

CSA70 Series Specification		Drawing No.	Page
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Type	CSA70 Series	Date	May 12, 2005

1. Scope

This specification covers the CSA70 series.

2. Type Designation

2-1. Formation of Type Designation

The type designation shall be formed in the following arrangement.

Example) CSA 70 - 301 L - T - * - SC0411
 ① ② ③ ④ ⑤ ⑥

2-2. Symbols

① Series Name CSA·····Chip type Surge Absorber
 (Shape : 4.0x3.2 Size)

② Nominal DC spark over voltage [Example : 301→30 x 10¹=300 (V)]

③ Tolerances of DC spark over voltage

The tolerance on DC spark over voltage shall be denoted by an uppercase alphabetic character, as defined in the following table.

記号 Symbol	L	M
許容差 Tolerances	± 15%	± 20%

④ Packaging Style

Table 2-2 Packaging Style

Symbol	T	B
Packaging Style	Tape & Reel	Bulk packing

⑤ Option

⑥ Customer Register Code: Philips Lumileds

3. Structure

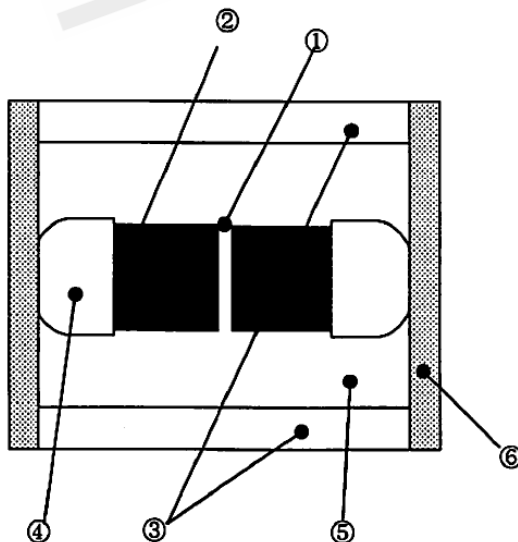


Table3 Parts Name

No.	Name
①	Micro Gap
②	Element(Conductive Film Coating)
③	Ceramics
④	Electrode Cap
⑤	Gas
⑥	Terminal(Sn Coating)

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4. Temperature Range

- 1) Operating temperature range : $-40 \sim +85^{\circ}\text{C}$
- 2) Storage temperature range : $-40 \sim +85^{\circ}\text{C}$

5. Dimension

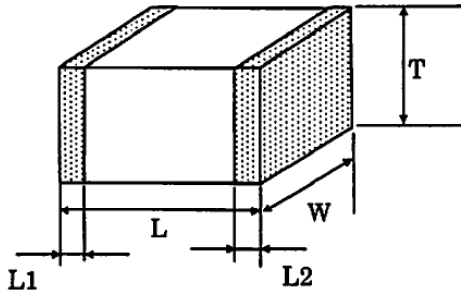


Table5 Dimension

Symbol	Dimension (mm)
L	4.0 ± 0.2
W	3.2 ± 0.2
T	2.3 ± 0.2
L1,L2	0.4 ± 0.2

6. Pad Outline

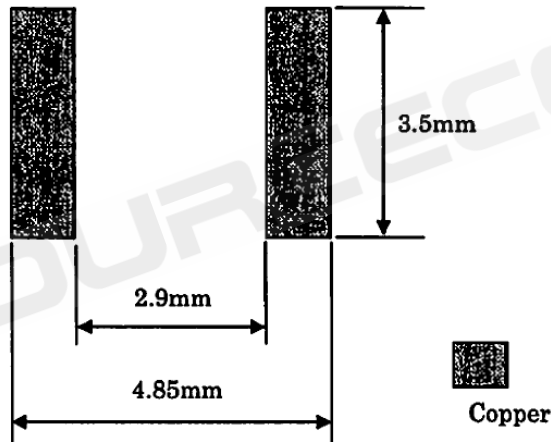


Fig.6

7. Rating (Initial Characteristics)

Type designation	DC sparkover voltage Vs (V)	Insulation resistance		Capacitance C (pF)
		IR (MΩ)	Applied voltage	
CSA70-301L-□-SC0411	255 ~ 345	100 min.	DC 100V	0.6 max.
CSA70-401L-□-SC0411	340 ~ 460	100 min.	DC 250V	0.6 max.
CSA70-601M-□-SC0411	480 ~ 720	100 min.	DC 250V	0.6 max.

8. Storage term

The storage is avoiding high temperature and high humidity.
Parts should be used within 6 months.

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9. Related Standards

1)UL Recognized

	Content
Standard No.	UL497B
Title	Protectors for Data Communications sand Fire Alarm Circuits
File No.	E175280
Registration Part Number	CSA70-301L-□ -SC0411, CSA70-401L-□ -SC0411, CSA70-601M -□ -SC0411

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CSA70 Series Characteristics Specification		Drawing No.	Page
		RD-AQ-5017E	1/4
Type	CSA70 Series	Date	8 December 2004

1. 1. Scope

This specification covers the CSA70 series for manufacturing gas tube arrestors with the Micro-Gap system.

2. Appearance

Item	Test method	Performance
Appearance	Outer appearance shall be visually examined.	No visual damage.

3. Electrical performance

Item	Test method	Performance
DC Sparkover Voltage(Vs)	Measure the starting discharge voltage(Vs) by gradually increasing applied DC voltage. Test current is 1mA max. and test period is 1 second max.	Meet specified value.
Insulation resistance(IR)	Measure the insulation resistance (IR) across the terminal at DC250V.	100MΩ or over
Capacitance(C)	Measure the electrostatic capacitance(C) by applying a voltage of less than 5Vrms (at 1kHz) between terminals.	0.6pF or less At this capacitance is a performance in a part.

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4. Mechanical performance

Item	Test method	Performance
Vibration	<p>(In accordance with JIS C 60068-2-6)</p> <p>The specimen shall be vibrated with a total amplitude of 1.5mm and a varying frequency of 10Hz~55Hz~10Hz (each 1 minute) for a period of 120 minutes respectively in each X, Y and Z directions. Thereafter, the characteristics of items Vs, IR and C shall be measured.</p>	Meet specified value.
Bending strength	<p>(In accordance with JIS C 5101)</p> <p>The specimen shall be soldered on the board.</p> <p>The board shall gradually be bent to 2mm at 1mm/s using a tool below, and hold it 5sec, and back to the original position. Thereafter, the characteristics of items Vs,IR and C shall be measured.</p> <p>Solder : SPT-55-2062 M10 Quantity : 0.25mm reflow at230°C Board : Material Glass epoxy regulated in JIS C6484</p> <p style="text-align: center;">(GE4.Cu 35 +10/-5 μ m²)</p> <div style="text-align: center;"> <p style="text-align: center;">W+10</p> <p style="text-align: center;">R=230</p> <p style="text-align: center;">R2.5 R2.5</p> <p style="text-align: center;">45±2 45±2</p> </div>	Meet specified value.

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5. Reliability performance

Item	Test method	Performance															
Resistance to cold	(In accordance with JIS C 60068-2-1) The specimen shall be subjected to $-40 \pm 3^{\circ}\text{C}$ for 500hours without load and then stored at room temperature and humidity for 4hours. Thereafter, the characteristics of items Vs,IR and C shall be measured.	Meet specified value.															
Resistance to heat	(In accordance with JIS C 60068-2-2) The specimen shall be subjected to $85 \pm 2^{\circ}\text{C}$ for 500hours without load and then stored at room temperature and humidity for 4hours. Thereafter, the characteristics of items Vs,IR and C shall be measured.	Meet specified value.															
Resistance to humidity.	(In accordance with JIS C 60068-2-3) The specimen shall be subjected to $60 \pm 2^{\circ}\text{C}$ 90%R.H. for 500hours without load and then stored at room temperature and humidity for 4hours. Thereafter, the characteristics of items Vs,IR and C shall be measured.	Meet specified value.															
Heat cycle	(In accordance with JIS C 0025) Repeat the temperature cycle shown below 25 times then store parts at room temperature and humidity for 4hours. Thereafter, the characteristics of items Vs,IR and C shall be measured. <table border="1" data-bbox="574 1289 992 1509"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Period</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>$-40 \pm 3^{\circ}\text{C}$</td> <td>30min.</td> </tr> <tr> <td>2</td> <td>room temperature</td> <td>3min.</td> </tr> <tr> <td>3</td> <td>$85 \pm 2^{\circ}\text{C}$</td> <td>30min.</td> </tr> <tr> <td>4</td> <td>room temperature</td> <td>3min.</td> </tr> </tbody> </table>	Step	Temperature	Period	1	$-40 \pm 3^{\circ}\text{C}$	30min.	2	room temperature	3min.	3	$85 \pm 2^{\circ}\text{C}$	30min.	4	room temperature	3min.	Meet specified value.
Step	Temperature	Period															
1	$-40 \pm 3^{\circ}\text{C}$	30min.															
2	room temperature	3min.															
3	$85 \pm 2^{\circ}\text{C}$	30min.															
4	room temperature	3min.															
Surge life	Impulse current (8/20 μ sec. of 50A) is applied to the sample 300times at 30 seconds intervals. Thereafter, the characteristics of items Vs,IR and C shall be measured.	Vs : $-30\% \leq \Delta V_s / V_s \leq 50\%$, IR : 100M Ω or over C : 0.6pF or less															
Surge current capacity	Impulse current (8/20 μ sec. of 1500A) is applied to the sample 3times at 5 seconds intervals. Thereafter, the characteristics of items Vs,IR and C shall be measured.	No visual damage.															

