Surge arrester

2-electrode arrester

Series/Type: EM350X
Ordering code: B88069X0590S102
Version/Date: Issue 06 / 2014-11-10
**Features**

- Small size
- Fast response time
- High current handling capability
- Stable performance over service life
- Low capacitance and insertion loss
- High insulation resistance
- RoHS-compatible

**Applications**

- Power supplies
- Antenna protection
- Air condition
- Modem
- Consumer electronics
- Dataline protection

**Electrical specifications**

<table>
<thead>
<tr>
<th></th>
<th>DC spark-over voltage 1,2</th>
<th>Impulse spark-over voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
<td>at 100 V/µs</td>
</tr>
<tr>
<td></td>
<td>Min.</td>
<td>- for 99% of measured values</td>
</tr>
<tr>
<td></td>
<td>Max.</td>
<td>- for 99% of measured values</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- typical values of distribution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- typical values of distribution</td>
</tr>
<tr>
<td>Min.</td>
<td>± 20</td>
<td>&lt; 800</td>
</tr>
<tr>
<td>Max.</td>
<td>280</td>
<td>&lt; 700</td>
</tr>
<tr>
<td></td>
<td>420</td>
<td>&lt; 900</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt; 800</td>
</tr>
</tbody>
</table>

**Service life**

<table>
<thead>
<tr>
<th></th>
<th>10 operations 50 Hz, 1 s</th>
<th>1 operation 50 Hz, 0.18 s (9 cycles)</th>
<th>10 operations 8/20 µs</th>
<th>1 operation 8/20 µs</th>
<th>1 operation 10/350 µs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.5</td>
<td>5</td>
<td>2.5</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>A</td>
<td>kA</td>
<td>kA</td>
<td>kA</td>
</tr>
</tbody>
</table>

**Insulation resistance at 100 V_{DC}**

<table>
<thead>
<tr>
<th></th>
<th>&gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GΩ</td>
</tr>
</tbody>
</table>

**Capacitance at 1 MHz**

<table>
<thead>
<tr>
<th></th>
<th>&lt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pF</td>
</tr>
</tbody>
</table>

**Arc voltage at 1 A**

<table>
<thead>
<tr>
<th></th>
<th>~ 10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V</td>
</tr>
</tbody>
</table>

**Glow to arc transition current**

<table>
<thead>
<tr>
<th></th>
<th>&lt; 0.3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
</tbody>
</table>

**Glow voltage**

<table>
<thead>
<tr>
<th></th>
<th>~ 60</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V</td>
</tr>
</tbody>
</table>

**Weight**

<table>
<thead>
<tr>
<th></th>
<th>~ 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>g</td>
</tr>
</tbody>
</table>

**Operation and storage temperature**

<table>
<thead>
<tr>
<th></th>
<th>–40 ... +90</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

**Climatic category (IEC 60068-1)**

|                      | 40/ 90/ 21               |

**Marking, red positive**

<table>
<thead>
<tr>
<th></th>
<th>EPCOS EM 350 YY O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EM - Series</td>
</tr>
<tr>
<td></td>
<td>350 - Nominal voltage</td>
</tr>
<tr>
<td></td>
<td>YY - Year of production</td>
</tr>
<tr>
<td></td>
<td>O - Non radioactive</td>
</tr>
</tbody>
</table>

**Certification**

|                      | UL 497B (E163070)        |

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1) At delivery AQL 0.65 level II, DIN ISO 2859
2) In ionized mode

Terms in accordance with ITU-T Rec. K.12; IEC 61663-2 and IEC 61643-311.
Dimensional drawing in mm

Ordering code and packing advice

\[ B88069X0590S102 = 100 \text{ pcs. on 5 taped stripes} \]
Soldering parameter

Wave soldering

- Normal curve
- Unit curve

Wave profile features
- **Pb-free assembly**
  - **Solder**: Sn 95.5 / Ag 3.8 / Cu 0.7
  - **Solder bath temperature**: 263 (±3) °C
  - **Dwell time**: < 3 s

Soldering profile applied to a single soldering process.

Cautions and warnings

- Do not operate surge arresters in power supply networks, whose maximum operating voltage exceeds the minimum spark-over voltage of the surge arresters.
- Surge arresters may become hot in the event of longer periods of current stress (burn risk). In the event of overload the connectors may fail or the component may be destroyed.
- If the contacts of the surge arresters are defective, current load can cause sparks and loud noises.
- Surge arresters must be handled with care and must not be dropped.
- Do not continue to use damaged surge arresters.

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