thin (metal) film flat chip resistors

features

- Nickel chromium thin film resistor element
- Products with lead-free terminations meet EU RoHS requirements

For further information on packaging, please refer to Appendix A

dimensions and construction

For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the above derating curve.

ordering information

<table>
<thead>
<tr>
<th>RN73</th>
<th>2B</th>
<th>T</th>
<th>Type</th>
<th>Size</th>
<th>Termination Material</th>
<th>Packaging</th>
<th>Nominal Resistance</th>
<th>Tolerance</th>
<th>T.C.R. (ppm/°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN73</td>
<td></td>
<td></td>
<td>1E</td>
<td>0402</td>
<td>T: Sn</td>
<td>TP: 0402: 7&quot; 2mm pitch punch paper</td>
<td>3 significant figures + 1 multiplier</td>
<td>A: ±0.05%</td>
<td>05</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1J</td>
<td></td>
<td></td>
<td>TD: 0603, 0805, 1206, 1210: 7&quot; 4mm pitch punched paper</td>
<td>&quot;R&quot; indicates decimal on value &lt;100Ω</td>
<td>B: ±0.1%</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2A</td>
<td></td>
<td></td>
<td>TDD: 0603, 0805, 1206, 1210: 10&quot; paper tape</td>
<td>C: ±0.25%</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2B</td>
<td></td>
<td></td>
<td>TE: 0805, 1206, 1210: 7&quot; embossed plastic</td>
<td>D: ±0.5%</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2E</td>
<td></td>
<td></td>
<td>TED: 0805, 1206, 1210: 10&quot; embossed plastic</td>
<td>F: ±1.0%</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

KOA Speer Electronics, Inc. • 199 Bolivar Drive • Bradford, PA 16701 • USA • 814-362-5536 • Fax: 814-362-8883 • www.koaspeer.com
### Resistors

If the implementation is unavoidable, then please evaluate the products beforehand.

When high-pressure shower cleaning is implemented, there is a possibility of exfoliation of the top electrodes caused by the water pressure stress so please avoid the implementation.

- Ionic impurities such as flux etc. that are attached to these products or those mounted onto a PCB, negatively affect their moisture resistance, corrosion resistance, etc. The flux may contain ionic substances like chlorine, acid, etc. while perspiration and saliva include ionic impurities like sodium (Na\(^+\)), chlorine (Cl\(^-\)) etc. Therefore these kinds of ionic substances may induce electrical corrosion when they invade into the products. Either thorough washing or using RMA solder and flux are necessary since lead-free solder contains ionic substances. Washing process is needed, before putting on moisture proof material in the mounting and the parts are destructed by static electricity (1kV and more: 1J, 2A, 2B, 2E 0.5kV and more: Human Body Model 100pF 1.5 kV).

- Dryness or after the parts are given vibration for a long time as they are packaged on the tapes. Similarly, care should be given not to apply the excessive static electricity when mounting on the boards.

### Precautions for Use

- The properly and electrostatically measured taping materials are used for the components, but attention should be paid to the fact that there is some danger the parts absorb on the top tapes to cause a failure in the mounting and the parts are destructed by static electricity (1kV and more: 1J, 2A, 2B, 2E 0.5kV and more: 1E, Human Body Model 100pF 1.5kV) to change the resistance in the conditions of an excessive dryness or after the parts are given vibration for a long time as they are packaged on the tapes. Similarly, care should be given not to apply the excessive static electricity when mounting on the boards.

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- The upper electrodes could be peeled off when a heat-resistant masking tape is attached to the mounted chip resistors and then detached from them. It is confirmed that the adhesiveness gets stronger due to the exposure to heat under mounting. Accordingly, we recommend the use of masking tape be refined. If the use of heat-resistant masking tape is unavoidable, then please make sure that the adhesives on the tape do not directly come in contact with the product.

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### Environmental Applications

#### Performance Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Requirement Limit</th>
<th>( \Delta R ) (% +0.05Q)</th>
<th>Typical Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance</td>
<td>Within specified tolerance</td>
<td>—</td>
<td>25°C</td>
</tr>
<tr>
<td>T.C.R.</td>
<td>Within specified T.C.R.</td>
<td>—</td>
<td>+25°C/+125°C: T.C.R. = ±5 (X10^-6/K) +25°C/-55°C and +25°C/+125°C: all others</td>
</tr>
<tr>
<td>Overload (Short time)</td>
<td>General: ±0.1%</td>
<td>±0.01%</td>
<td>Rated Voltage x 2.5 or Max. overload voltage, whichever is less for 5 seconds</td>
</tr>
<tr>
<td>High Power: ±0.5%</td>
<td>±0.03%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance to Solder Heat</td>
<td>±0.1%</td>
<td>±0.04%</td>
<td>260°C ± 5°C, 10 seconds ± 1 second</td>
</tr>
<tr>
<td>Rapid Change of Temperature</td>
<td>±0.25%</td>
<td>±0.03%</td>
<td>-55°C (30 minutes), +125°C (30 minutes), 300 cycles</td>
</tr>
<tr>
<td>Moisture Resistance</td>
<td>General: ±0.5%</td>
<td>±0.06%</td>
<td>40°C ± 2°C, 90%-95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle</td>
</tr>
<tr>
<td>High Power: ±0.5%</td>
<td>±0.07%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endurance at 70°C</td>
<td>General: ±0.25%</td>
<td>±0.02%</td>
<td>70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle</td>
</tr>
<tr>
<td>High Power: ±0.5%</td>
<td>±0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Temperature Exposure</td>
<td>±0.6%</td>
<td>±0.25%</td>
<td>+125°C, 1000 hours</td>
</tr>
<tr>
<td>—</td>
<td>±0.25%</td>
<td></td>
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For Surface Temperature Rise Graph see Environmental Applications. Additional environmental applications can also be found at www.koaspeer.com.

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