

Single Value Chip Resistor



Thin film resistors are often an excellent solution for analog design problems where space is limited and high packing density is required. Due to their Tantalum Nitride resistive layer these resistors are stable 0.07 % (2000 hours, rated power at 70 °C) and moisture resistant.

FEATURES

- Small size 20 mil square
- Resistance range 10 Ω to 1 MΩ
- Resistor material: self-passivating Tantalum nitride
- Silicon substrate for good power dissipation
- Low cost

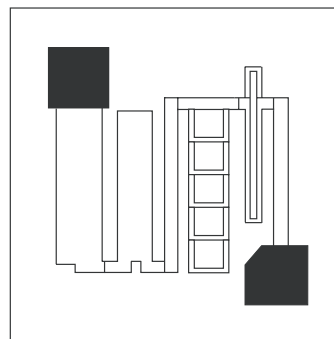


RoHS
COMPLIANT

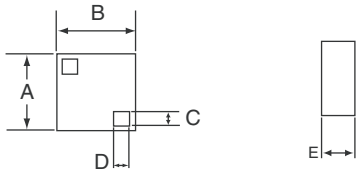
TYPICAL PERFORMANCE

| | ABS |
|-----|------------|
| TCR | 100 ppm/°C |
| TOL | 0.5 % |

SCHEMATIC AND PATTERN



| STANDARD ELECTRICAL SPECIFICATIONS | | |
|------------------------------------|--|----------------------------|
| TEST | SPECIFICATIONS | CONDITIONS |
| MATERIAL | TANTALUM NITRIDE | |
| Resistance Range | 10 Ω to 1 MΩ | |
| Absolute TCR | ± 100 ppm/°C (± 50 ppm/°C on request) | - 55 °C to + 155 °C |
| Absolute Tolerance | ± 0.5 %, ± 1 %, ± 2 % | |
| Power Dissipation | 100 mW at 25 °C, 50 mW at + 70 °C, 25 mW at + 125 °C | |
| Stability | ± 0.07 % typical, ± 0.1 Max. | 2000 hrs. at + 70 °C at Pn |
| Voltage Coefficient | < 0.1 ppm/Volt | |
| Working Voltage | 50 Volts DC | |
| Operating Temperature Range | - 55 °C to + 155 °C | |
| Storage Temperature Range | - 55 °C to + 155 °C | |
| Noise | < - 35 dB typical | MIL-STD-202 Method 308 |
| Thermal EMF | < 0.01 μV/°C | |
| Shelf Life Stability | 100 ppm | 1 year at + 25 °C |

DIMENSIONS in inches and millimeters


| DIMENSION | INCHES | MILLIMETERS |
|-----------|---------------|-------------|
| A | 0.021 ± 0.002 | 0.55 ± 0.10 |
| B | 0.021 ± 0.002 | 0.55 ± 0.10 |
| C | 0.004 | 0.10 |
| D | 0.004 | 0.10 |
| E | 0.015 | 0.40 Max. |

| MECHANICAL SPECIFICATIONS | |
|---------------------------|--------------------------------------|
| Resistive Element | Tantalum Nitride |
| Passivation | Tantalum Pentoxide (Autopassivation) |
| Substrate Material | Standard Silicon |
| Bonding Pads | Aluminum |

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------|-----------|--------|----------------------|------------------|-------|---|--------|---|-----------------------------|---|---|---|---|--------------|--|--|--|-------|--|--|-----------|--|--|--------|--|--|--|--|--|--|--|----------------------|--|--|---|--|--|-----------------------------|--|--|--|--|
| New Global Part Numbering: TA22-100KD0016 (preferred part number format) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">T</td> <td style="text-align: center;">A</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">-</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">K</td> <td style="text-align: center;">D</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1</td> <td style="text-align: center;">6</td> </tr> <tr> <td colspan="4" style="text-align: center;">GLOBAL MODEL</td> <td colspan="3" style="text-align: center;">VALUE</td> <td colspan="3" style="text-align: center;">TOLERANCE</td> <td colspan="4" style="text-align: center;">OPTION</td> </tr> <tr> <td colspan="4"></td> <td colspan="3" style="text-align: center;">Decimal R, K or M</td> <td colspan="3" style="text-align: center;"> D = ± 0.5 % F = ± 1.0 % G = ± 2.0 % </td> <td colspan="4" style="text-align: center;">leave blank if no option</td> </tr> </table> | T | A | 2 | 2 | - | 1 | 0 | 0 | K | D | 0 | 0 | 1 | 6 | GLOBAL MODEL | | | | VALUE | | | TOLERANCE | | | OPTION | | | | | | | | Decimal R, K or M | | | D = ± 0.5 % F = ± 1.0 % G = ± 2.0 % | | | leave blank if no option | | | | |
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| Historical Part Number example: TA22 10K 0.5 % R0016 (will continue to be accepted) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| HISTORICAL MODEL | VALUE | TOLERANCE | OPTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



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