## SIEMENS

## Silicon Spreading Resistance Temperature Sensor in Surface Mount Technology

## Features

- Temperature dependent Resistor with Positive Temperature Coefficient
- SMD plastic package for very small thermal time constants
- Fast response
- High reliability due to multilayer gold contacts
- n-conducting silicon crystal
- Polarity independent due to symmetrical
 construction
- Available selected in $\pm 1 \%$ tolerance groups

| Type | Marking | Ordering Code | Pin Configuration |  | Package |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  | $\mathbf{1}$ | $\mathbf{2}$ |  |
| KT 130 | T-1 | Q62705-K333 | electrical | electrical | SOT-23 |
| contact |  |  |  |  |  |
| contact |  |  |  |  |  |$)$

## Maximum Ratings

| Parameter | Symbol | KT 130 <br> KTY 13 | KT 230 <br> KTY 23 | Unit |
| :--- | :--- | :--- | :--- | :--- |
| Maximum operating voltage ${ }^{1)}$ <br> $T_{\mathrm{A}} \leq 25^{\circ} \mathrm{C}, t \leq 10 \mathrm{~ms}$ | $V_{\text {opmax }}$ | 25 |  | V |
| Maximum operating current | $I_{\text {opmax }}$ | 5 | 7 | mA |
| Peak operating current | $I_{\text {opp }}$ | 7 | 10 | mA |
| $T_{\mathrm{A}} \leq 25^{\circ} \mathrm{C}, t \leq 10 \mathrm{~ms}$ |  |  |  |  |$\quad$| Operating temperature range | $T_{\text {op }}$ | $-50 \ldots+150$ |  |
| :--- | :--- | :--- | :--- |
| Storage temperature range | $T_{\text {stg }}$ | $-50 \ldots+150$ |  |

[^0]
## Electrical Characteristics

at $T_{\mathrm{A}}=25^{\circ} \mathrm{C}$ unless otherwise specified

| Parameter | Symbol | Limit Values |  |  | Unit |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | min. | typ. | max. |  |
| Temperature sensor resistance IB = 1 mA | $R_{25}$ |  |  |  | $\Omega$ |
| KT 130 |  | 1940 | - | 2060 |  |
| KTY 13-5 |  | 1950 | - | 1990 |  |
| KTY 13-6 |  | 1980 | - | 2020 |  |
| KTY 13-7 |  | 2010 | - | 2050 |  |
| KT 230 | 970 | - | 1030 |  |  |
| KTY 23-5 |  | 975 | - | 995 |  |
| KTY 23-6 | 990 | - | 1010 |  |  |
| KTY 23-7 |  | 1005 | - | 1025 |  |
| Thermal time constant (63\% of $\left.\Delta T_{\mathrm{A}}\right)$ |  |  |  |  | s |
| in still air | $\tau_{\text {air }}$ | - | 7 | - |  |
| in still oil (Freon FC40/PP7) | $\tau_{\text {oil }}$ | - | 1 | - |  |

## Package Outline



## Exterior Packaging

I.e. tubes, trays, boxes are shown in our Data Book "Package Information".

SMD = Surface Mounted Device


[^0]:    1) ESD Class 1. When the temperature sensor is operated with long supply leads, it should be protected through the parallel connection of $a>10 \mathrm{nF}$ capacitor to prevent damage to the sensor through induced voltage peaks.
