Braking / Energy-Dissipation / High-Voltage Resistors

✓ Expert design to your form factor and electrical energy dissipation requirements
✓ Small form factor direct element liquid cooled resistors
✓ Air and liquid cooled resistors
✓ High voltage resistors
✓ High power (KW) and High energy (KJ) discharge
✓ Minimize storage system service downtime by quickly discharging dangerously high voltages and improve safety for service technicians

<table>
<thead>
<tr>
<th>Direct Liquid Cooled</th>
<th>Liquid Cooled</th>
<th>High Energy Disc(s)</th>
<th>Air Cooled</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Direct Liquid Cooled" /></td>
<td><img src="image2.png" alt="Liquid Cooled" /></td>
<td><img src="image3.png" alt="High Energy Disc(s)" /></td>
<td><img src="image4.png" alt="Air Cooled" /></td>
</tr>
<tr>
<td>• 0.25 to 100 ohms configurations</td>
<td>• 0.5 to 56K ohm</td>
<td>• 5 – 150 Ohms</td>
<td>• Many different ohmic values</td>
</tr>
<tr>
<td>• 50,000 watts for short time intervals</td>
<td>• 5,000 watts for short intervals (10s)</td>
<td>• One disc up to 80KJ</td>
<td>• 1KW to 2MW power</td>
</tr>
<tr>
<td>• Element in direct contact with coolant option</td>
<td>• Non inductive option</td>
<td>• Single of multiple discs</td>
<td>• Stainless steel</td>
</tr>
<tr>
<td>• No heatsinks</td>
<td>• Up to six resistors on one tube</td>
<td>• Natural cooling</td>
<td>• Natural of forced, air cooling</td>
</tr>
<tr>
<td>• Small mechanical form factor</td>
<td>• 300 mm wide x 50mm high (mechanical size varies according to value and power)</td>
<td>• 21mm wide x 137mm high (single disk)</td>
<td>• Mechanical size varies according to value and power</td>
</tr>
</tbody>
</table>

High Voltage

• 10 – 10 Tera-Ohms
• 300KV – 800KV

Request a Quote

Rev: 1.4
Surge and Sustainable Power Handling Capability

Applications

- Braking
- Industrial
- Railroad
- Military
- Electric/Hybrid Cars and Buses
- Grid Storage
- Wind Farms
- Solar Farms

Additional Power Products:

- Many values and configurations
- Highlighted Product: Thick Film Module
  - 0.27 to 18 ohm
  - Energy absorption
    - Repetitive operation: 25 J/t = 50 μs
    - Accidental operation: 100 J/t = 50 μs / 100 impulsions max.
  - 750 watts
  - Non inductive
  - Thick film on ceramic construction
  - 67mm wide x 40mm wide

About ES Components:

ES Components LLC is a 37+ year old company.

NEW! Now a Woman Owned small business Franchised Distributor and Stocking Technical Sales Representative.

Certifications: AS9120 – ITAR Registered – JESD31

Customers worldwide depend on ESC for the products and services they need to design, develop, and manufacture the most leading edge high reliability products.