



## Surge arrester

### 2-electrode arrester

|                       |                        |
|-----------------------|------------------------|
| <b>Series/Type:</b>   | <b>A80-C90XSMD</b>     |
| <b>Ordering code:</b> | <b>B88069X1630T602</b> |
| <b>Date:</b>          | <b>2019-04-15</b>      |
| <b>Version:</b>       | <b>14</b>              |

## Surge arrester

B88069X1630T602

## 2-electrode arrester

A80-C90XSMD

### Features

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

### Applications

- Consumer electronic
- Alarm systems

### Electrical specifications

|                                             |                                                                                                |                                                                                       |
|---------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| DC spark-over voltage <sup>1) 2)</sup>      | 90                                                                                             | V                                                                                     |
| Tolerance                                   | ±20                                                                                            | %                                                                                     |
| Min.                                        | 72                                                                                             | V                                                                                     |
| Max.                                        | 108                                                                                            | V                                                                                     |
| Impulse spark-over voltage                  |                                                                                                |                                                                                       |
| at 100 V/μs - for 99% of measured values    | < 500                                                                                          | V                                                                                     |
| - typical values of distribution            | < 450                                                                                          | V                                                                                     |
| at 1 kV/μs - for 99% of measured values     | < 600                                                                                          | V                                                                                     |
| - typical values of distribution            | < 550                                                                                          | V                                                                                     |
| Service life                                |                                                                                                |                                                                                       |
| 10 operations 50 Hz, 1 s                    | 20                                                                                             | A                                                                                     |
| 1 operation 50 Hz; 0.18 s (9 cycles)        | 100                                                                                            | A                                                                                     |
| 10 operations [5× (+) & 5× (-)] 8/20 μs     | 20                                                                                             | kA                                                                                    |
| 1 operation 8/20 μs                         | 25                                                                                             | kA                                                                                    |
| 1 operation 10/350 μs                       | 5                                                                                              | kA                                                                                    |
| 300 operations 10/1000 μs                   | 100                                                                                            | A                                                                                     |
| Insulation resistance at 50 V <sub>DC</sub> | > 10                                                                                           | GΩ                                                                                    |
| Capacitance at 1 MHz                        | < 1.5                                                                                          | pF                                                                                    |
| Arc voltage at 1 A                          | ~ 10                                                                                           | V                                                                                     |
| Glow to arc transition current              | < 0.5                                                                                          | A                                                                                     |
| Glow voltage                                | ~ 60                                                                                           | V                                                                                     |
| Weight                                      | ~ 1.5                                                                                          | g                                                                                     |
| Operation and storage temperature           | -40 ... +125                                                                                   | °C                                                                                    |
| Climatic category (IEC 60068-1)             | 40/125/21                                                                                      |                                                                                       |
| Marking, blue negative                      | <b>EPCOS 90 YY O</b><br>90 - Nominal voltage<br>YY - Year of production<br>O - Non radioactive |                                                                                       |
| Certification                               | UL 497B (E163070)                                                                              |  |

Remarks on next page

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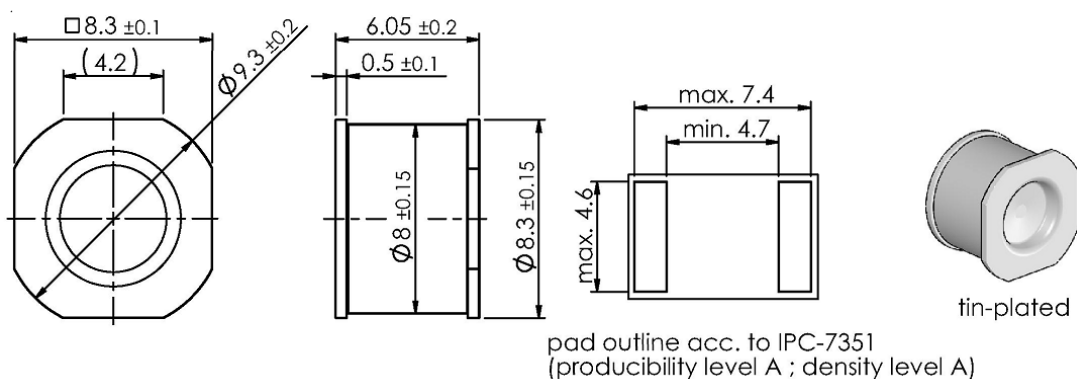
A80-C90XSMD

1) At delivery AQL 0.65 level II, DIN ISO 2859

2) In ionized mode

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

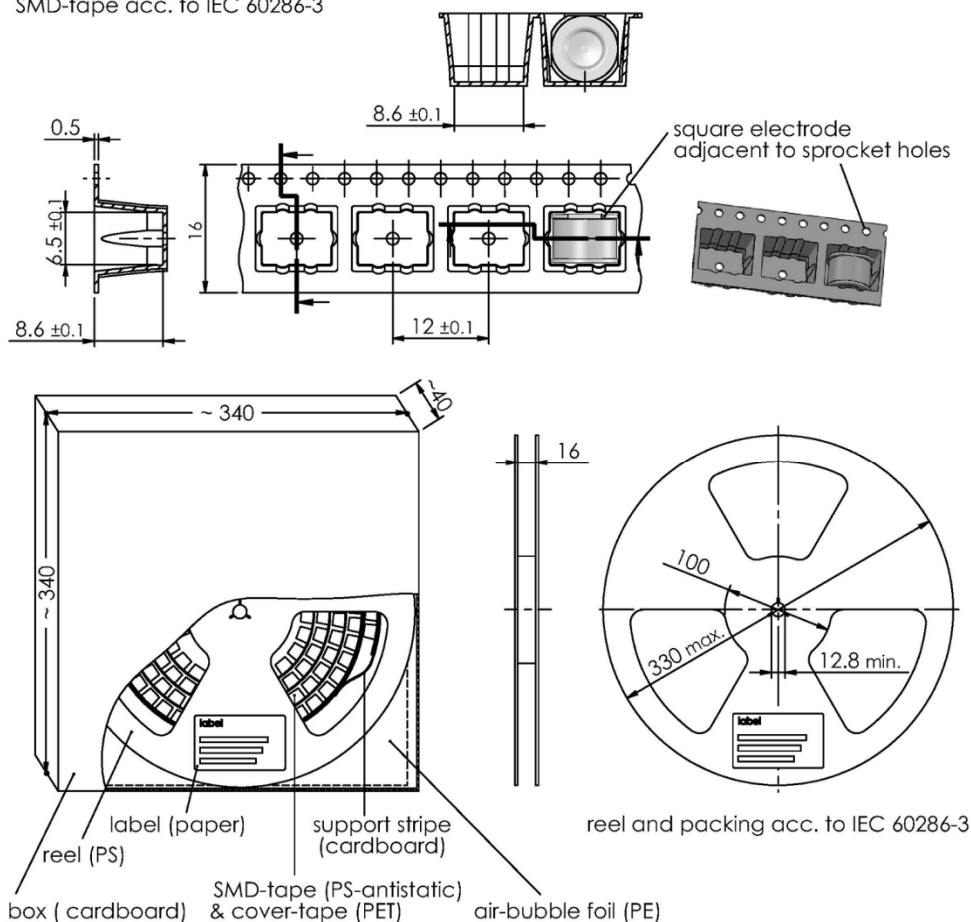
### Dimensional drawing in mm



### Ordering code and packing advice

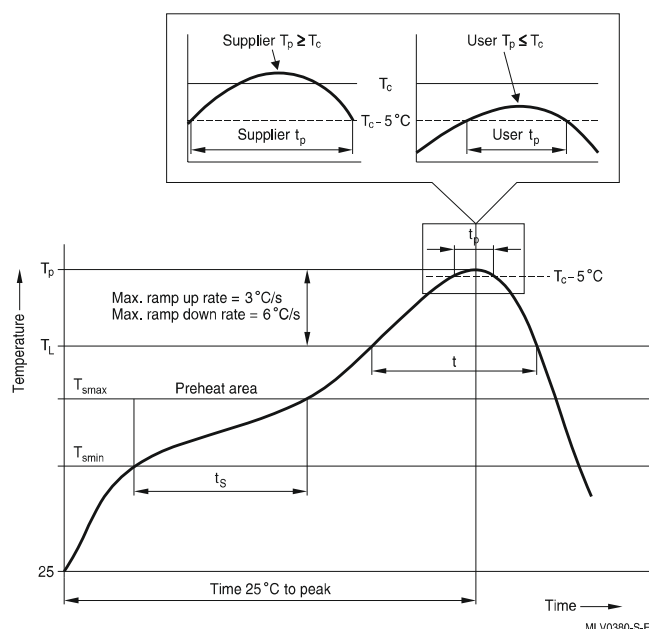
B88069X1630T602 = 600 pcs. on SMD-tape

SMD-tape acc. to IEC 60286-3



## 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 *, 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. |                                                      |                                  |                                  |

Surface mounted components (SMD) may exhibit a temporary increase in the DC spark-over voltage after the solder reflow process. The components will recover within 24 hours. There is no quality defect nor change in protection levels during the temporary change in DC spark-over voltage.

## 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.
- The shown SMD pad dimensions represent a safe way to mount the arrester and are a recommendation of the manufacturer. During the reflow process it must be assured that no solder material reduces the insulation distance between the pads below the arrester.
- SMD surge arresters should be soldered within 24 month after shipment.

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## Important notes

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