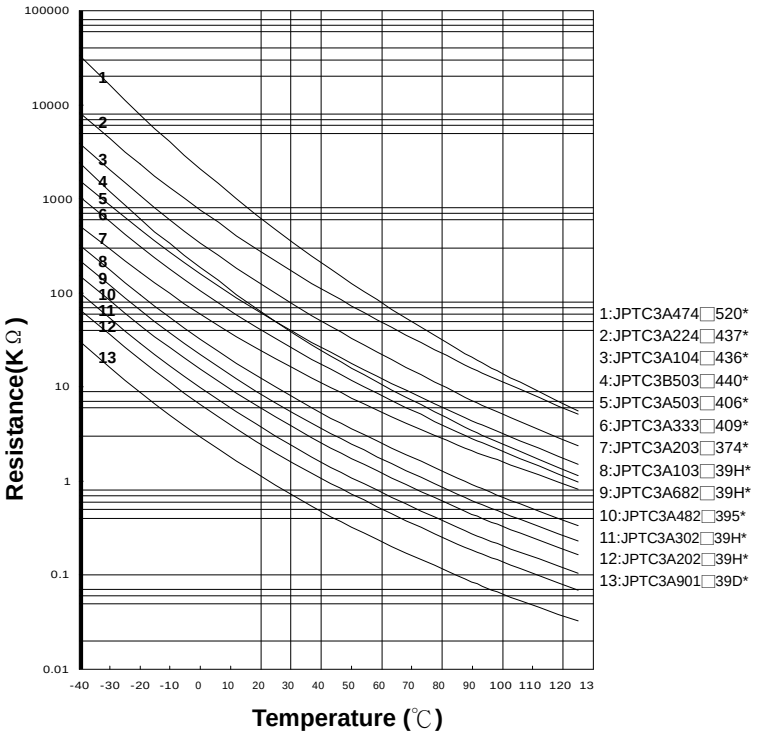


T_U : Maximum operating temperature (℃)
T_L : Minimum operating temperature (℃)

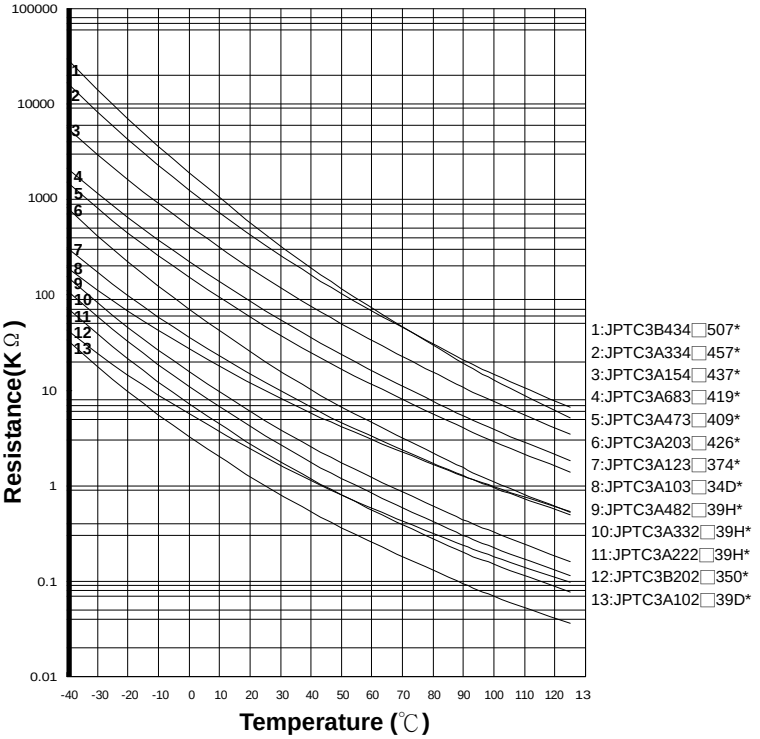
For example:
Ambient temperature(Ta) = 55℃
Maximum operating temperature(T_U) = 125℃
P_{Ta} = (T_U-Ta)/(T_U-25)×Pmax = 70% Pmax

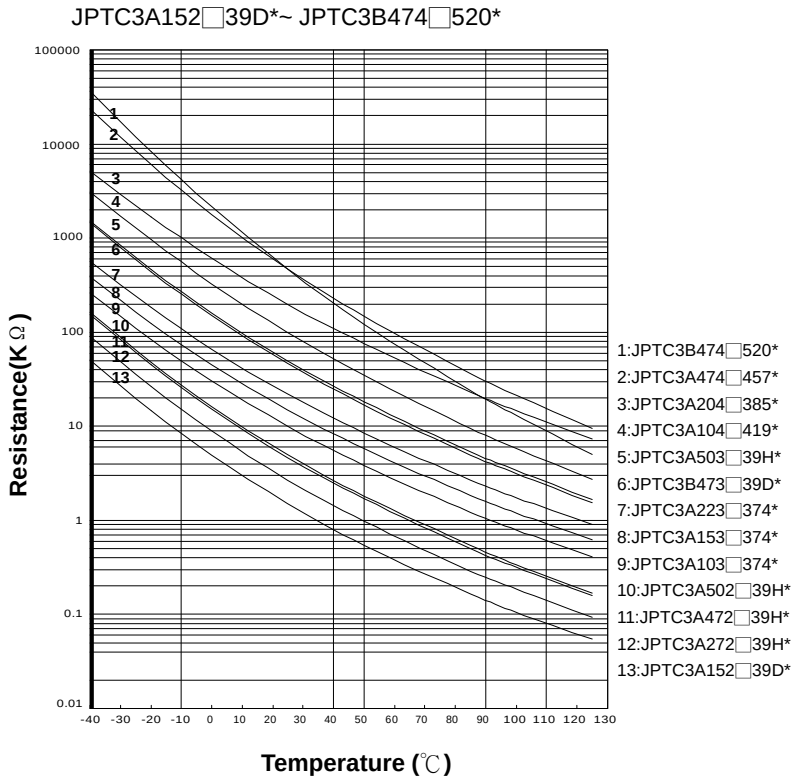
■ R-T Characteristic Curves

JPTC3A901□39D*~ JPTC3A474□520*



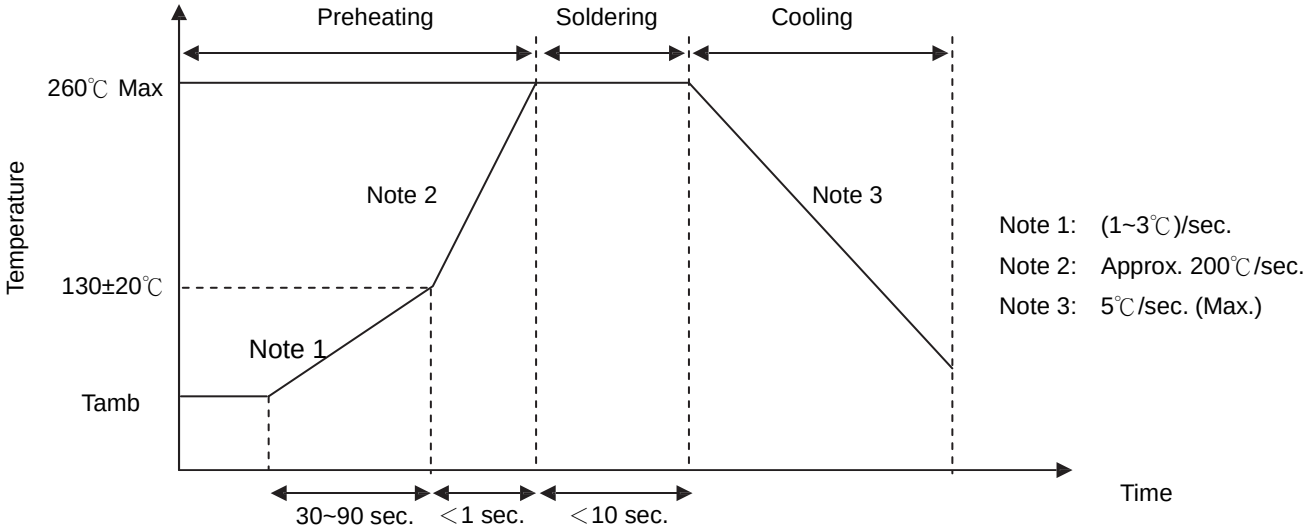
JPTC3A102□39D*~ JPTC3B434□507*





■ Soldering Recommendation

● Wave Soldering Profile



● Recommended Reworking Conditions with Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	360℃ (max.)
Soldering Time	3 sec. (max.)
Distance from Thermistor	2 mm (min.)

■ Reliability

<table>
<tr><th>Item</th><th>Standard</th><th>Test conditions / Methods</th><th>Specifications</th></tr>
<tr><td>Tensile Strength of Terminations</td><td>IEC 60068-2-21</td><td>Gradually apply the specified force and keep the unit fixed for 10±1 sec.

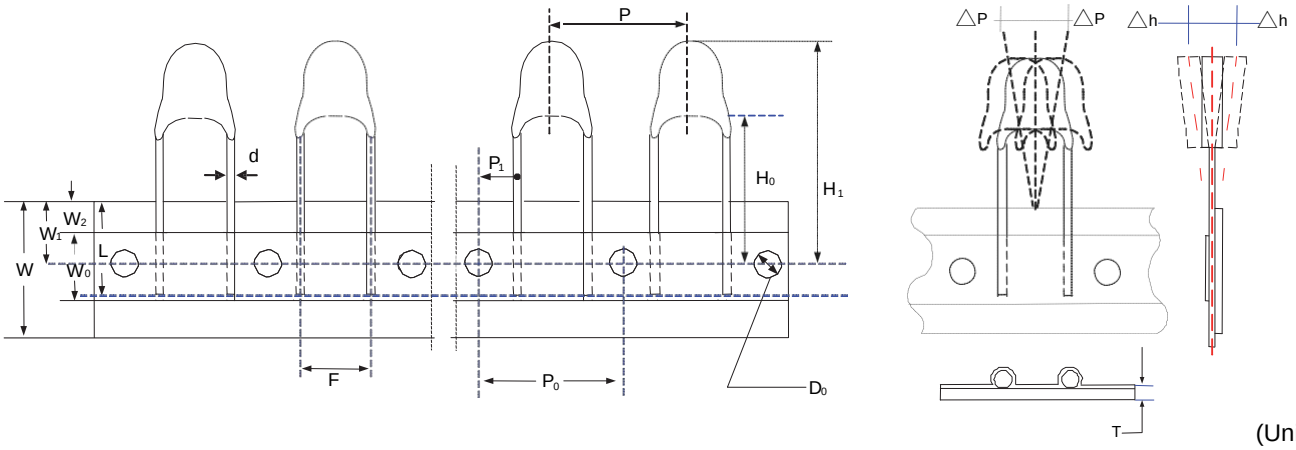
Terminal diameter (mm) | Force (Kg)
0.3<d≦0.5 | 0.5</td><td>No visible damage</td></tr>
<tr><td>Bending Strength of Terminations</td><td>IEC 60068-2-21</td><td>Hold specimen and apply the force specified below to each lead. Bend the specimen to 90°, and then return to the original position. Repeat the procedure in the opposite direction.

Terminal diameter (mm) | Force (Kg)
0.3<d≦0.5 | 0.25</td><td>No visible damage</td></tr>
<tr><td>Solderability</td><td>IEC 60068-2-20</td><td>245±3 ℃, 3±0.3 sec.</td><td>At least 95% of terminal electrode is covered by new solder</td></tr>
<tr><td>Resistance to Soldering Heat</td><td>IEC 60068-2-20</td><td>260 ± 3℃, 10 ± 1 sec.</td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 3\ \%$</td></tr>
<tr><td>High Temperature Storage</td><td>IEC 60068-2-2</td><td>125 ± 5℃ , 1000 ± 24 hrs</td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 5\ \%$</td></tr>
<tr><td>Damp Heat, Steady State</td><td>IEC 60068-2-78</td><td>40 ± 2℃ , 90~95% RH , 1000 ± 24 hrs</td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 3\ \%$</td></tr>
<tr><td>Rapid Change of Temperature</td><td>IEC 60068-2-14</td><td>The conditions shown below shall be repeated 5 cycles
<table><tr><th>Step</th><th>Temperature (℃)</th><th>Period (minutes)</th></tr><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></table></td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 3\ \%$</td></tr>
<tr><td>Max. Power Dissipation</td><td>IEC 60539-1 4.26.3</td><td>25 ± 5℃, Pmax. , 1000 ± 24 hrs</td><td>No visible damage
$|\triangle R_{25}/R_{25}| \leqq 5\ \%$</td></tr>
</table>

■ Packaging

● Taping Specification

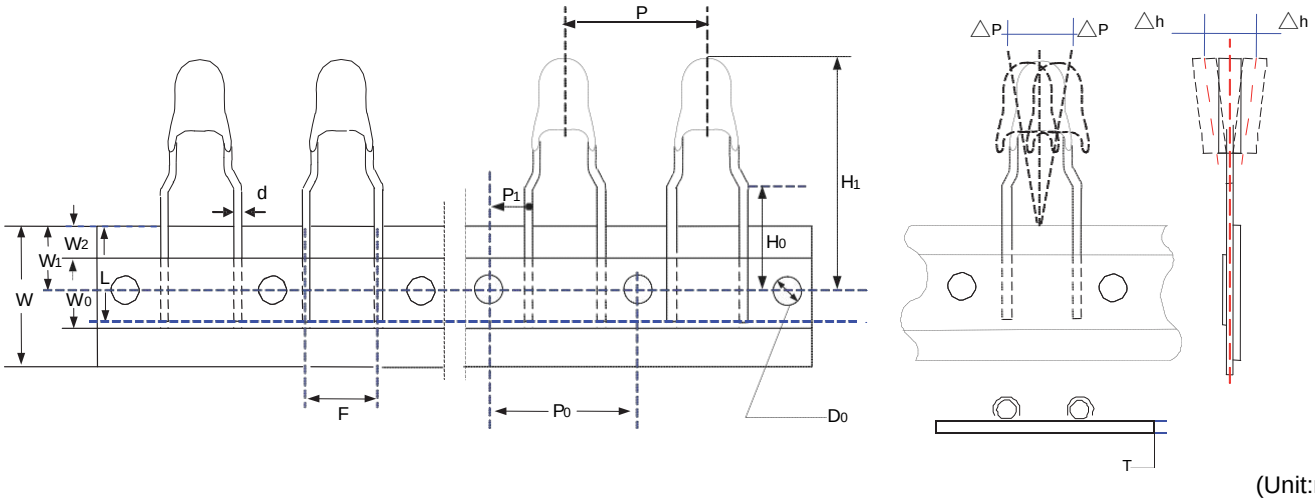
Straight Lead



(Unit:mm)

Taping Dimension	P_0	F	P	P_1	H_0	H_1	d	W_0	W_1	W_2	W	△P	△h	L	D_0	T
	±0.3	±0.5	±1	±0.7	+2/-0	Max.	±0.02	±1	+0.75 /-0.5	Max.	+1/ -0.5	Max.	Max.	±1	±0.2	±0.2
P_0=12.7	12.7	2.54	12.7	5.08	18	25	0.5	12	9	3	18	1	2	10	4	0.6
	12.7	5.00	12.7	3.85	18	25	0.5	12	9	3	18	1	2	10	4	0.6
P_0=15.0	15.0	2.54	15.0	6.23	18	25	0.5	12	9	3	18	1	2	10	4	0.6
	15.0	5.00	15.0	5.00	18	25	0.5	12	9	3	18	1	2	10	4	0.6

Wider Kink



(Unit:mm)

Taping Dimension	P_0	F	P	P_1	H_0	H_1	d	W_0	W_1	W_2	W	△P	△h	L	D_0	T
	±0.3	±0.5	±1	±0.7	±0.5	Max.	±0.02	±1	+0.75 /-0.5	Max.	+1/ -0.5	Max.	Max.	±1.	±0.2	±0.2
P_0=12.7	12.7	2.54	12.7	5.08	16	26	0.5	12	9	3	18	1	2	10	4	0.6
	12.7	5.00	12.7	3.85	16	26	0.5	12	9	3	18	1	2	10	4	0.6

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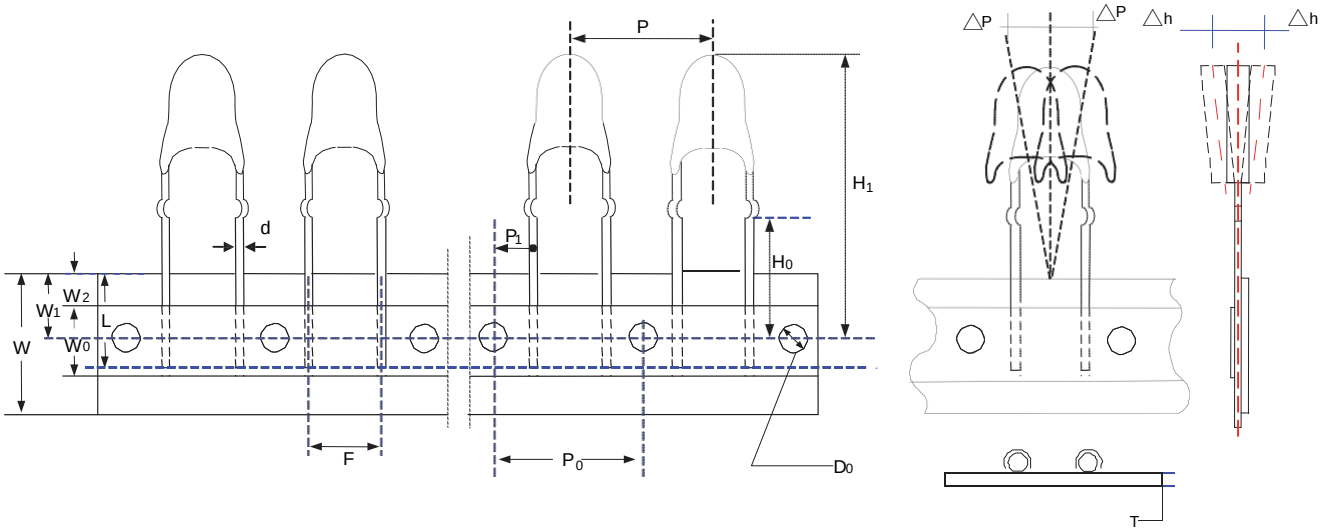
Outer Kink



(Unit:mm)

Taping Dimension	P_0 ±0.3	F ±0.5	P ±1	P_1 ±0.7	H_0 ±0.5	H_1 Max.	d ±0.02	W_0 ±1	W_1 +0.75 /-0.5	W_2 Max.	W +1/ -0.5	△P Max.	△h Max.	L ±1	D_0 ±0.2	T ±0.2
P_0=12.7	12.7	2.54	12.7	5.08	16	26	0.5	12	9	3	18	1	2	10	4	0.6

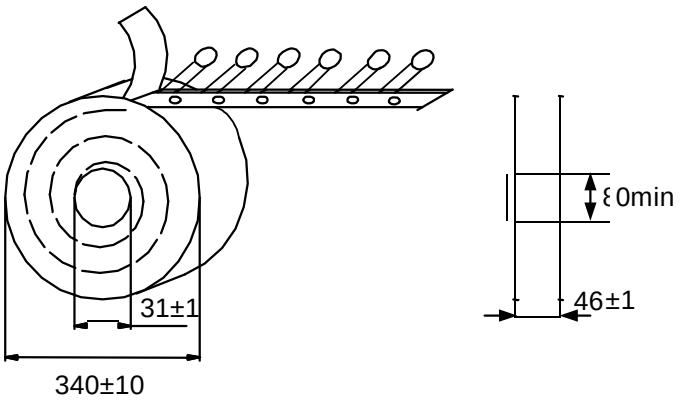
■ Quantity

● Bulk Packing

Series	Quantity (pcs/bag)
JPTC3	500

● Reel Packing

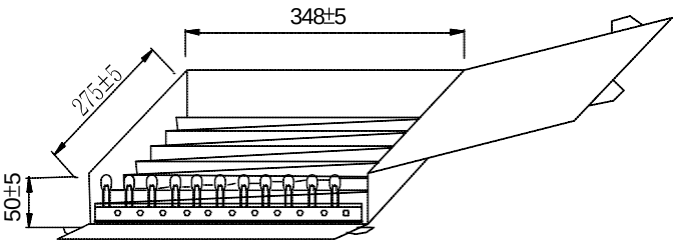
Series	Quantity (pcs/reel)
JPTC3	2,500



(Unit: mm)

● Ammo Packing

Series	Quantity (pcs/box)
JPTC3	2,500



■ Warehouse Storage Conditions of Products

- Storage Conditions:
  1. Storage Temperature: -10℃~+40℃
  2. Relative Humidity: ≦75%RH
  3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage : 1 year