# High Temperature
# Thick Film Chip Resistors

**TT electronics**

## HTC Series

- **Operation to 200°C**
- Excellent high temperature stability
- Improved working voltage ratings
- Pb-free wrap-around terminations
- Standard chip sizes available from 1206 to 2512
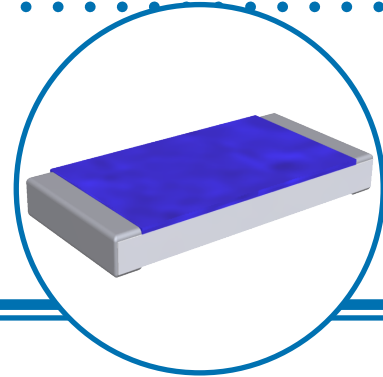
## Electrical Data

| Characteristic | 1206 | 2010 | 2512 |
|---|---|---|---|
| Resistance Range | 1Ω to 10MΩ; ±1%, ±5% <br> 10Ω to 1MΩ; ±0.5%, ±5%, ±1% | | |
| 150°C Power Rating | 200mW | 500mW | 750mW |
| Max Voltage Rating | 200V | 400V | 500V |
| Absolute TCR | ± 100ppm/°C | | |
| Operating Temperature | -55°C to +200°C | | |
| Pad/Trace Area[1] | 80mm$^2$ | 200mm$^2$ | 300mm$^2$ |
| Termination | Wrap-around Pb-free with leach resistant Ni barrier | | |

Note[1] : Recommended minimum pad and adjacent trace area for each termination for rated power on FR4 PCB.

## Environmental Data

| Test | Method | Specification | |
|---|---|---|---|
| | | Maximum[2] | Typical |
| Load Life | MIL-STD-202 Method 108 (Rated Power for 1000hrs @ 150°C) | 1.00% | 0.25% |
| High Temperature Exposure | 1000 hours @ 200°C | 1.00% | 0.20% |
| Short Time Overload | MIL-PRF-55342H (6.25X rated power for 5secs) | 1.00% | 0.10% |
| Moisture Resistance | MIL-STD-202 Method 106G | 1.00% | 0.25% |
| Thermal Shock | MIL-STD-202 Method 107G Condition B | 0.25% | 0.05% |
| Resistance to Soldering Heat | MIL-STD-202 Method 210F | 0.25% | 0.05% |
| Solderability | MIL-STD-202 Method 208 (245°C, 5 seconds) | >95% Coverage | |

Note[2] : 0.01Ω added for all resistance values <10Ω.

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# Pulse Withstanding Chip Resistors

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## Physical Data
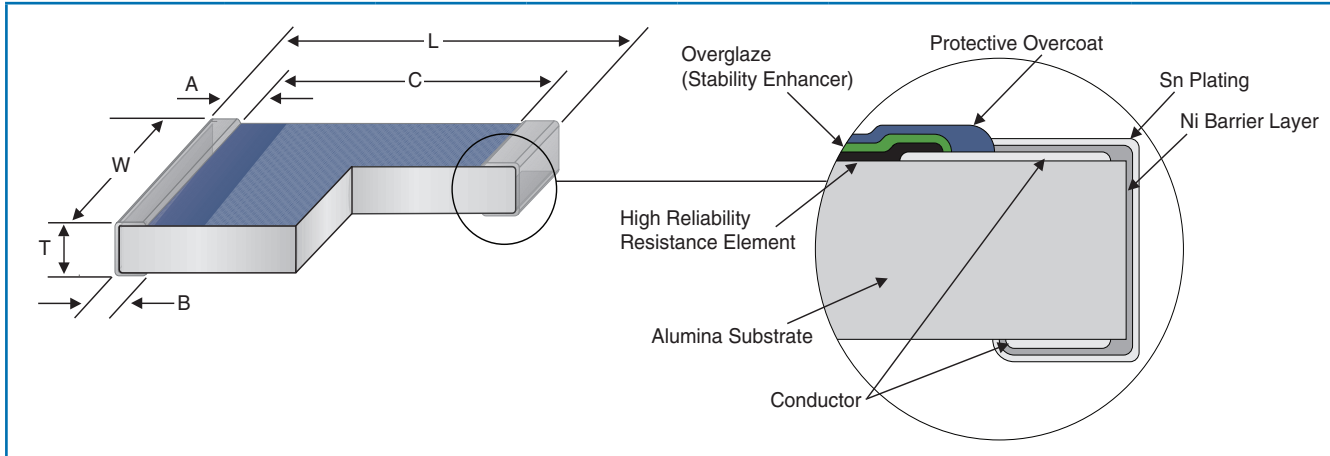


| Part Type | L (mm) | W (mm) | T max (mm) | A (mm) | B min (mm) | C (mm) | Weight (grams) |
|---|---|---|---|---|---|---|---|
| 1206 | 3.2±0.4 | 1.6±0.2 | 0.7 | 0.4±0.15 | 0.4±0.2 | 1.7 | 0.020 |
| 2010 | 5.1±0.3 | 2.5±0.2 | 0.8 | 0.6±0.25 | 0.6±0.3 | 3.0 | 0.036 |
| 2512 | 6.5±0.3 | 3.2±0.2 | 0.8 | 0.6±0.25 | 0.6±0.3 | 4.4 | 0.055 |

**Construction:**
Thick film resistor material, overglaze and organic protection are screen printed on a 96% alumina substrate. Wrap-around terminations have an electroplated Ni barrier and pure Sn matte finish, ensuring excellent `leach´ resistance properties and solderability.
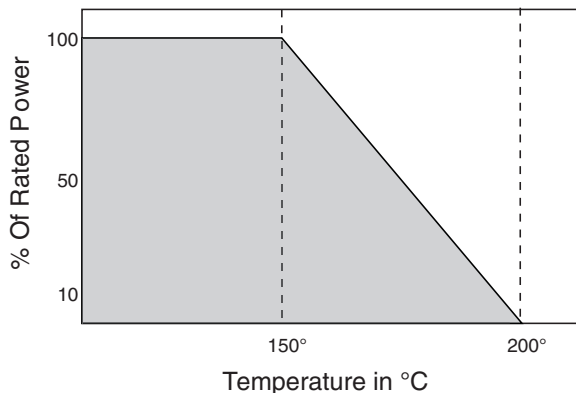
**Marking:**
Components are not marked. Reels are marked with type, value, tolerance, date code and quantity.

**Solvent resistance:**
The body protection is resistant to all normal industrial cleaning solvents suitable for printed circuits.

## Power Derating Data



## Ordering Data

**Prefix** · · · · · · · · · · · · · · · · · · · TKC - HTC - 2512LF - 100R - F

**Chip Type** · · · · · · · · · · · · · · · · · · · · ·
HTC (High Temperature Chip)

**Chip Size and Termination** · · · · · · · · · · · · · · · · · ·
1206LF = 100% Tin (pb-free) termination
2010LF = 100% Tin (pb-free) termination
2512LF = 100% Tin (pb-free) termination

**Resistance Value (4 Digit Code)** · · · · · · · · · · · · · · · · · · · ·
Ex. 1R00 = 1Ω; 100R = 100Ω; 10K0 =10KΩ; 1M50 = 1.5MΩ

**Tolerance Code** · · · · · · · · · · · · · · · · · · · · · · · · ·
J = ±5%; F = ±1%; D = ±0.5%

For additional information or to discuss your specific requirements, please contact our Applications Team using the contact details below.