

# Surge arrester

3-electrode arrester

Series/Type: EB0-C420SMDHC Ordering code: B88069X6693T802

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Version: 01

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Surge arrester B88069X6693T802

3-electrode arrester EB0-C420SMDHC

#### **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 voltag	420	V		
Tolerance	-15 <b>+</b> 25	%		
Min.			357	V
Max.			525	V
Impulse spark-over v	oltage 3)			
at 100 V/µs - for 99% of measured values			< 850	V
	<ul> <li>typical values of distribution</li> </ul>		< 750	V
at 1 kV/µs	- for 99% of measured values		< 1000	V
	- typical values of distribution		< 850	V
Service life				
10 operation	ns	50 Hz; 1 s <sup>4)</sup>	20	Α
10 operations [5× (+) & 5× (–)]		8/20 μs <sup>4)</sup>	20	kA
1 operation 10/350 µs 4)			3	kA
300 operations (+/–, alternating polarity) 10/1000 $\mu$ s <sup>4)</sup>			200	Α
Insulation resistance at 50 V <sub>DC</sub> <sup>3)</sup>			> 1	$G\Omega$
Capacitance at 1 MHz <sup>3)</sup>			< 1	pF
Transverse delay time 5)			< 0.2	μs
Arc voltage at 1 A			~ 10	V
Glow to arc transition	current	< 1	Α	
Glow voltage at 0.1 A	1	~ 50	V	
Weight			~ 1	g
Operation and storage temperature			-40 <b>+</b> 125	°C
Climatic category (IEC 60068-1)			40/125/21	
Marking, blue negative			EPCOS EBHC 420 YY O EBHC - Series 420 - Nominal voltage YY - Year of production O - Non radioactive	

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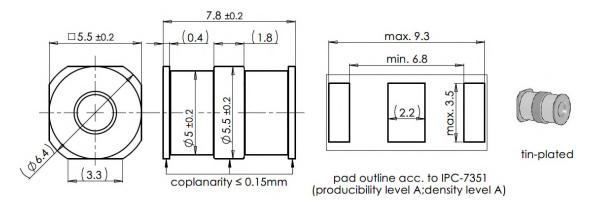
#### 3-electrode arrester

EB0-C420SMDHC

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

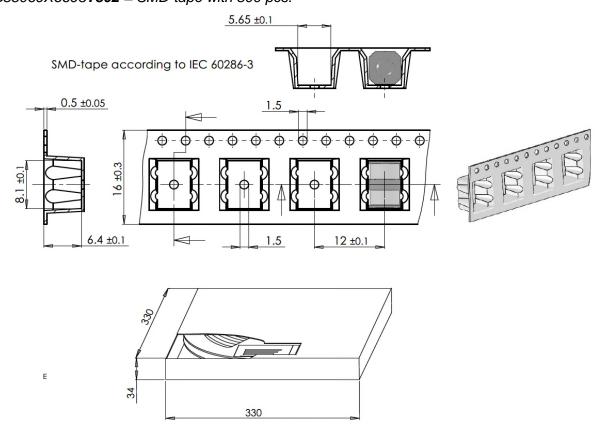
Terms in accordance with ITU-T Rec. K.12 and IEC 61643-311.

### Dimensional drawing in mm



## Ordering code and packing advice

B88069X6693**T802** = SMD-tape with 800 pcs.



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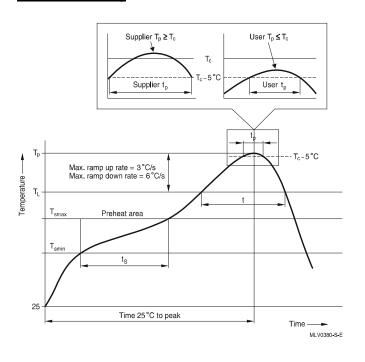
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#### 3-electrode arrester

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#### Soldering parameter

#### Reflow soldering



Reflow profile features		Sn- Pb eutectic assembly	Pb-free assembly
Preheat and soak - Temperature min - Temperature max - Time	T <sub>smin</sub> T <sub>smax</sub> t <sub>smin</sub> to t <sub>smax</sub>	100 °C 150 °C 60 120 s	150 °C 200 °C 60 180 s
Average ramp-up rate	T <sub>smax</sub> to T <sub>p</sub>	max. 3 °C/ s	max. 3 °C/ s
Liquidous temperature Time at liquidous	T <sub>L</sub>	183 °C 60 150 s	217 °C 60 150 s
Peak package body temperature *, Classification temperature **	T <sub>p</sub> , T <sub>C</sub>	220 235 °C **	245 260 °C **
Time (t <sub>p</sub> ) ** within 5 °C of the specified classification temperature (T <sub>C</sub> )		20 s ***	30 s ***
Average ramp-down rate	T <sub>p</sub> to T <sub>smax</sub>	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 (Tp) 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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<sup>\*\* =</sup> For details please refer to JEDEC J-STD-020D.

<sup>\*\*\* =</sup> Tolerance for time at peak profile temperature  $(t_{\text{p}})$  is defined as a supplier minimum and a user maximum.



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