



# **PTC Thermistors**

## Taping and packing

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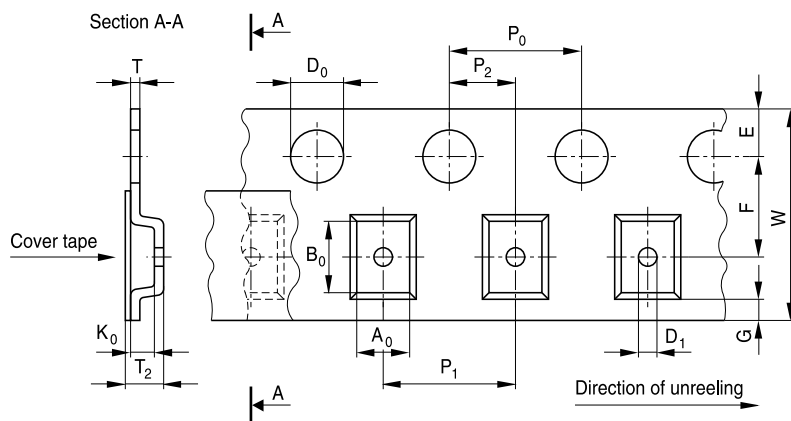
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## Taping and packing

Many of the components presented in this data book are suitable for processing on automatic insertion or placement machines. These thermistors can be supplied on tape for easy handling by automatic systems. The individual modes of taping and packing will be described in the following.

### 1 Taping of SMD thermistors

#### 1.1 Blister tape (to IEC 60286-3)



KKE0053-C-E

Dimension (mm)	8-mm tape	16-mm tape	Tolerance (mm)	24-mm tape	Tolerance (mm)
$D_0$	1.50	1.50	+ 0.10/−0	1.50	+ 0.10
$D_1$	0.3	1.50	min.	1.50	+ 0.10
$P_0$	4.00	4.00	± 0.10 <sup>1)</sup>	4.00	± 0.10
$P_2$	2.00	2.00	± 0.05	2.00	± 0.10
$P_1$	4.00	12.00	± 0.10	16.00	± 0.10
$W$	8.00	16.00	± 0.30	24.00	+ 0.30/−0.1
$E$	1.75	1.75	± 0.10	1.75	± 0.10
$F$	3.50	7.50	± 0.05	11.50	± 0.10
$G$	0.75	0.75	min.	0.75	min.
$T$	0.60	0.60	max.	0.60	max.

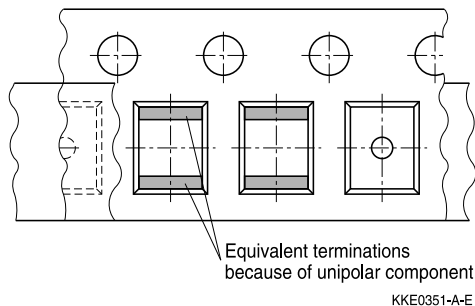
$A_0 \times B_0$ ,  $K_0$ ,  $T_2$ : The rated dimensions of the component compartment have been derived from the relevant component specification and are chosen such that the components cannot change their orientation within the tape.

1) ≤ 0.2 mm over 10 sprocket holes

## Taping and packing

### Part orientation in tape pocket for blister tape

For chip thermistors case sizes 0805 and 1210



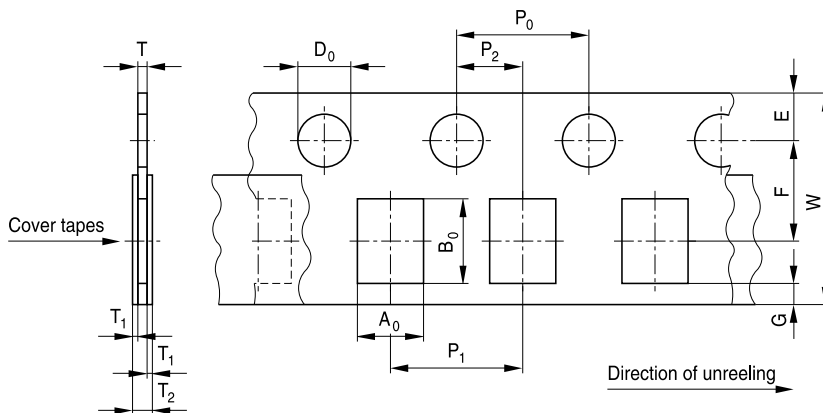
### Additional taping information

For chip thermistors case sizes 0805 and 1210

Reel material	Polystyrol (PS)
Tape material	Polystyrol (PS) or Polycarbonat (PC) or PVC
Tape break force	min. 10 N
Top cover tape strength	min. 10 N
Top cover tape peel force	0.1 ... 1.0 N for 8-mm tape and 0.1 ... 1.3 N for 12-mm tape at a peel speed of 300 mm/min
Tape peel angle	Angle between top cover tape and the direction of feed during peel off: 165° ... 180°
Cavity play	Each part rests in the cavity so that the angle between the part and cavity center line is no more than 20°

## Taping and packing

### 1.2 Cardboard tape (to IEC 60286-3)



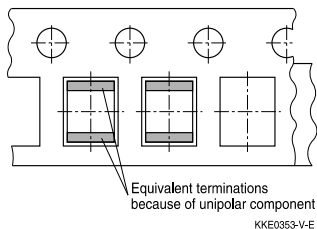
Dimensions (mm)	8-mm tape		Tolerance (mm)
	Case size		
	0402	0603	
$A_0$	0.6	0.95	$\pm 0.2$
$B_0$	1.15	1.8	$\pm 0.2$
$T$	0.6	0.95	$\pm 0.05$
$T_2$	0.75	1.1	max.
$D_0$	1.5		$+0.1/-0$
$P_0$	4.0	4.0	$\pm 0.1^{2)}$
$P_2$	2.0	2.0	$\pm 0.05$
$P_1$	2.0	4.0	$\pm 0.1$
$W$	8.0		$\pm 0.3$
$E$	1.75		$\pm 0.1$
$F$	3.5		$\pm 0.05$
$G$	0.75		min.

2)  $\leq 0.2$  mm over 10 sprocket holes.

## Taping and packing

### Part orientation in tape pocket for cardboard tape

For chip thermistors case sizes 0402 and 0603



### Additional taping information

Reel material	Polystyrol (PS)
Tape material	Cardboard
Tape break force	min. 10 N
Top cover tape strength	min. 10 N
Top cover tape peel force	0.1 ... 1.0 N at a peel speed of 300 mm/min
Tape peel angle	Angle between top cover tape and the direction of feed during peel off: 165° ... 180°
Cavity play	Each part rests in the cavity so that the angle between the part and cavity center line is no more than 20°

## Taping and packing

### 1.3 Reel dimensions

#### 180-mm reel with 8-mm tape

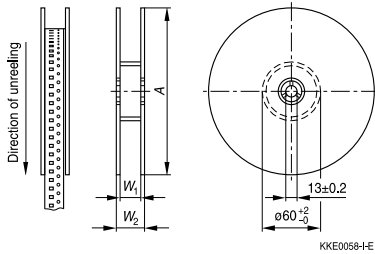


Figure 4

Dimension	180-mm reel
A	180 $-2/+0$
W <sub>1</sub>	8.4 $+1.5/-0$
W <sub>2</sub>	14.4 max.

#### 330-mm reel with 16-mm tape

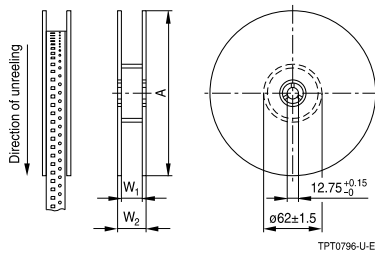


Figure 5

Dimension	330-mm reel
A	330 $-2/+0$
W <sub>1</sub>	16.4 $+2.0/-0$
W <sub>2</sub>	22.4 max.

#### 330-mm reel with 24-mm tape

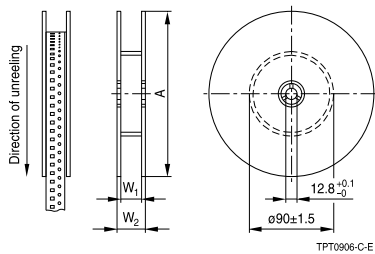


Figure 6

Dimension	330-mm reel
A	330 $-2/+0$
W <sub>1</sub>	24.4 min.
W <sub>2</sub>	30.4 max.

#### 380-mm reel with 24-mm tape

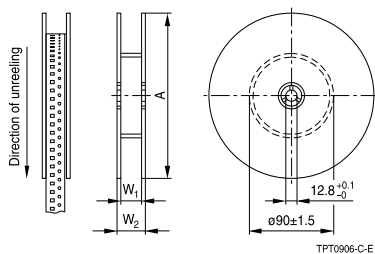


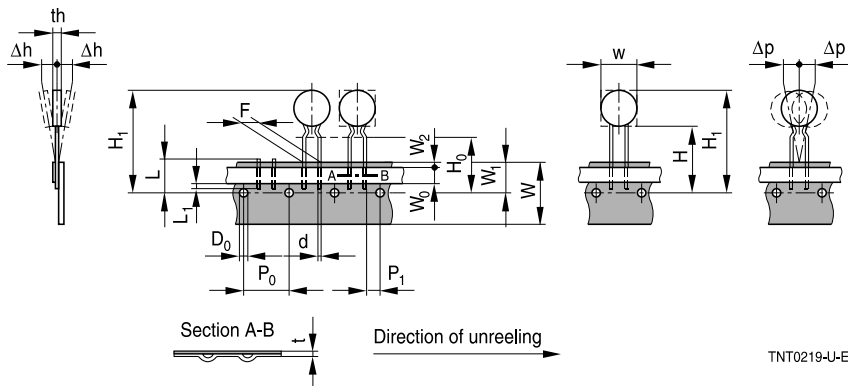
Figure 4

Dimension	380-mm reel
A	380 $-2/+0$
W <sub>1</sub>	24.4 min.
W <sub>2</sub>	30.4 max.

## Taping and packing

### 2 Taping of radial-leaded PTC thermistors

**Dimensions and tolerances** (taping to IEC 60286-2, lead spacing 5.0 mm)



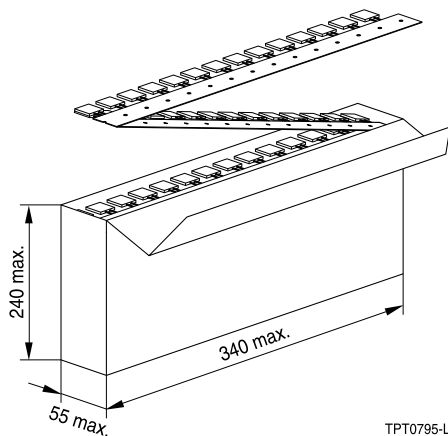
TNT0219-U-E

Dimension (mm)	Tolerance	Remarks
w	valid for $w \leq 11$ mm see dimensional drawings	
th	6.0	max.
d	0.5/0.6	$\pm 0.05$
P <sub>0</sub>	12.7	$\pm 0.3$
P <sub>1</sub>	3.85	$\pm 0.7$
F	5.0	$+0.6/-0.1$
Δh	0	$\pm 2.0$
Δp	0	$\pm 1.3$
W	18.0	$\pm 0.5$
W <sub>0</sub>	5.5	min.
W <sub>1</sub>	9.0	$+0.75/-0.5$
W <sub>2</sub>	3.0	max.
H	18.0	$+2.0/-0$
H <sub>0</sub>	16.0	$\pm 0.5$
H <sub>1</sub>	32.2	max.
D <sub>0</sub>	4.0	$\pm 0.2$
t	0.9	max.
L	11.0	max.
L <sub>1</sub>	4.0	max.
		without wires

## Taping and packing

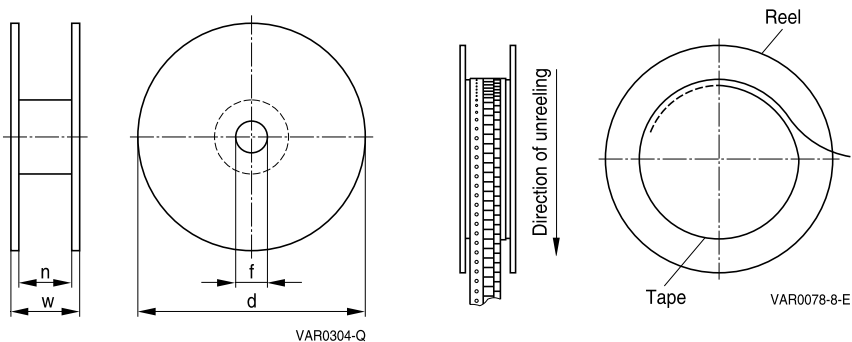
### Modes of packing

#### Ammo packing



**Packing unit:** 500 ... 2000 pcs./box

#### Reel packing



**Packing unit:** 500 ... 2000 pcs./reel

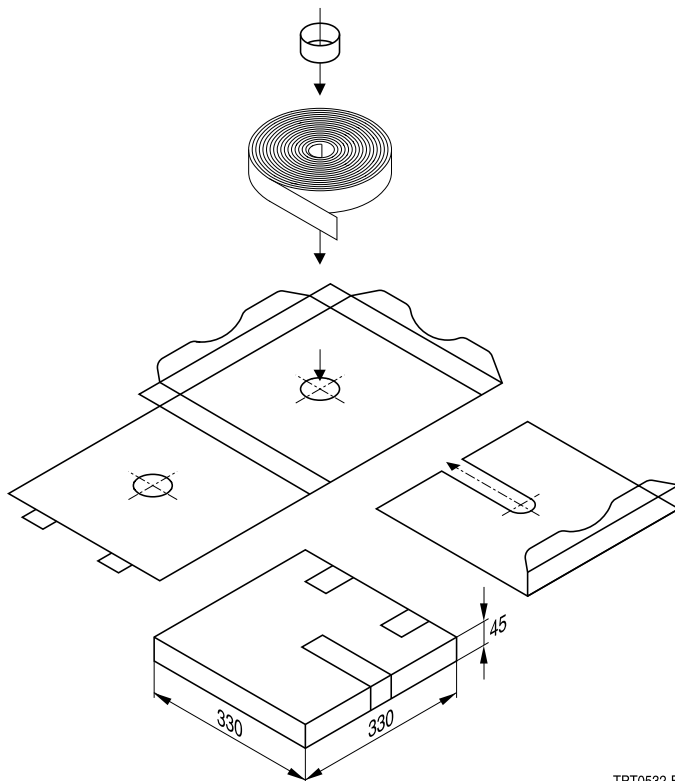
#### Reel dimensions (in mm)

d	f	n	w
360 max.	31 ±1	approx. 45	54 max.



## Taping and packing

### Cassette packing



TPT0532-B

**Packing unit:** 1000 ... 2000 pcs./cassette

## Taping and packing

### 3 Packing codes

The last two digits of the complete ordering code state the packing mode.

Last two digits			
10, 20	–	–	Various (e.g. blister tray, cardboard tray, cardboard box or tube packing)
40	–	–	Bulk
51	Radial leads, kinked	Taped	Reel packing
53	Radial leads, straight	Taped	Reel packing
54	Radial leads, kinked	Taped	Ammo packing
55	Radial leads, straight	Taped	Ammo packing
61	SMDs	Taped	Reel packing, blister tape
62	SMDs	Taped	Reel packing, cardboard or blister tape
70	Radial leads, kinked or straight	Untaped	Cardboard strips

Example:

B59890C0120A070: Radial leads, untaped on cardboard strips

B59890C0120A051: Radial leads, kinked, taped on reel packing