# Anti Sulphur Chip Resistors

## ASC Series



**Features:**

- Special construction resists sulphide growth
- Withstands sulphur bearing fume environment
- Tested to ASTM-B809 (“Flowers-of-Sulphur”)
- Suitable for industrial, automotive and roadside uses
- AEC-Q200 qualified

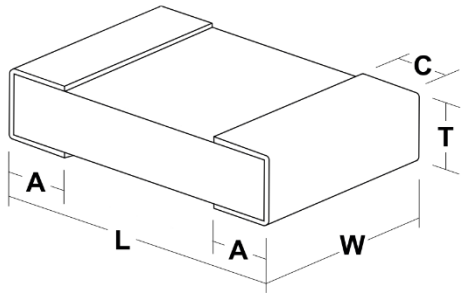
All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863

## Electrical Data

| | | 0402 | 0603 | 0805 | 1206 | 1210 | 2010 | 2512 |
|---|---|---|---|---|---|---|---|---|
| Power rating @70°C | W | 0.063 | 0.1 | 0.125 | 0.25 | 0.33 | 0.75 | 1 |
| Resistance range | ohms | 1R0 to 10M | | | | | | |
| Limiting element voltage | V | 50 | | 150 | 200 | | | 250 |
| TCR | ppm/°C | <10R: 200, 10R-1M0: 100, >1M0: 200 | | | | | | |
| Resistance tolerance | % | 1 | | | | | | |
| Standard values | | E24 or E96 | | | | | | |
| Ambient temperature range | °C | -55 to 155 | | | | | | |
| Current rating (zero-ohm) | A | 1 | | 2 | | 2.5 | 3.5 | 4 |

## Physical Data

| Dimensions in mm and weight in mg | | | | | | |
|---|---|---|---|---|---|---|
| | L | W | T | C | A | Wt. |
| **0402** | 1 ±0.05 | 0.5 ±0.05 | 0.35 ±0.05 | 0.2 ±0.1 | | 0.62 |
| **0603** | 1.6 ±0.1 | 0.8 ±0.1 | 0.45 ±0.1 | 0.3 ±0.2 | | 2.04 |
| **0805** | 2 ±0.1 | 1.25 ±0.1 | 0.5 ±0.1 | 0.35 ±0.2 | 0.4 ±0.2 | 4.37 |
| **1206** | 3.1 ±0.1 | 1.55 ±0.1 | 0.55 ±0.1 | 0.5 ±0.25 | 0.5 ±0.2 | 8.95 |
| **1210** | 3.2 ±0.2 | 2.6 ±0.15 | | | | 16 |
| **2010** | 5 ±0.2 | 2.5 ±0.15 | | 0.6 ±0.25 | | 24.2 |
| **2512** | 6.35 ±0.2 | 3.2 ±0.15 | | | | 39.4 |




### Construction

Conductors, resistive element, glass inner protection and epoxy outer protection are applied to a 96% alumina substrate. The chips are supplied with wrap-around terminations suitable for soldering.

### Terminations

The terminations have an electroplated nickel barrier and 100% matt tin finish.

### Marking

Size 0402 has no marking. All other resistors are marked as described in Marking Codes used on Chip Resistors: https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Application-Note/TN004-Methods-for-Marking-Values-on-Resistors.pdf.

### Solvent Resistance

The body protection and marking are resistant to all normal cleaning solvents suitable for printed circuits.



TT Electronics reserves the right to make changes in product specification without notice or liability.
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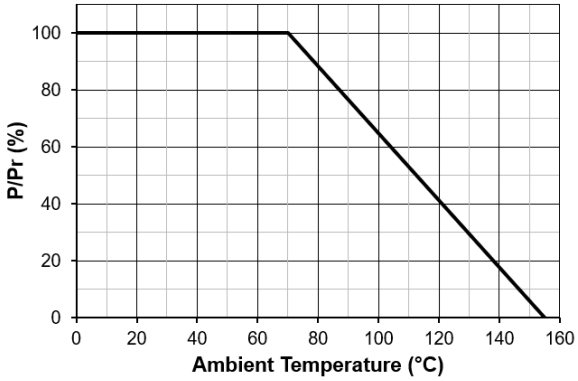
## ASC Series

## Performance Data

| | | Maximum |
|---|---|---|
| Load at rated power: 1000 hours cyclic load at 70°C | ±ΔR% | 2 [2] |
| Short term overload: Lesser of 6.25x$P_r$ or 2xLEV, 5s | ±ΔR% | 1 [1] |
| Hydrogen sulphide: 1000 hours, 3-5ppm $H_2S$, 50 ±2°C, 92 ±1% RH, no load | ±ΔR% | 0.5, no visual defects |
| Dry heat: 1000 hours at 155°C | ±ΔR% | 1 [1] |
| Damp heat: 1000 hours at 40°C, 90-95% RH | ±ΔR% | 2 [2] |
| Temperature rapid change: 5 cycles, -55 to 155°C | ±ΔR% | 0.5 [1] |
| Resistance to solder heat: 260±5°C for 10s | ±ΔR% | 0.5 [1] |
| Solderability: 245±5°C for 3s | | ≥95% coverage |
| Solder leaching: 260±5°C for 30s | | Leached area ≤10% total, ≤5% individual |
| Board flex: once for 5s, 2010 & 2512: 2mm, smaller sizes: 3mm | ±ΔR% | 1 [1] |
| Insulation resistance: 2xLEV for 60s | ohms | >10G |

Note 1: Plus 0.05Ω  Note 2: Plus 0.1Ω

**Temperature Derating**




## Packaging

ASC resistors are supplied taped and reeled on a 7 or 10” reel as per IEC 286-3. The tape is 12mm wide embossed plastic tape for 2010 and 2512 sizes and 8mm wide paper tape for the smaller sizes. For dimensional details see:
https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Application-Note/PS001-Packing-of-General-Purpose-Chip-Resistors.pdf.

## Ordering Procedure

**Example: ASC1210-22RFT5** (1210, 22 ohms ±1%, Pb-free)

| A | S | C | 1 | 2 | 1 | 0 | - | 2 | 2 | R | | F | T | 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 2 | | | | | 3 | | | | 4 | 5 | | |

| 1 Series | 2 Size | 3 Value | 4 Tolerance | 5 Packing | | |
|---|---|---|---|---|---|---|
| ASC | 0402 | E24/E96 = 3/4 characters | F = ±1% | T10 | 0402 | 10,000 / 7” reel |
| | 0603 | R = ohms | Blank for jumper | T5 | 0603, 0805, 1206, 1210 | 5000 / 10” reel |
| | 0805 | K = kilohms | | T4 | 2010, 2512 | 4000 / 7” reel |
| | 1206 | M = megohms | | | | |
| | 1210 | R000 = jumper | | | | |
| | 2010 | | | | | |
| | 2512 | | | | | |



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