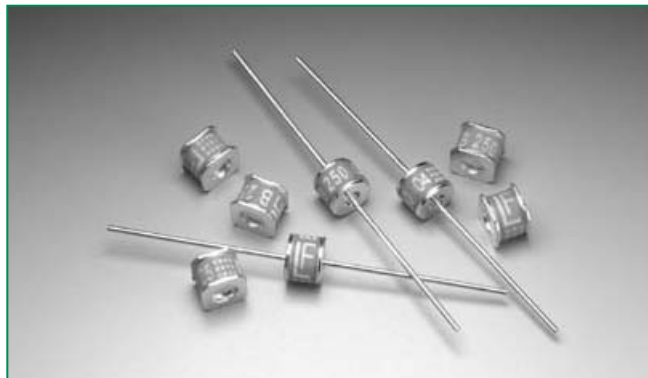




### Agency Approvals

| AGENCY                                                                            | AGENCY FILE NUMBER |
|-----------------------------------------------------------------------------------|--------------------|
|  | E128662            |

### 2 Electrode GDT Graphical Symbol



### Description

The Greentube™ SL1411A (Delta) Series Gas Plasma Arrester (improved gas discharge tube (GDT)) features a high-performance transient voltage suppressor designed for heavy-duty protection of telecom and industrial equipment.

The Delta range provides high levels of protection against fast rising transients measuring 100V/μs to 1kV/μs and is usually caused by lightning disturbances.

The high surge rating of these devices makes them ideal for arduous service conditions and Outside Plant locations.

The Delta range also features ultra low capacitance (typically 1 pF or less) and optimized internal geometry which provides low insertion loss at high frequencies, so are ideal for the protection of broadband equipment.

### Features

- RoHS compliant and Lead-free
- Can be used to meet the requirements of GR-1361, RUS PE-80, ITU K.12 and YD/T940, 950, 1082, 993, 694
- Excellent response to fast rising transients
- Up to 1.5 GHz working frequency
- 10 kA surge capability tested with 8/20μs pulse as defined by IEC 61000-4-5 (20 kA for 90 V)
- 20,000 A single shot surge capability tested with 8/20μs pulse as defined by IEC 61000-4-5
- Excellent service life characteristics

### Applications

- Outside Plant and MDF protector modules
- ADSL equipment
- XDSL equipment (including ADSL2, VDSL, VDSL2)
- Satellite and CATV equipment
- General telecom equipment
- Cell phone base stations

### Electrical Characteristics

| Part Number* | DC Breakover Voltage @ 100 V/s <sup>1,2</sup> Volts |      | MAX Dynamic Breakover Voltage |              | AC Discharge Current <sup>4</sup> Amps | Max Repetitive Impulse Current <sup>3</sup> kAmps | Max Single Impulse Current |                | Max Leakage Current <sup>6</sup> nAmps | Holdover Voltage <sup>7,8</sup> Volts | Nominal On-state Voltage @ 1A Volts |
|--------------|-----------------------------------------------------|------|-------------------------------|--------------|----------------------------------------|---------------------------------------------------|----------------------------|----------------|----------------------------------------|---------------------------------------|-------------------------------------|
|              | MIN                                                 | MAX  | 100 V/μs Volts                | 1kV/μs Volts |                                        |                                                   | 8/20μs kAmps               | 10/350μs kAmps |                                        |                                       |                                     |
| SL1411A075   | 60                                                  | 90   | 500                           | 700          | 10                                     | 10                                                | 20                         | 3              | 50                                     | 50                                    | 20                                  |
| SL1411A090   | 72                                                  | 108  | 500                           | 600          | 10                                     | 10                                                | 20                         | 3              | 50                                     | 50                                    | 20                                  |
| SL1411A150   | 120                                                 | 180  | 500                           | 600          | 10                                     | 10                                                | 20                         | 3              | 50                                     | 50                                    | 20                                  |
| SL1411A230   | 184                                                 | 276  | 550                           | 700          | 10                                     | 10                                                | 20                         | 3              | 100                                    | 135                                   | 20                                  |
| SL1411A250   | 200                                                 | 300  | 600                           | 800          | 10                                     | 10                                                | 20                         | 3              | 100                                    | 135                                   | 20                                  |
| SL1411A350   | 280                                                 | 420  | 800                           | 900          | 10                                     | 10                                                | 20                         | 3              | 100                                    | 135                                   | 20                                  |
| SL1411A470   | 400                                                 | 540  | 1000                          | 1100         | 10                                     | 10                                                | 20                         | 3              | 100                                    | 135                                   | 20                                  |
| SL1411A600   | 510                                                 | 690  | 1250                          | 1400         | 10                                     | 10                                                | 20                         | 3              | 100                                    | 135                                   | 20                                  |
| SL1411A800   | 680                                                 | 920  | 1400                          | 1600         | 10                                     | 10                                                | 20                         | 3              | 100                                    | 135                                   | 20                                  |
| SL1411A1000  | 850                                                 | 1150 | 1600                          | 1800         | 10                                     | 10                                                | 20                         | 3              | 100                                    | 135                                   | 20                                  |

\*Max capacitance is 1.5 pF, measured at 1 MHz.

#### NOTES:

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

2. In ionized mode

3. Comparable to the silicon measurement Switching Voltage (V<sub>s</sub>)

4. 10 shots, AC 60 Hz, 1s duration

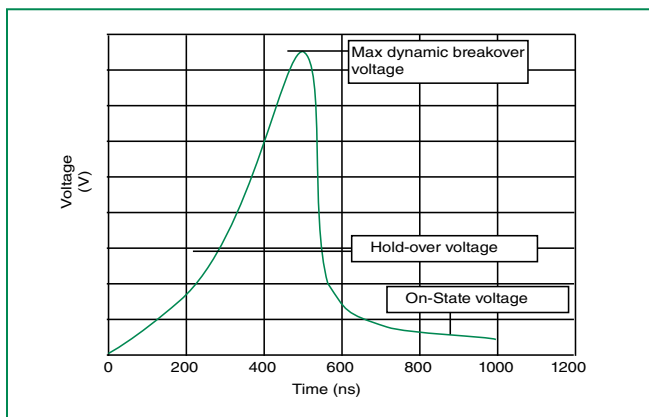
5. 10 shots, 8/20 μs waveform

6. Measured at 100 V, except for devices 90 VDC which are measured at 50 V

7. With network applied, 52V for 75 VDC and 90VDC ratings

8. Tested according to ITU-T Rec. K 12

### Voltage vs. Time Characteristic



### Service Life Rating

|      |           |                 |
|------|-----------|-----------------|
| 10A  | 10/1000μs | 1500 Operations |
| 100A | 10/1000μs | 100 Operations  |
| 300A | 10/1000μs | 50 Operations   |

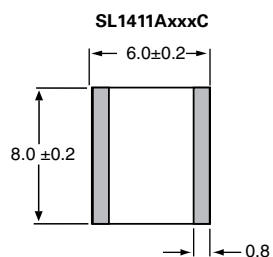
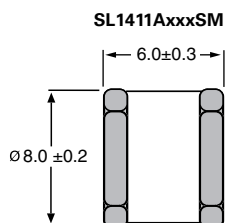
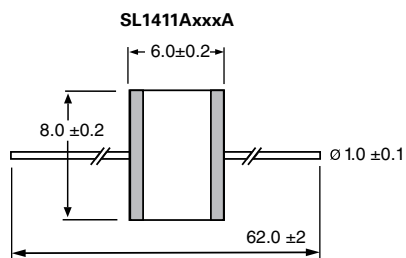
### Physical Specifications

|                           |                                                                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Weight:</b>            | 1.5 g                                                                                                                                     |
| <b>Plating Materials:</b> | "SM" and "C" surface mount devices:<br>Dull tin base on nickel<br><br>"A" axial leaded devices:<br>Core: Nickel<br>Lead wire: Hot dip tin |
| <b>Part Marking:</b>      | Littelfuse 'LF' marking, Voltage and date code.                                                                                           |

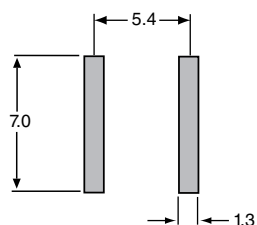
### Environmental Specifications

| Component    | Storage Temperature | Operating Temperature |
|--------------|---------------------|-----------------------|
| Standard GDT | -40°C to +150°C     | -40°C to +100°C       |

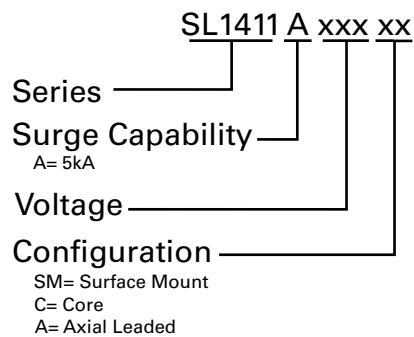
### Dimensions mm [inches]



RECOMMENDED PAD LAYOUT  
FOR "SM" AND "C"  
SURFACE MOUNT DEVICES



### Part Numbering System



## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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