High Value (up to 100 MΩ) Wirebondable
1 mm² Thin Film Chip Resistors

FEATURES
- Small size 40 mil x 40 mil (1 mm x 1 mm)
- Very high ohmic value up to 100 MΩ
- Good stability 0.1 % (2000 h, rated power at +70 °C)
- Aluminum or gold terminations
- Wirebondable
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

DESIGN SUPPORT TOOLS

Chromium silicon thin film is very well suited to produce high density and high ohmic value resistor chips. These high ohmic value chip resistors are available with improved performances and size when compared to thick film counterparts.

SCHEMATIC

STANDARD ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SIZE</th>
<th>RESISTANCE RANGE Ω</th>
<th>RATED POWER P70 °C W</th>
<th>LIMITING ELEMENT VOLTAGE V</th>
<th>TOLERANCE ± %</th>
<th>TEMPERATURE COEFFICIENT ± ppm/°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS44</td>
<td>0404</td>
<td>400K to 100M</td>
<td>0.380</td>
<td>100</td>
<td>0.5, 1.0, 2.0, 5.0</td>
<td>50 (1), 100</td>
</tr>
</tbody>
</table>

Note
(1) On request

CLIMATIC SPECIFICATIONS

- Operating temperature range: -55 °C to +155 °C
- Storage temperature range: -55 °C to +155 °C

MECHANICAL SPECIFICATIONS

- Resistive element: Chromium Silicon
- Passivation: Silicon Nitride
- Substrate material: Silicon (consult Vishay for Al2O3)
- Bonding pads: Aluminum or gold

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>TEST</th>
<th>SPECIFICATIONS</th>
<th>CONDITIONS</th>
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</thead>
<tbody>
<tr>
<td>MATERIAL</td>
<td>PASSIVATED CHROMIUM SILICON</td>
<td></td>
</tr>
<tr>
<td>Stability</td>
<td>± 0.1 % typical, ± 0.2 maximum</td>
<td>2000 h at +70 °C at Pn</td>
</tr>
<tr>
<td>Limiting voltage</td>
<td>100 VDC</td>
<td>Higher on Al2O3</td>
</tr>
<tr>
<td>Noise</td>
<td>&lt; - 20 dB typical</td>
<td>MIL-STD-202 method 308</td>
</tr>
<tr>
<td>Thermal EMF</td>
<td>&lt; 0.01 µV/°C</td>
<td></td>
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<tr>
<td>Shelf life stability</td>
<td>200 ppm</td>
<td>1 year at +25 °C</td>
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</tbody>
</table>

Note
- Rated voltage = \(\sqrt{(\text{Power rating} \times \text{Resistance value})}\) or limiting voltage, whichever is lower

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DIMENSIONS

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>INCHES</th>
<th>MILLIMETERS</th>
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<tbody>
<tr>
<td>A</td>
<td>0.043 ± 0.002</td>
<td>1.09 ± 0.05</td>
</tr>
<tr>
<td>B</td>
<td>0.043 ± 0.002</td>
<td>1.09 ± 0.05</td>
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<tr>
<td>C</td>
<td>0.004</td>
<td>0.10</td>
</tr>
<tr>
<td>D</td>
<td>0.004</td>
<td>0.10</td>
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<tr>
<td>E</td>
<td>0.015</td>
<td>0.40 max.</td>
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GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CS44-100MJ0099

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<thead>
<tr>
<th>C</th>
<th>S</th>
<th>4</th>
<th>4</th>
<th>-</th>
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<th>0</th>
<th>0</th>
<th>M</th>
<th>J</th>
<th>0</th>
<th>0</th>
<th>9</th>
<th>9</th>
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<tbody>
<tr>
<td>C</td>
<td>S</td>
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<td>-</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>M</td>
<td>J</td>
<td>0</td>
<td>0</td>
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</tr>
</tbody>
</table>

GLOBAL MODEL

VALUE

TOLERANCE

TERMINATIONS

OPTION

Decimal

K or M

D = ± 0.5 %

F = ± 1.0 %

G = ± 2.0 %

J = ± 5.0 %

Blank = aluminum

G = gold

Leave blank if no option
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