



## Surge arrester

### 2-electrode arrester

**Series/Type:** EM90X  
**Ordering code:** B88069X0190\*\*\*\*  
Date: 2016-10-18  
Version: 09

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**Features**

- Small size
- Fast response time
- High current handling capability
- Stable performance over service life
- Low capacitance and insertion loss
- High insulation resistance
- RoHS-compatible

**Applications**

- Power supplies
- Antenna protection
- Air condition
- Modem
- Consumer electronics
- Dataline protection

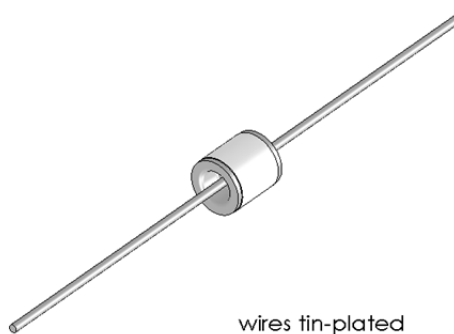
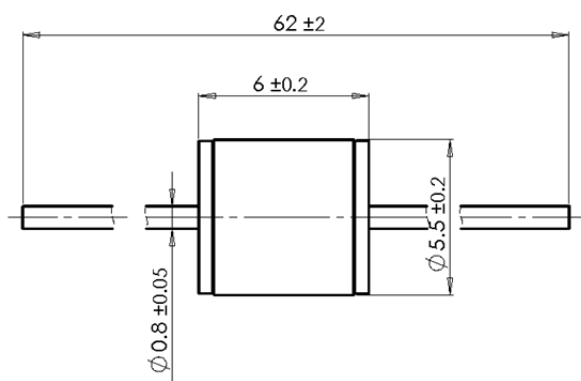
**Electrical specifications**

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	< 400	V
- typical values of distribution	< 330	V
at 1 kV/μs - for 99% of measured values	< 600	V
- typical values of distribution	< 530	V
Service life		
10 operations    50 Hz, 1 s	2.5	A
1 operation     50 Hz, 0.18 s (9 cycles)	5	A
300 operations   8/20 μs	100	A
10 operations    8/20 μs	2.5	kA
1 operation     8/20 μs	5	kA
1 operation     10/350 μs	0.5	kA
300 operations   10/1000 μs	100	A
Insulation resistance at 50 V <sub>DC</sub>	> 1	GΩ
Capacitance at 1 MHz	< 1	pF
Arc voltage at 1 A	~ 10	V
Glow to arc transition current	< 0.6	A
Glow voltage	~ 60	V
Weight	~ 0.7	g
Operation and storage temperature	-40 ... +125	°C
Climatic category (IEC 60068-1)	40/125/21	
Marking, red positive	<b>EPCOS EM 90 YY O</b> EM    - Series 90    - Nominal voltage YY    - Year of production O     - Non radioactive	
Certification	UL 497B (E163070)	

Remarks on next page

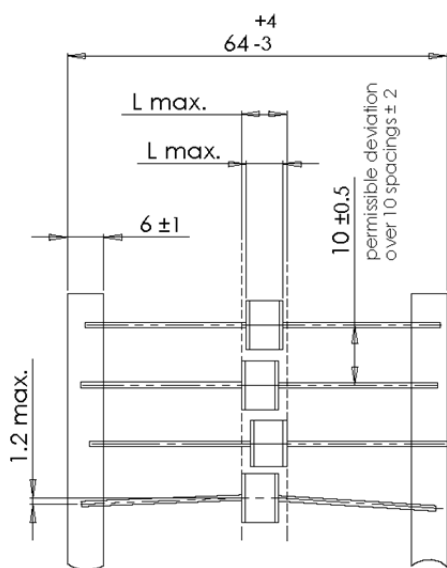
- 1) At delivery AQL 0.65 level II, DIN ISO 2859
- 2) In ionized mode

Terms in accordance with ITU-T Rec. K.12; IEC 61663-2 and IEC 61643-311.

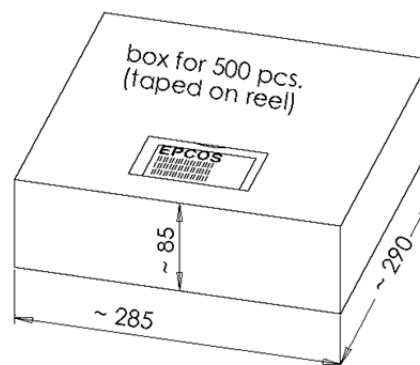
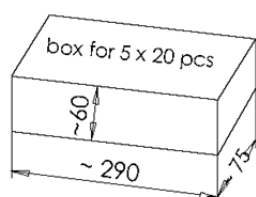
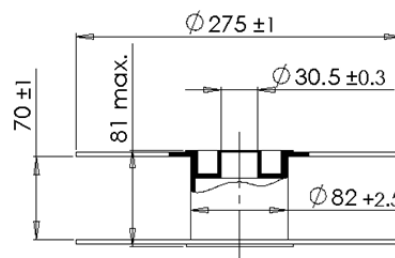
**Dimensional drawing in mm**

**Ordering codes and packing advices**

**B88069X0190S102** = 100 pcs. on 5 taped stripes

**B88069X0190T502** = 500 pcs. on tape & reel



tape acc. to IEC 60286-1



## Soldering parameter

### Wave soldering



Wave profile features	Pb-free assembly
Solder	Sn 95.5 / Ag 3.8 / Cu 0.7
Solder bath temperature	263 (±3) °C
Dwell time	< 3 s

Soldering profile applied to a single soldering process.

## 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.
- 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.

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