



## Surge arrester

3-electrode arrester

**Series/Type:** EZ0-A230XSMD  
**Ordering code:** B88069X6881T902  
Version / Date: Issue 03 / 2015-01-20


**Features**

- Small size
- Fast response time
- High current rating
- Stable performance over life
- Very low capacitance
- High insulation resistance
- Excellent SMD handling
- RoHS-compatible

**Applications**

- Modem
- Data lines

**Electrical specifications**

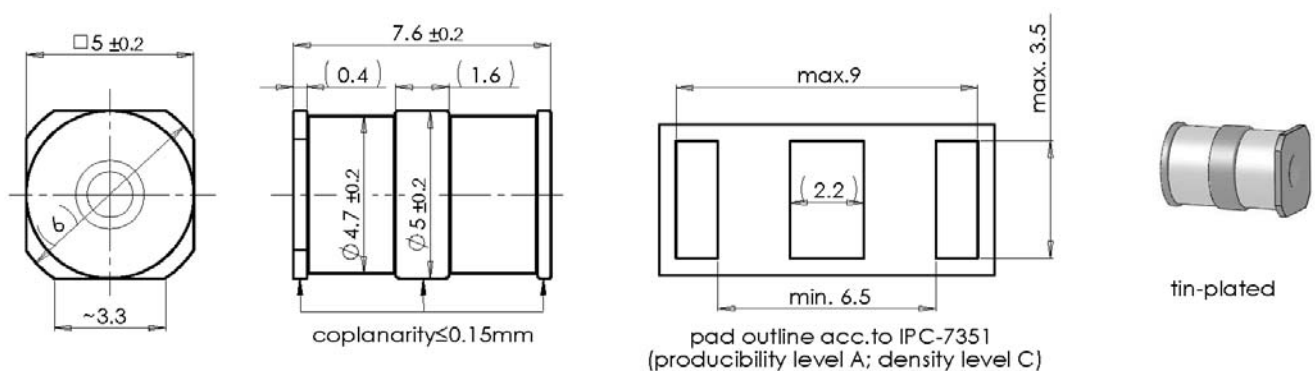
|  |  |  |   |
|--|--|--|---|
| DC spark-over voltage <sup>1) 2) 3)</sup>                  |  | 230<br>± 20  | V<br>%  |
| Impulse spark-over voltage <sup>3)</sup>                   |  |  |   |
| at 100 V/μs  | - for 99% of measured values<br>- typical values of distribution | < 600<br>< 450   | V<br>V  |
| at 1 kV/μs   | - for 99% of measured values<br>- typical values of distribution | < 750<br>< 600   | V<br>V  |
| Service life   |  |  |   |
| 10 operations  | 50 Hz; 1 s <sup>4)</sup>   | 5  | A   |
| 1 operation  | 50 Hz, 0.18 s <sup>4)</sup>                                      | 5  | A   |
| 10 operations [5x (+) & 5x (-)]                            | 8/20 μs <sup>4)</sup>  | 5  | kA  |
| 1 operation  | 10/350 μs <sup>4)</sup>  | 1  | kA  |
| 300 operations (+/-, alternating polarity)                 | 10/1000 μs <sup>4)</sup>   | 200  | A   |
| Insulation resistance at 100 V <sub>DC</sub> <sup>3)</sup> |  | > 1  | GΩ  |
| Capacitance at 1 MHz <sup>3)</sup>                         |  | < 1.5  | pF  |
| Transverse delay time <sup>5)</sup>                        |  | < 0.2  | μs  |
| Arc voltage at 1 A   |  | ~ 10   | V   |
| Glow to arc transition current                             |  | < 0.5  | A   |
| Glow voltage at 0.1 A                                      |  | ~ 60   | V   |
| Weight   |  | ~ 1.0  | g   |
| Operation and storage temperature                          |  | -40 ... +90  | °C  |
| Climatic category (IEC 60068-1)                            |  | 40/ 90/ 21   |   |
| Marking, blue negative                                     |  | <b>EPCOS</b><br><b>EZ 230 YY O</b><br>EZ - Series<br>230 - Nominal voltage<br>YY - Year of production<br>O - Non radioactive |   |
| Certifications   |  | UL 497B (E163070)  |  |

Remarks on next page

- 1) At delivery AQL 0.65 level II, DIN ISO 2859
- 2) In ionized mode
- 3) Tip or ring electrode to center electrode
- 4) Total current through center electrode, half value through tip respectively ring electrode.
- 5) Test according to ITU-T Rec. K.12

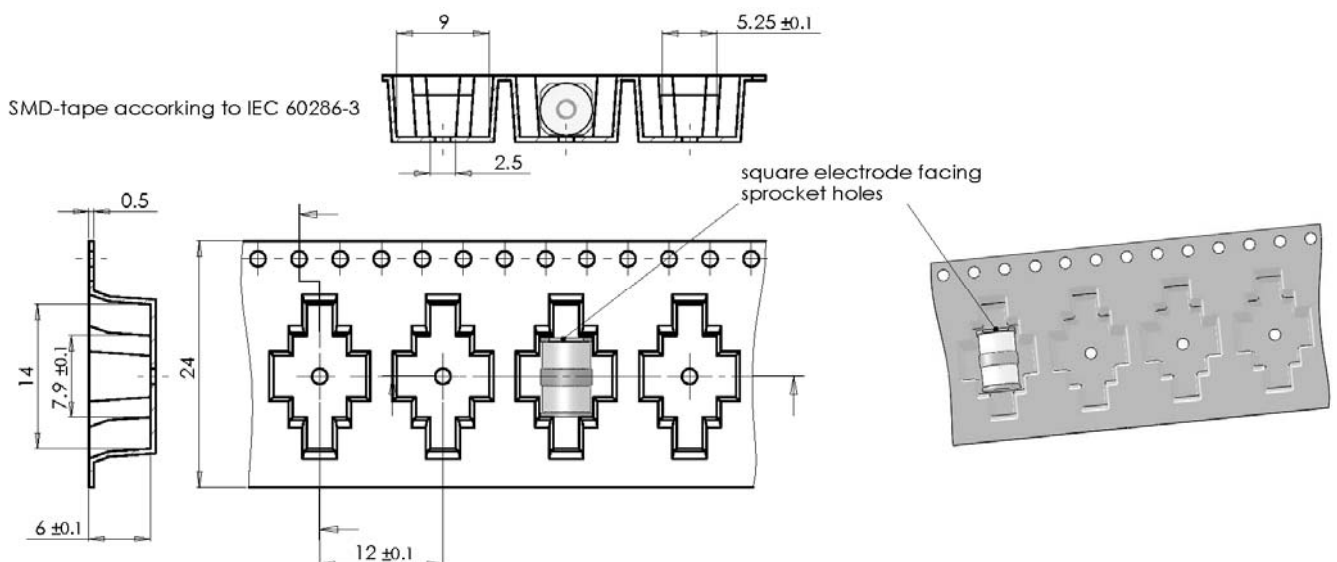
Terms in accordance with ITU-T Rec. K.12; IEC 61663 and IEC 61643-311.

### Dimensional drawing in mm



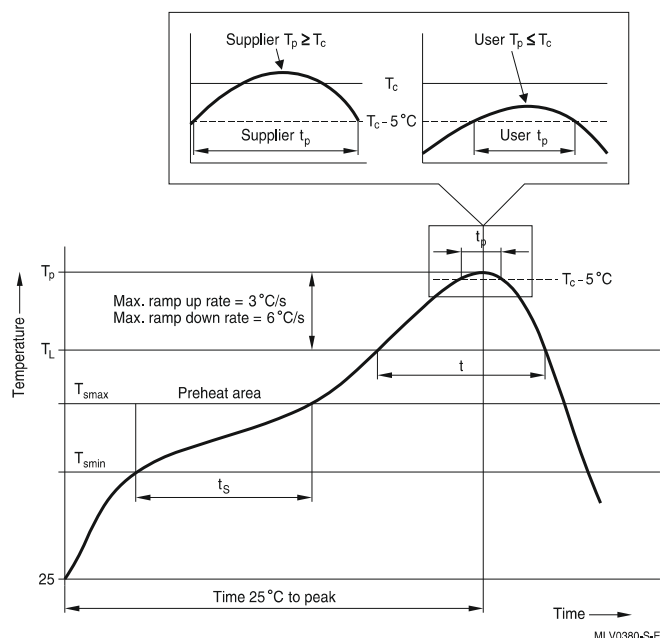
### Ordering code and packing advice

**B88069X6881T902** = SMD-tape with 900 pcs.



## Soldering parameter

### Reflow soldering



| Reflow profile features  |  | Sn- Pb eutectic assembly         | Pb-free assembly                 |
|--|--|----------------------------------|----------------------------------|
| Preheat and soak<br>- Temperature min<br>- Temperature max<br>- Time   | $T_{smin}$<br>$T_{smax}$<br>$t_{smin}$ to $t_{smax}$ | 100 °C<br>150 °C<br>60 ... 120 s | 150 °C<br>200 °C<br>60 ... 180 s |
| Average ramp-up rate   | $T_{smax}$ to $T_p$                                  | max. 3 °C/ s                     | max. 3 °C/ s                     |
| Liquidous temperature<br>Time at liquidous   | $T_L$<br>$t_L$                                       | 183 °C<br>60 ... 150 s           | 217 °C<br>60 ... 150 s           |
| Peak package body temperature *,<br>Classification temperature **  | $T_p$ , $T_c$  | 220 ... 235 °C **                | 245 ... 260 °C **                |
| Time ( $t_p$ ) ** within 5 °C of the specified classification temperature ( $T_c$ )  |  | 20 s ***                         | 30 s ***                         |
| Average ramp-down rate   | $T_p$ to $T_{smax}$                                  | max. 6 °C/ s                     | max. 6 °C/ s                     |
| Time 25 °C to peak temperature   |  | max. 6 min                       | max. 8 min                       |
| * = Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.<br>** = For details please refer to JEDEC J-STD-020D.<br>*** = Tolerance for time at peak profile temperature ( $t_p$ ) is defined as a supplier minimum and a user maximum. |  |                                  |                                  |

## 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.
- Surge arresters must be handled with care and must not be dropped.
- Do not continue to use damaged surge arresters.
- SMD surge arresters should be soldered within 24 month after shipment.

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