



## Surge arrester

### 2-electrode arrester

**Series/Type:** EHV60-H40SMD  
**Ordering code:** B88069X3333T752  
**Date:** 2015-06-17  
**Version:** 03

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**Features**

- Built to automotive standard (ISO/TS 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 <sup>1) 2)</sup>	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 <sub>DC</sub>	> 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)	2000	V
Weight	~ 0.7	g
Operation and storage temperature	-40 ... +125	°C
Climatic category (IEC 60068-1)	40/125/21	
Recommended storage		
- temperature	+5 ... +35	°C
- humidity	45 ... 80	%
- period	≤ 2	years

Following on next page

Marking, blue positive

**EPCOS 4000 YY**

4000 - Nominal voltage

WW - Calendar week of production

YY - Year of production

Certifications

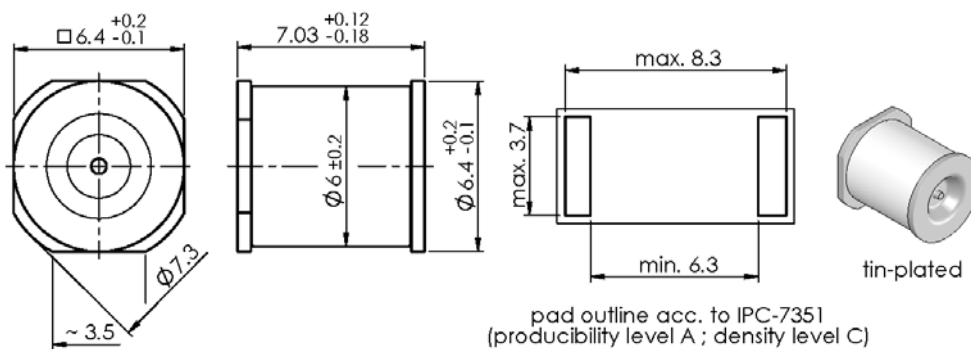
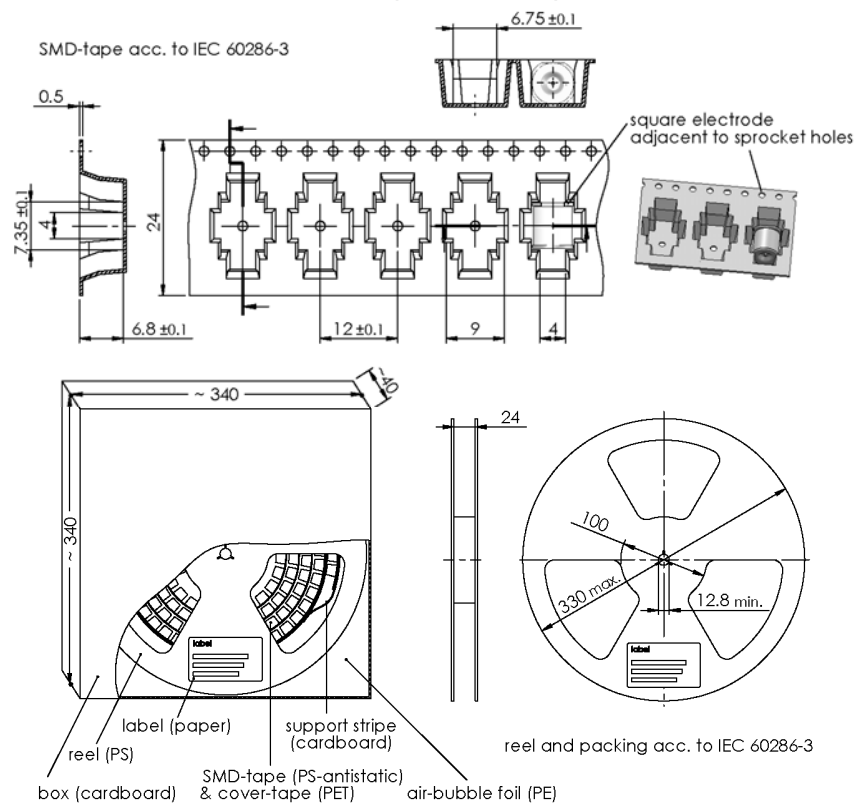
UL 1449 (E319264)



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

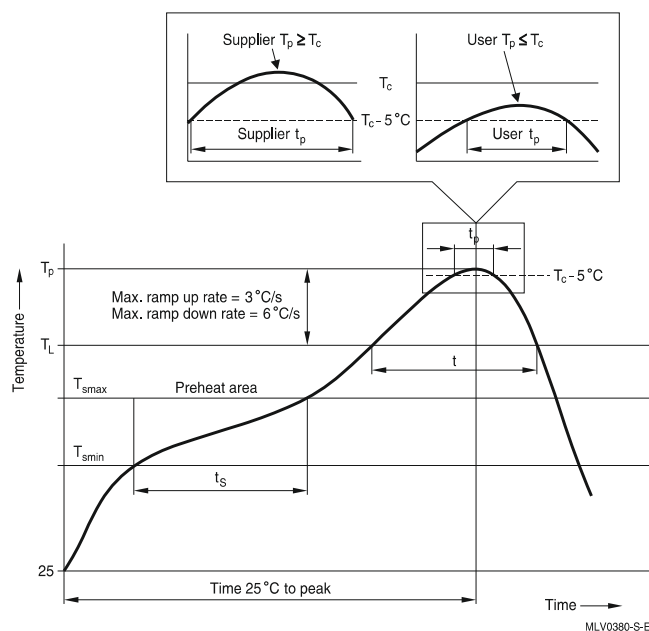
2) In ionized mode

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**
**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.

### 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.

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