GENERAL DESCRIPTION

These ruggedly constructed, ultraminiature (EIA 0402, 1005 metric) equalizers combine high-performance tantalum nitride (TaN) resistive elements and silicon/oxygen/nitrogen (SiON) capacitive elements with AVX’s proprietary, automotive-qualified, glass-sandwich FLEXITERM® surface-mount technology, which provides an extra measure of protection against flexure damage during installation. The new GEQ Series equalizers are also manufactured with 100% laser trimming to achieve tight tolerances and offer a low 0.5mm profile, a 125mW power rating, resistance values spanning 10–50Ω, and capacitance values extending from 1–50pF.

Rated for a wide range of operating temperatures (-55°C to +125°C) and compliant with RoHS, ideal applications for the series extend across the optoelectronic, telecommunications, broadband, military, electronic warfare, space, test, and instrumentation markets and include optical transceiver modules, broadband receivers, and transmission and receiver optical subassemblies (TOSA and ROSA).

FEATURES

- EIA 0402 Case Size
- Resistance Range: 10 to 50 Ω typ.
- Capacitance Range: 1 to 50 pF typ.
- Parallel Configurations
- Power Rating: 125 mW
- Operating Temperature: -55°C to +125°C
- Laser Trimmed Resistors
- RoHS Compliant

APPLICATIONS

- Optical Transceiver Modules
- Broadband Receiver
- TOSA / ROSA

MARKETS

- Opto-electronics
- Telecom
- Broadband Jamming for EW
- Military
- Instrumentation and Test

HOW TO ORDER

RCN  
25R0  
F  
05R0  
J  
T  
TR

AVX Series  
0402  
Resistance Value (Ω)  
3 significant digits  
R = decimal point

Resistance Tolerance  
F = 1%

Capacitance Value (pF)  
3 significant digits  
R = decimal point

Capacitance Tolerance  
J* = 5%  
K* = 10%  
M* = 20%  
*Minimum tolerance = +/- 0.1pF

Terminations  
T = NiSn Plated

Packaging  
TR = Tape & Reel

For other RC Combinations and EIA Sizes contact factory.

*For other RC Combinations and EIA Sizes contact factory.

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RC Equalizer Network

SPECIFICATIONS

Package Size: EIA 0402  
Design: Glass wafer sandwich  
Termination: NiSn plated  
Power Rating: 125 mW  

Operating Temperature Range: -55°C to +125°C  
Tolerance: Resistor: 1-5%, Capacitor: 5-20%  
Resistance Range: 10 to 50 Ω (typical)  
Capacitance Range: 1 to 50 pF (typical)

RESISTOR MATERIAL

<table>
<thead>
<tr>
<th>Material</th>
<th>Thin Film Resistors</th>
<th>TaN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Sheet Resistivity (ohm/sq)</td>
<td>10 to 100</td>
<td></td>
</tr>
<tr>
<td>TCR (ppm/°C, -25 to 125°C)</td>
<td>-100 to -150</td>
<td></td>
</tr>
<tr>
<td>Stability (Change after 1000 hours @ 125°C)</td>
<td>1.0%</td>
<td></td>
</tr>
</tbody>
</table>

CAPACITOR MATERIAL

<table>
<thead>
<tr>
<th>Material</th>
<th>SiON</th>
</tr>
</thead>
<tbody>
<tr>
<td>pF/mm Typical</td>
<td>50 to 100</td>
</tr>
<tr>
<td>BDV (v/μm)</td>
<td>600</td>
</tr>
<tr>
<td>DF</td>
<td>≤0.1%</td>
</tr>
<tr>
<td>TCC (ppm/°C, -25 to 125°C)</td>
<td>±60</td>
</tr>
</tbody>
</table>

ENVIRONMENTAL TESTS

<table>
<thead>
<tr>
<th>Reliability Test</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Test</td>
<td>1000 Hrs. @ 125°C @ 50 mW</td>
</tr>
<tr>
<td>85/85 Temp./Humidity Breakdown</td>
<td>1080 Hrs. @ 50 mW</td>
</tr>
<tr>
<td>Thermal Cycle</td>
<td>100 cycles @ -40 to 125°C</td>
</tr>
<tr>
<td>Termination Strength</td>
<td>200 g for 50 seconds</td>
</tr>
<tr>
<td></td>
<td>(Dage Tester)x</td>
</tr>
</tbody>
</table>

DIMENSIONS

<table>
<thead>
<tr>
<th>Size (EIA)</th>
<th>Length (L)</th>
<th>Width (W)</th>
<th>Thickness (T)</th>
<th>Termination (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0402</td>
<td>1.02 ± 0.051</td>
<td>0.51 ± 0.051</td>
<td>.020 ± 0.004</td>
<td>.25 ± 0.051</td>
</tr>
</tbody>
</table>

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