

### RoHS SL1122A Series Hybrid



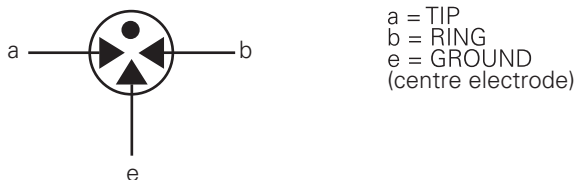
#### Description

The SL1122A series Hybrid features a high performance Alpha Gas Plasma Tube in conjunction with a MOV. These devices are matched so that high speed pulses are initially clamped by the MOV, then as the current rises, the transient energy is switched through the gas tube. The Hybrid offers high levels of performance on fast rising transients in the domain of 100V/μs to 10 kV/μs, so eliminates the dv/dt switching delay normally exhibited by standard GDTs. These devices are extremely robust and are able to divert a 10,000 Amp pulse without destruction.

#### Agency Approvals

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

#### 2 Electrode GDT Graphical Symbol



#### Features

- RoHs Compliant
- Excellent response to fast rising transients
- Flat response up to 10kV/μs
- 10kA surge capability tested with 8/20μs pulse as defined by IEC 61000-4-5
- Thermal failsafe

#### Applications

- MDF protection
- ADSL equipment
- XDSL equipment
- Alarm panels
- General telecom equipment

#### Electrical Characteristics

| Part Number | Device Specifications (at 25°C)                   |     |     |   |                           |  |  | Life Ratings                                       |   |  |   |
|-------------|---|-----|-----|---|---------------------------|--|--|--|---|--|---|
|             | DC Breakdown in Volts <sup>1,2</sup><br>(@100V/s) |     |     | DC Voltage <sup>2</sup><br>(1kV/μs Ignition Time) | Insulation Resistance     | Capacitance<br>(@1MHz, 0V bias,<br>1V oscillation) | Arc Voltage<br>(on state voltage)<br>@1Amp Min | Surge Life <sup>1</sup><br>(10/1000μs<br>300x +/-) | Surge Current <sup>1</sup><br>(8/20μs x 10) | Nominal AC Discharge<br>Current <sup>1</sup><br>(10x1s@50Hz) | DC Holdover<br>Voltage<br>( $<150\text{msecs.}$ ) |
|             | MIN   | TYP | MAX |   | MIN                       | MAX  | TYP  |  |   |  | TYP   |
|             |   |     |     |   |                           |  |  |  |   |  |   |
| SL1122A090  | 72  | 90  | 108 | 200 ( $< 10\mu\text{s}$ )                         | $> 10^8 \Omega$ (at 50V)  | 270 pF   | ~10 to 35<br>Volts                             | 200 A  | 10 kA                                       | 10 A   | 50 V  |
| SL1122A230  | 184   | 230 | 276 | 350 ( $< 10\mu\text{s}$ )                         | $> 10^8 \Omega$ (at 100V) | 100 pF   |  |  |   |  | 135 V   |
| SL1122A260  | 210   | 260 | 310 | 400 ( $< 10\mu\text{s}$ )                         |                           |  |  |  |   |  |   |

Tested in accordance with ITU-T Rec K.12

Notes:

1. Total current through centre electrode
2. Maximum Peak Break Over Voltage

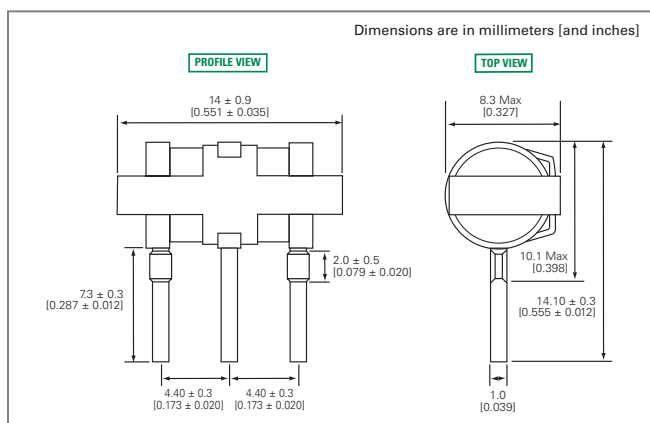
### Product Characteristics

|                        |  |
|------------------------|--|
| <b>Materials</b>       | <b>Electrode Base:</b> Nickel Iron Alloy<br><b>Electrode Plating:</b> Bright Tin<br><b>Body:</b> Ceramic |
| <b>Product Marking</b> | Littelfuse 'LF' Mark, voltage and date code. Red.  |

|  |   |
|--|---|
| <b>Glow to Arc Transition Current</b>      | ~1 Amp                                    |
| <b>Glow Voltage</b>                        | ~60 to 200 Volts                          |
| <b>Storage and Operational Temperature</b> | -40 to +90°C                              |
| <b>Transverse Voltage (Delay Time)</b>     | < 0.2 µSec.<br>(Tested to ITU-T Rec.K.12) |

### Device Dimensions

#### Radial Lead Devices



### Packaging Dimensions

For Radial Lead Items: Packed in tray (100 pcs)

### Part Numbering System and Ordering Information

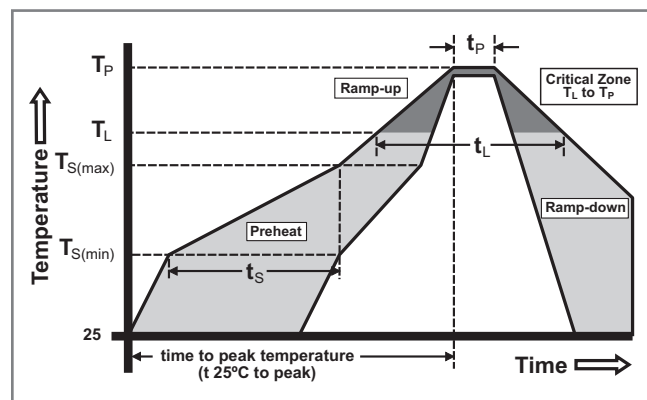
**SL1122A XXX X**

**Voltage** ———

**Pin Configuration** ———

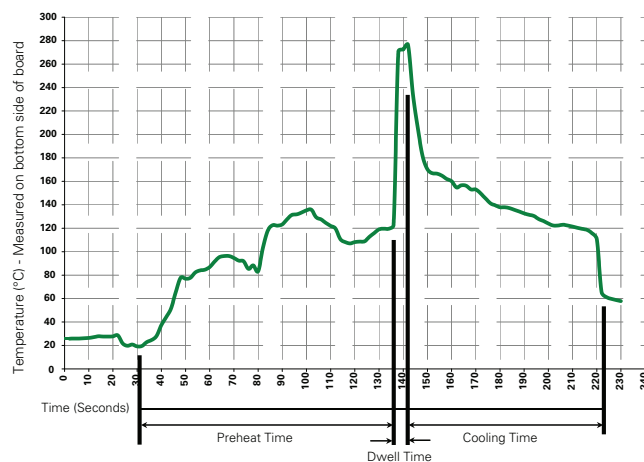
### Soldering Parameters - Reflow Soldering

|  |                                    |                         |
|--|------------------------------------|-------------------------|
| Reflow Condition                                       |                                    | Pb-free assembly        |
| Pre Heat   | - Temperature Min ( $T_{s(min)}$ ) | 150°C                   |
|  | - Temperature Max ( $T_{s(max)}$ ) | 200°C                   |
|  | - Time (Min to Max) ( $t_s$ )      | 60 – 180 seconds        |
| Average Ramp-up Rate (Liquidus Temp ( $T_L$ ) to peak) |                                    | 3°C/second max.         |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                   |                                    | 5°C/second max.         |
| Reflow   | - Temperature ( $T_L$ ) (Liquidus) | 217°C                   |
|  | - Temperature ( $t_L$ )            | 60 – 150 seconds        |
| Peak Temperature ( $T_P$ )                             |                                    | 260 <sup>+0/-5</sup> °C |
| Time within 5°C of Actual Peak Temperature ( $t_p$ )   |                                    | 10 – 30 seconds         |
| Ramp-down Rate   |                                    | 6°C/second max.         |
| Time 25°C to Peak Temperature ( $T_P$ )                |                                    | 8 minutes max.          |
| Do not exceed  |                                    | 260°C                   |



\* Devices that are soldered require inspection before use.

### Soldering Parameters - Wave Soldering (Thru-Hole Devices)



### Recommended Process Parameters:

| Wave Parameter                           | Lead-Free Recommendation          |
|--|-----------------------------------|
| <b>Preheat:</b>                          |                                   |
| (Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum:                     | 100° C                            |
| Temperature Maximum:                     | 150° C                            |
| Preheat Time:                            | 60-180 seconds                    |
| <b>Solder Pot Temperature:</b>           | 280° C Maximum                    |
| <b>Solder Dwell Time:</b>                | 2-5 seconds                       |

### Soldering Parameters - Hand Soldering

Solder Iron Temperature: 350° C +/- 5°C  
Heating Time: 5 seconds max.