



## **Surge arrester**

### **2-electrode arrester**

**Series/Type:** EM400X  
**Ordering code:** B88069X0200S102  
**Version/Date:** Issue 06 / 2014-11-10

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**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**

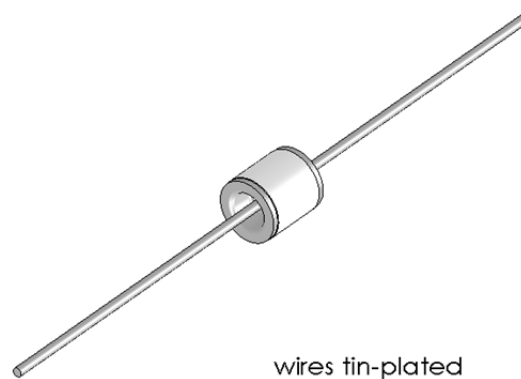
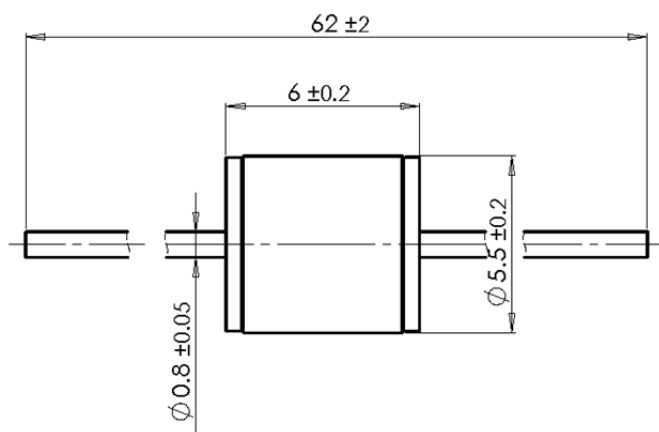
|                                              |                          |                                                                                                                   |                                                                                       |
|----------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| DC spark-over voltage <sup>1) 2)</sup>       |                          | 400                                                                                                               | V                                                                                     |
| Tolerance                                    |                          | ±20                                                                                                               | %                                                                                     |
| Min.                                         |                          | 320                                                                                                               | V                                                                                     |
| Max.                                         |                          | 480                                                                                                               | V                                                                                     |
| Impulse spark-over voltage                   |                          |                                                                                                                   |                                                                                       |
| at 100 V/μs - for 99% of measured values     |                          | < 800                                                                                                             | V                                                                                     |
| - typical values of distribution             |                          | < 750                                                                                                             | V                                                                                     |
| at 1 kV/μs - for 99% of measured values      |                          | < 900                                                                                                             | V                                                                                     |
| - typical values of distribution             |                          | < 850                                                                                                             | V                                                                                     |
| Service life                                 |                          |                                                                                                                   |                                                                                       |
| 10 operations                                | 50 Hz, 1 s               | 2.5                                                                                                               | A                                                                                     |
| 1 operations                                 | 50 Hz, 0.18 s (9 cycles) | 5                                                                                                                 | A                                                                                     |
| 10 Operations [5× (+) & 5× (-)]              | 8/20 μs                  | 2.5                                                                                                               | kA                                                                                    |
| 1 operation                                  | 8/20 μs                  | 5                                                                                                                 | kA                                                                                    |
| 1 operation                                  | 10/350 μs                | 0.5                                                                                                               | kA                                                                                    |
| Insulation resistance at 100 V <sub>DC</sub> |                          | > 1                                                                                                               | GΩ                                                                                    |
| Capacitance at 1 MHz                         |                          | < 1                                                                                                               | pF                                                                                    |
| Arc voltage at 1 A                           |                          | ~ 10                                                                                                              | V                                                                                     |
| Glow to arc transition current               |                          | < 0.3                                                                                                             | A                                                                                     |
| Glow voltage                                 |                          | ~ 60                                                                                                              | V                                                                                     |
| Weight                                       |                          | ~ 1                                                                                                               | g                                                                                     |
| Operation and storage temperature            |                          | -40 ... +90                                                                                                       | °C                                                                                    |
| Climatic category (IEC 60068-1)              |                          | 40/ 90/ 21                                                                                                        |                                                                                       |
| Marking, red positive                        |                          | <b>EPCOSEM 400 YY O</b><br>EM - Series<br>400 - Nominal voltage<br>YY - Year of production<br>O - Non radioactive |                                                                                       |
| Certification                                |                          | UL 497B (E163070)                                                                                                 |  |

<sup>1)</sup> At delivery AQL 0.65 level II, DIN ISO 2859

<sup>2)</sup> In ionized mode

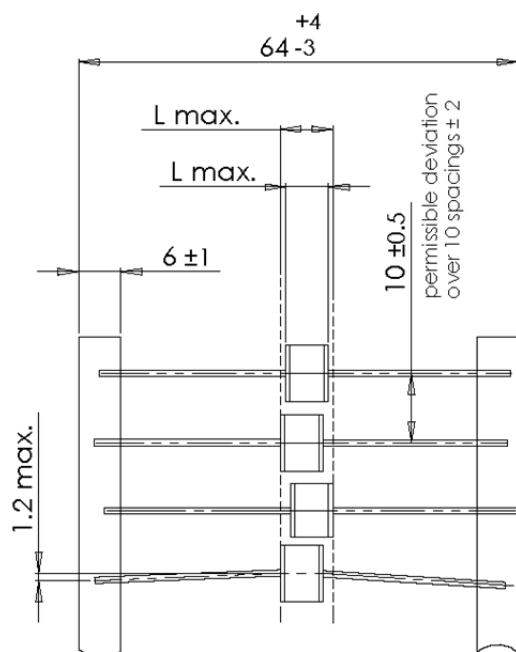
Terms in accordance with ITU-T Rec. K.12; IEC 61663-2 and IEC 61643-311.

### Dimensional drawing in mm

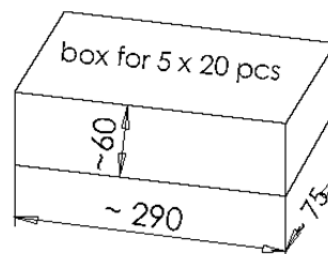


### Ordering code and packing advice

B88069X0200S102 = 100 pcs. on 5 taped stripes

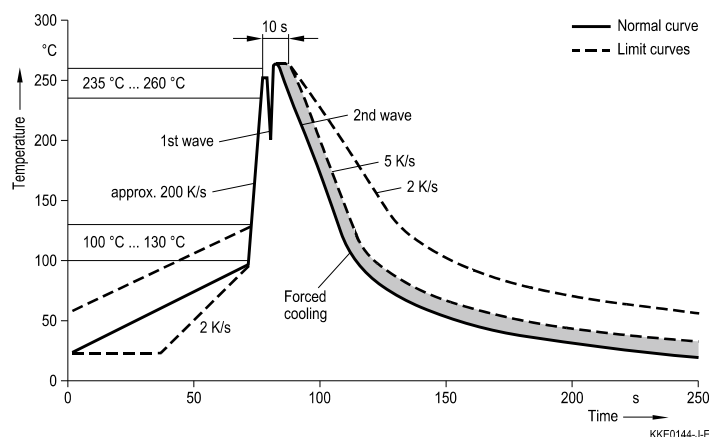


tape acc. to IEC 60286-1



## Soldering parameter

### Wave soldering



| 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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