



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## Surge arrester

2-electrode arrester

**Series/Type:** ES400XSMD  
**Ordering code:** B88069X5591T902  
**Version/Date:** Issue 03 / 2010-02-10

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**Features**

- Extremely small size
- Extremely fast response time
- Stable performance over life
- Extremely low capacitance
- High insulation resistance
- Excellent SMD handling
- RoHS-compatible

**Applications**

- Modem
- Consumer electronics
- Tuner

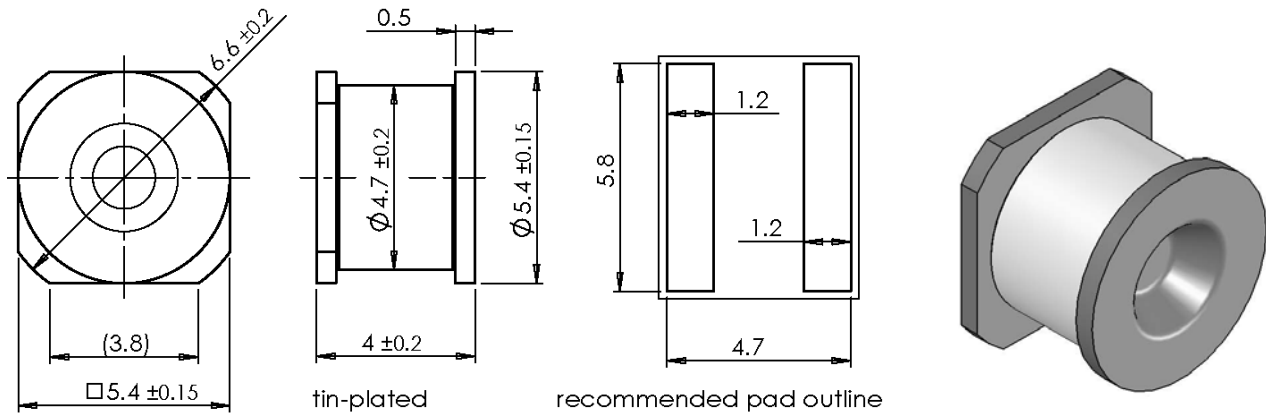
**Electrical specifications**

DC spark-over voltage <sup>1) 2)</sup>		400 ± 15	V %
Impulse spark-over voltage			
at 100 V/μs	- for 99 % of measured values - typical values of distribution	< 800 < 750	V V
at 1 kV/μs	- for 99 % of measured values - typical values of distribution	< 1000 < 850	V V
Service life			
10 operations	50 Hz; 1 s	2.5	A
10 operations	8/20 μs	2.5	kA
1 operation	8/20 μs	5	kA
300 operations (150x (+) & 150x (-))	10/1000 μs	10	A
100 operations (50x (+) & 50x (-))	10/1000 μs	50	A
Insulation resistance at 100 V <sub>dc</sub>		> 1	GΩ
Capacitance at 1 MHz		< 1	pF
Arc voltage at 1 A		~ 11	V
Glow to arc transition current		< 0.5	A
Glow voltage		~ 80	V
Weight		~ 1	g
Operation and storage temperature		-40 ... +90	°C
Climatic category (IEC 60068-1)		40/ 90/ 21	
Marking, red negative		<b>EPCOSES 400 YY O</b> ES - Series 400 - Nominal voltage YY - Year of production O - Non radioactive	

<sup>1)</sup> At delivery AQL 0.65 level II, DIN ISO 2859

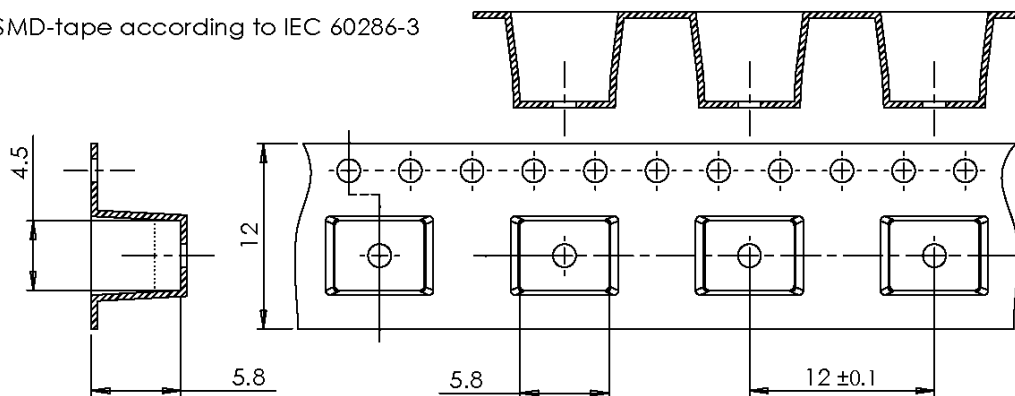
<sup>2)</sup> In ionized mode

Terms in accordance with ITU-T Rec. K.12 and DIN 57845/VDE0845

**Dimensional drawing in mm**

**Packing advice**

*T902 = tape and reel with 900 pcs*

SMD-tape according to IEC 60286-3


**Cautions and warnings**

- Surge arresters must not be operated directly in power supply networks.
- If the contacts of the surge arresters are defective, current stress can lead to the formation of sparks and loud noises (bang).
- Surge arresters may become hot in case of longer periods of current stress (danger of burning).
- Surge arresters may be used only within their specified values. In case of overload, the head contacts may fail or the component may be destroyed.
- Damaged surge arresters must not be re-used.

## Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
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