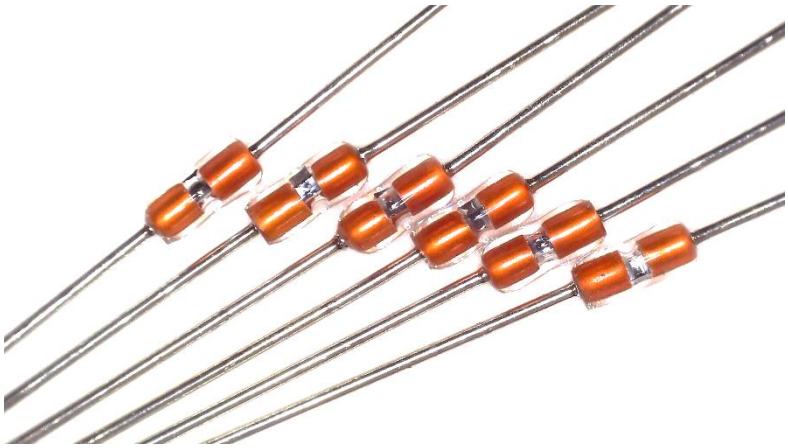
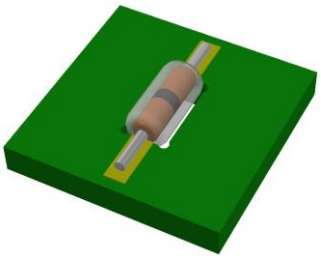
# Temperature Sensors of PTC Series - KTY replacement



- **Alternative to KTY81, KTY82, KTY83 & KTY84**
- **Almost identical characteristics**
- **No polarity reversal (+/-) possible**
- **Short reaction time**
- **Excellent long-term stability**
- **DO-35 glass housing**
- **Customized wire bending**



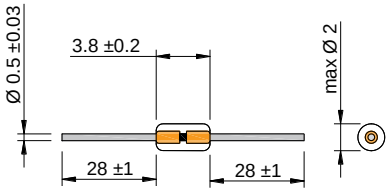
Example for SMT mounting.
Wires cut through 1.5 – 2mm.
Standard PCB get a groove.
High is 1,25mm only.

## Applications

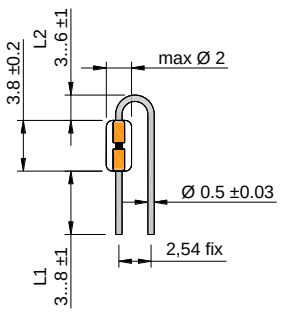
The temperature sensors of the PTC series can used as an alternative to the discontinued KTY81, KTY82, KTY83 & KTY84. The almost identical characteristic and design allow easy replacement. As single unit or assembled they can ordered. Frequent applications can found in windings of electric motors and transformers as winding temperature sensors, but also in printed circuit board construction, in household appliances and many more.

## General technical data

| | | |
|---|---|---|
| Dimensions | DO-35 (DO-204-AH or SOD27) | |
| Operating temperature range | PTC-600: | -40 ... +170°C |
| | PTC-1000: | -55 ... +150°C |
| | PTC-2000: | -55 ... +150°C |
| Recommended measuring current | < 5mA | |
| Max. current | 8mA @ 25°C | |
| Rated power | 10mW | |
| Leads | Ferro-Nickel tinned | |




Standard shape




Customized wire bending
L1 & L2 according your requirements



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## Variants & Order Numbers

| Description | Resistance | Tolerance | Measuring range | Alternative to | Order number | |
|---|---|---|---|---|---|---|
| | | | | | Bag | Tape & Reel |
| **PTC-600 (3%)** | $R_{100}$ = 1025 Ω | ± 3% | -40°C ... +170°C | KTY84/130<br>KTY84/150<br>KTY84/151 | 520656 | 520662 |
| **PTC-1000 (1%)** | $R_{25}$ = 1000 Ω | ± 1% | -55°C ... +150°C | KTY81/110 | 520665 | 520871 |
| | | | | KTY82/110 | | |
| | | | | KTY83/110 | | |
| | | | | KTY81/120<br>KTY81/121<br>KTY81/122 | | |
| | | | | KTY82/120<br>KTY82/121<br>KTY82/122 | | |
| | | | | KTY83/120<br>KTY83/121<br>KTY83/122 | | |
| | | | | KTY81/150<br>KTY82/150<br>KTY82/151<br>KTY83/150<br>KTY83/151 | | |
| **PTC-2000 (1%)** | $R_{25}$ = 2000 Ω | ± 1% | -55°C ... +150°C | KTY81/210 | 520873 | 520660 |
| | | | | KTY81/220<br>KTY81/221<br>KTY81/222 | | |
| | | | | KTY82/210<br>KTY82/220<br>KTY82/221<br>KTY82/222 | | |
| | | | | KTY81/250 | | |
| | | | | KTY82/250<br>KTY82/251<br>KTY82/252 | | |

* Above the specified measuring ranges, the linearity of the characteristic curves cannot guaranteed



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## R/T table

| °C | PTC-600 (3%) | | | PTC-1000 (1%) | | | PTC-2000 (1%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | min. Ω | nor. Ω | max. Ω | min. Ω | nor. Ω | max. Ω | min. Ω | nor. Ω | max. Ω |
| **-55** | --- | --- | --- | 463 | 477 | 492 | 942 | 980 | 1000 |
| **-50** | --- | --- | --- | 488 | 502 | 516 | 992 | 1030 | 1051 |
| **-40** | 334 | 344 | 371 | 541 | 555 | 570 | 1098 | 1135 | 1158 |
| **-30** | 360 | 372 | 400 | 598 | 613 | 627 | 1212 | 1247 | 1271 |
| **-20** | 395 | 408 | 437 | 660 | 674 | 689 | 1333 | 1367 | 1391 |
| **-10** | 432 | 446 | 476 | 727 | 741 | 755 | 1463 | 1495 | 1519 |
| **0** | 472 | 487 | 518 | 797 | 810 | 823 | 1600 | 1630 | 1653 |
| **10** | 514 | 530 | 562 | 873 | 885 | 898 | 1746 | 1772 | 1795 |
| **20** | 559 | 576 | 609 | 950 | 961 | 972 | 1900 | 1922 | 1943 |
| **25** | 582 | 600 | 634 | 990 | 1000 | 1010 | 1980 | 2000 | 2020 |
| **30** | 604 | 623 | 657 | 1024 | 1036 | 1047 | 2056 | 2080 | 2103 |
| **40** | 651 | 672 | 706 | 1107 | 1121 | 1135 | 2215 | 2245 | 2274 |
| **50** | 700 | 724 | 757 | 1198 | 1215 | 1232 | 2380 | 2417 | 2454 |
| **60** | 755 | 780 | 813 | 1290 | 1311 | 1331 | 2553 | 2597 | 2641 |
| **70** | 811 | 837 | 870 | 1384 | 1408 | 1432 | 2732 | 2785 | 2837 |
| **80** | 869 | 897 | 929 | 1479 | 1508 | 1536 | 2918 | 2980 | 3041 |
| **90** | 931 | 960 | 992 | 1581 | 1614 | 1647 | 3111 | 3182 | 3253 |
| **100** | 994 | 1025 | 1056 | 1686 | 1724 | 1762 | 3310 | 3392 | 3474 |
| **110** | 1057 | 1091 | 1126 | 1793 | 1836 | 1879 | 3514 | 3607 | 3700 |
| **120** | 1124 | 1160 | 1201 | 1897 | 1947 | 1996 | 3712 | 3817 | 3922 |
| **130** | 1194 | 1234 | 1281 | 1996 | 2049 | 2101 | 3891 | 4008 | 4124 |
| **140** | 1262 | 1306 | 1357 | 2076 | 2133 | 2189 | 4039 | 4166 | 4293 |
| **150** | 1327 | 1375 | 1432 | 2140 | 2201 | 2261 | 4143 | 4280 | 4417 |
| **160** | 1385 | 1437 | 1501 | --- | --- | --- | --- | --- | --- |
| **170** | 1438 | 1493 | 1563 | --- | --- | --- | --- | --- | --- |



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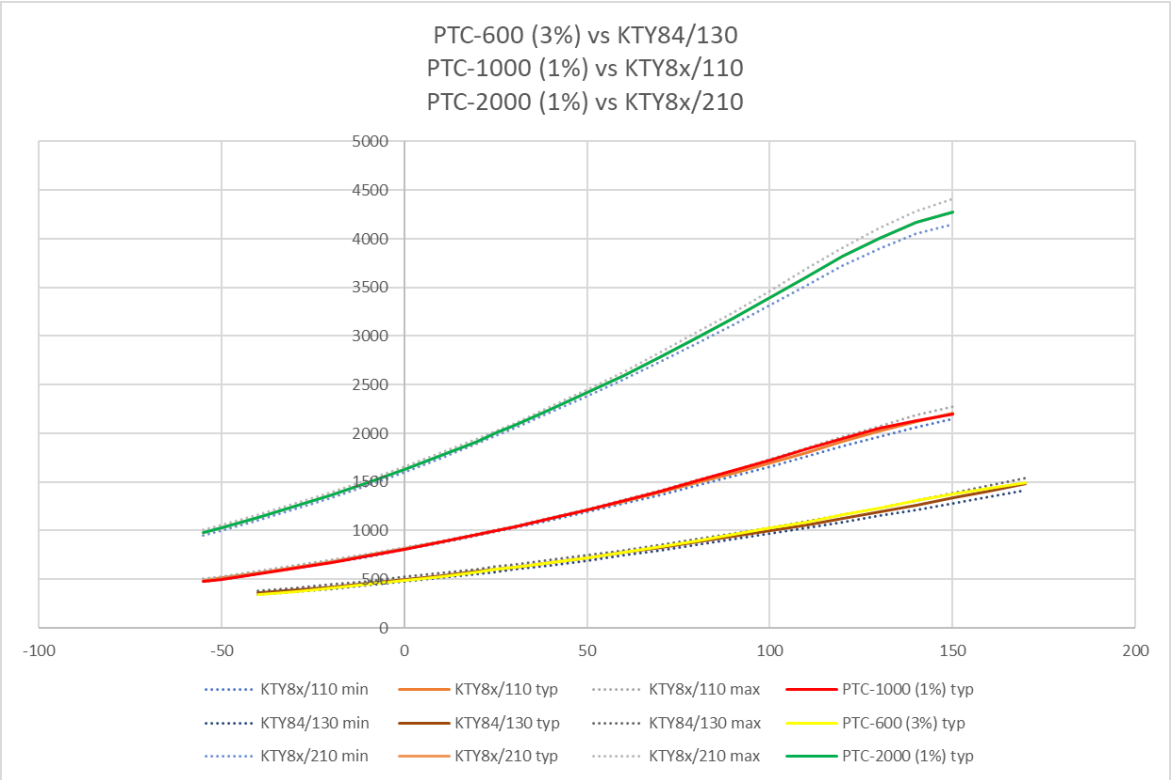


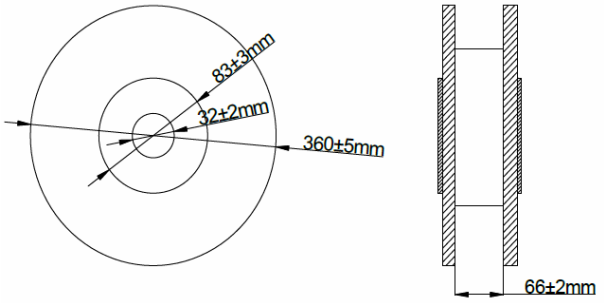

## Packaging

### Bag

| | |
|---|---|
| Packaging unit: | 500 PCS per Bag |
| Weight: | Per Bag appx. 0.072 kg |

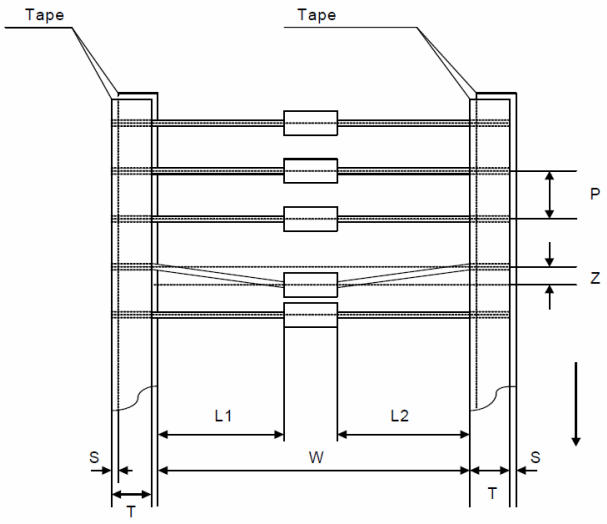
### Tape & Reel

| | |
|---|---|
| Packaging unit: | 5.000 PCS taped on reel |
| Weight: | Per Reel appx. 1.4 kg |
| Dimension (D x B): | Ø 360 x 66mm |
| Inner diameter (D1): | Ø 32mm |




### Dimension tape

| W | P | L1-L2 | T | Z | S |
|---|---|---|---|---|---|
| 52 | 5.08 | ±0.69 | 0.55 | 1.2 | 0 |




All dimensions in mm



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## Specification assembled temperature sensor

**PTC-1000(1%) - 2L - 0.25m - PFA - 25mm - PVDF**

**Sensor element:**
PTC-600, PTC-1000, PTC-2000, ...

**Number of wires:**
2-Wire = 2L

**Wire length:**
e.g. 250mm

**Material Wire insulation:**
e.g. PFA, FEP, ETFE etc.

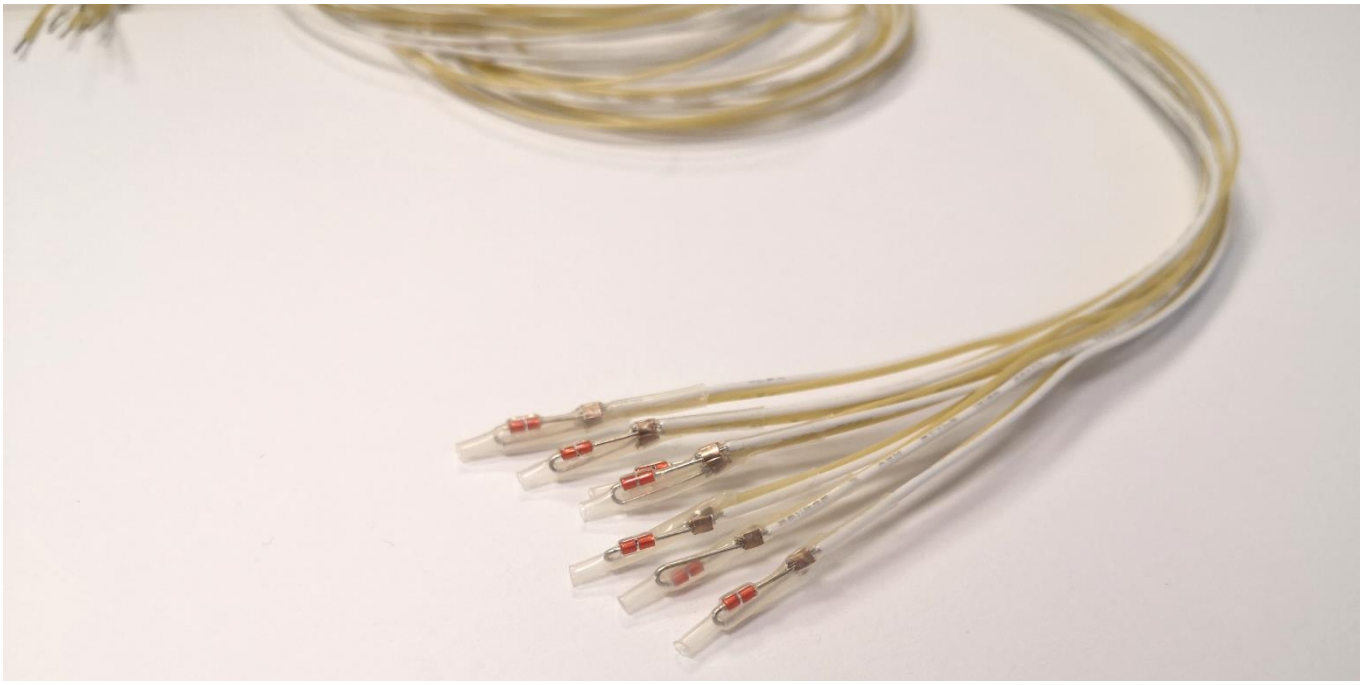
**Length shrink tube:**
e.g. 25mm

**Material shrink tube:**
e.g. PVDF 175 (Kynar)

**Example: PTC-1000(1%)-2L-0.25m-PFA-30mm-PVDF**

### Other Specification are available on request

### UL-style version with UL wire and UL shrink tube is standard





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