



Surge arrester

2-electrode arrester

Series/Type: EHV60-H40SMD
Ordering code: B88069X3333T752
Date: 2019-07-08
Version: 04

Features

- Built to automotive standard (IATF 16949)
- Small size
- Fast response time
- High current capability
- Stable performance over service life
- Low capacitance and insertion loss
- High insulation resistance
- Excellent SMD handling
- RoHS-compatible

Applications
Automotive:

- On-board chargers
- Vehicle charging stations

Others:

- LED lighting
- Power supply
- Photovoltaic
- Air conditioning

Electrical specifications

| | | | |
|--|----------------------------------|--------------|-------|
| DC spark-over voltage ^{1) 2)} | | 4000 | V |
| Tolerance | | ±20 | % |
| Min. | | 3200 | V |
| Max. | | 4800 | V |
| Impulse spark-over voltage | | | |
| at 100 V/μs | - for 99% of measured values | < 5000 | V |
| | - typical values of distribution | < 4600 | V |
| at 1 kV/μs | - for 99% of measured values | < 5400 | V |
| | - typical values of distribution | < 4800 | V |
| at 5 kV/μs | - for 99% of measured values | < 5600 | V |
| | - typical values of distribution | < 5000 | V |
| Service life | | | |
| 300 operations | 8/20 μs | 100 | A |
| 3 operations | 8/20 μs | 3 | kA |
| 1 operation | 8/20 μs | 5 | kA |
| Insulation resistance at 100 V _{DC} | | > 1 | GΩ |
| Capacitance at 1 MHz | | < 1 | pF |
| Arc voltage at 1 A | | ~ 50 | V |
| Glow to arc transition current | | < 0.3 | A |
| Glow voltage at 0.1 A | | ~ 250 | V |
| AC withstand voltage (1 min) ³⁾ | | 2000 | V |
| Weight | | ~ 0.7 | g |
| Operation and storage temperature | | -40 ... +125 | °C |
| Recommended storage | | | |
| - temperature | | +5 ... +35 | °C |
| - humidity | | 45 ... 80 | % |
| - period | | ≤ 2 | years |
| Climatic category (IEC 60068-1) | | 40/125/21 | |

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Marking, blue positive

EPCOS 4000 YY

 4000 - Nominal voltage
 WW - Calendar week of production
 YY - Year of production (last digit)

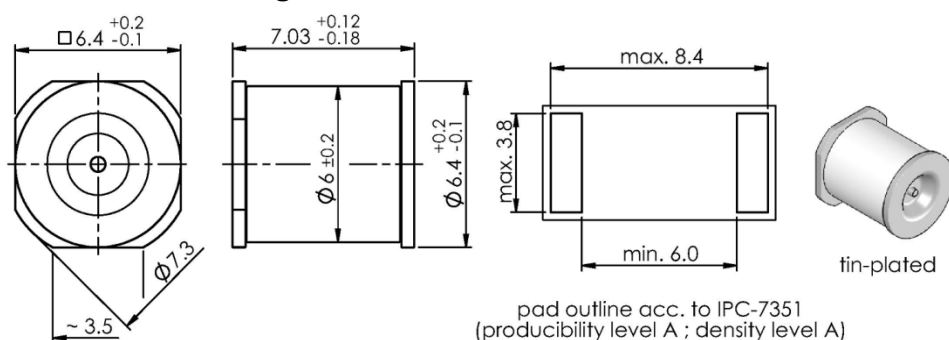
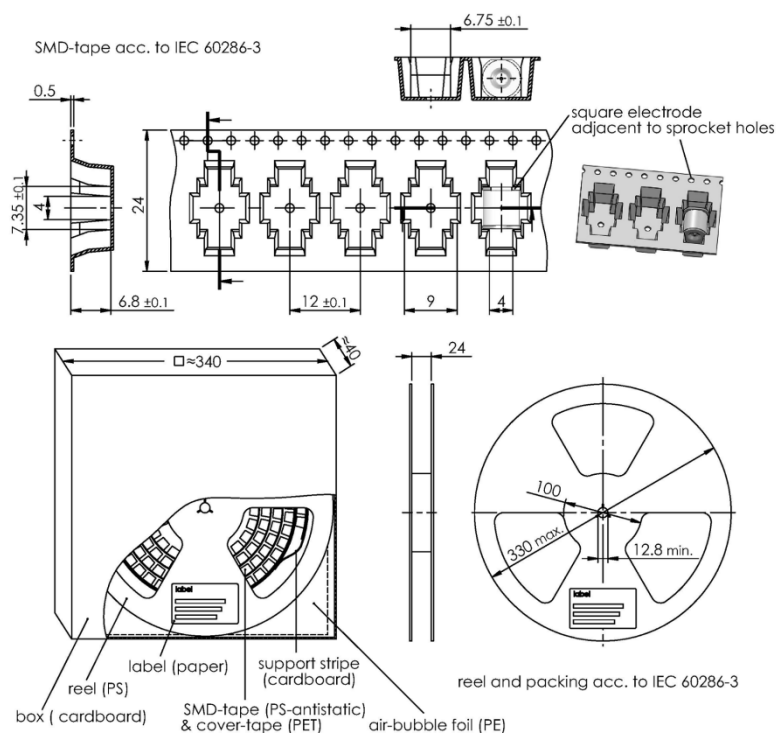
Certifications

UL 1449 (E319264)



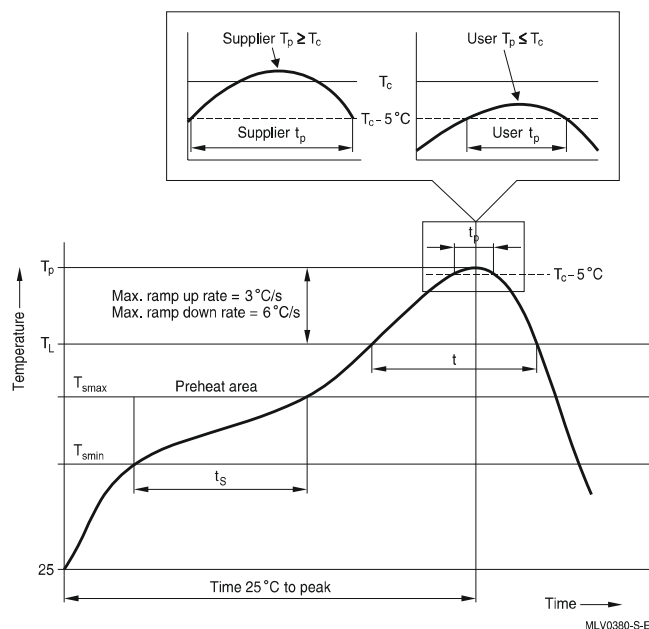
- 1) At delivery AQL 0.65 level II, DIN ISO 2859
- 2) In ionized mode
- 3) Test conditions in acc. with MIL-STD-202G at 25 ± 5 °C, relative humidity of $\leq 55\%$ and atmospheric pressure 860 ... 1100mbar.

Terms and current waveforms in accordance with: ITU-T Rec. K. 12; IEC 61643-21; 61643-311.

Dimensional drawing in mm

Ordering codes and packing advices
B88069X3333T752 = SMD-tape with 750 pcs.


Soldering parameter

Reflow soldering



| Reflow profile features | | Sn- Pb eutectic assembly | Pb-free assembly |
|---|--|----------------------------------|----------------------------------|
| Preheat and soak - Temperature min - Temperature max - Time | T_{smin} T_{smax} t_{smin} to t_{smax} | 100 °C 150 °C 60 ... 120 s | 150 °C 200 °C 60 ... 180 s |
| Average ramp-up rate | T_{smax} to T_p | max. 3 °C/ s | max. 3 °C/ s |
| Liquidous temperature Time at liquidous | T_L t_L | 183 °C 60 ... 150 s | 217 °C 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.
 ** = For details please refer to JEDEC J-STD-020D.
 *** = 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.
- Electromagnetic fields and ionizing radiation may affect the electrical characteristics of the arrester. The impact of such effects (inductive and capacitive field distortion from adjacent components) must be avoided by appropriate circuit design measures.
- 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.
- 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.

Surge arrester

B88069X3333T752

2-electrode arrester

EHV60-H40SMD

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Important notes

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Release 2018-10