

# Gas Discharge Tubes

## High Performance Beta Range

### RoHS Greentube™ SL1003 Series Gas Plasma Arresters

The SL1003 series has been especially developed for Broadband equipment. Unique design features offer high levels of performance on fast rising transients in the domain of 100V/μS to 1KV/μS, which are those most likely from induced Lightning disturbances. These devices have Ultra low capacitance ( typically 1.2pF or less ) and present insignificant signal losses up to 1.5GHz. These devices are extremely robust and are able to divert a 5000A pulse without destruction. For AC Power Cross of long duration, overcurrent protection is recommended.

#### FEATURES

- RoHS compliant
- Low insertion loss
- Surface mountable
- 5KA surge capability tested with 8/20μS pulse as defined by IEC 61000-4-5
- GHz working frequency.
- Excellent response to fast rising transients.
- Can be used to meet Telcordia GR1089 without series resistance
- 10/700 6KV capability, as per ITUT k.21, enhanced test level
- 2000 Amp 2/10μS surge rating

#### Applications:

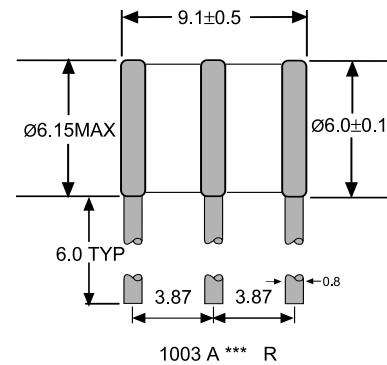
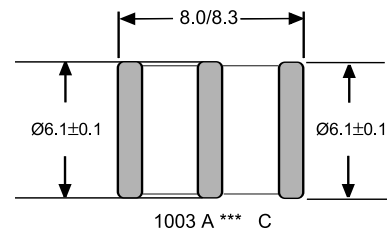
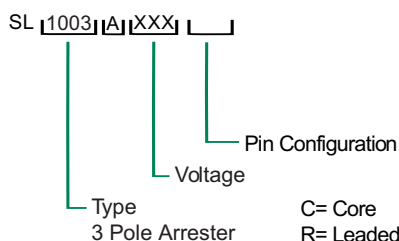
- Broadband equipment.
- ADSL equipment.
- XDSL equipment.
- Satellite and CATV equipment.
- General telecom equipment.



3 ELECTRODE GDT

GRAPHICAL SYMBOL

#### ORDERING INFORMATION



All dimensions in mm

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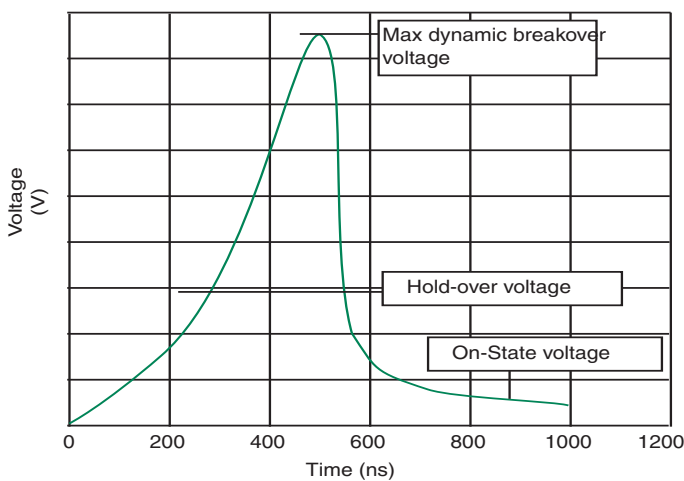
LITTELFUSE 3 TERMINAL MINI ARRESTER SERIES  
TOTALLY NON-RADIOACTIVE, UL RECOGNIZED

| Part Number | DC Voltage @100V/sec (V) | Max Dynamic Breakover Voltage @ 100 V/μs (Vbr) | Max Dynamic Breakover Voltage @ 1 kV/μs (Vbr) | Max Repetitive Impulse Discharge Current <sup>2</sup> (kA) | Insulation Resistance <sup>7</sup> (Ω) | Alternating Discharge Current <sup>2</sup> (A) | Max Capacitance <sup>4</sup> (pF) | Holdover Voltage <sup>1</sup> (V) | Nominal On-State Voltage @ 1A (V) |
|-------------|--------------------------|--|---|--|--|--|-----------------------------------|-----------------------------------|-----------------------------------|
| SL1003A090  | 90                       | 600  | 700   | 5  | 1x10 <sup>9</sup> @50V                 | 5  | 1.2                               | 50                                | 20                                |
| SL1003A230  | 230                      | 350  | 500   | 5  | 1x10 <sup>9</sup> @100V                | 5  | 1.2                               | 135                               | 20                                |
| SL1003A250  | 250                      | 400  | 600   | 5  | 1x10 <sup>9</sup> @100V                | 5  | 1.2                               | 135                               | 20                                |
| SL1003A260  | 260                      | 420  | 600   | 5  | 1x10 <sup>9</sup> @100V                | 5  | 1.2                               | 135                               | 20                                |
| SL1003A300  | 300                      | 450  | 650   | 5  | 1x10 <sup>9</sup> @100V                | 5  | 1.2                               | 135                               | 20                                |
| SL1003A350  | 350                      | 500  | 700   | 5  | 1x10 <sup>9</sup> @100V                | 5  | 1.2                               | 135                               | 20                                |
| SL1003A400  | 400                      | 550  | 800   | 5  | 1x10 <sup>9</sup> @100V                | 5  | 1.2                               | 135                               | 20                                |
| SL1003A450  | 450                      | 650  | 800   | 5  | 1x10 <sup>9</sup> @100V                | 5  | 1.2                               | 135                               | 20                                |

**Notes:**

- (1) Tested according to ITU-T Rec.K12
- (2) 10 shots, 8/20μs wave form per IEC 61000-4-5
- (3) Measured @ 100 Volts
- (4) Measured @ 1 MHz, 0 volt bias
- (5) Measured with 2/10μs wave form
- (6) Measured with 10/350μs wave form
- (7) Measured @ 100VDC except 90V which is measured at 50VDC

**Voltage vs Time Characteristic**



| Typical Insertion loss figures |
|--------------------------------|
| @1.0 GHz = 0.01dB              |
| @1.4 GHz = 0.1dB               |
| @1.8 GHz = 0.53dB              |
| @2.1 GHz = 0.81dB              |
| @2.45 GHz = 1.0dB              |
| @2.8 GHz = 1.2dB               |
| @3.1 GHz = 1.5dB               |
| @3.5 GHz = 2.1dB               |

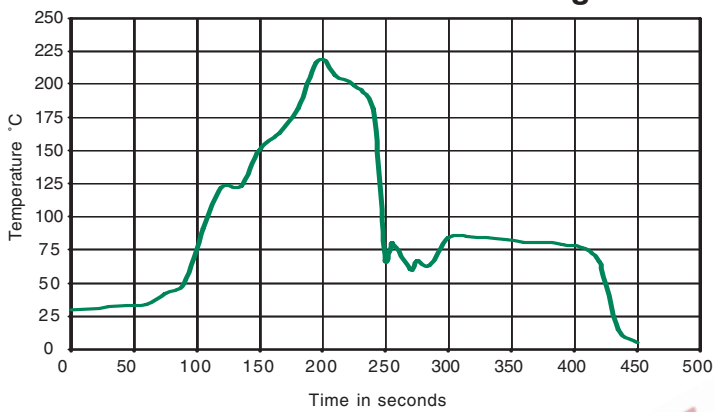
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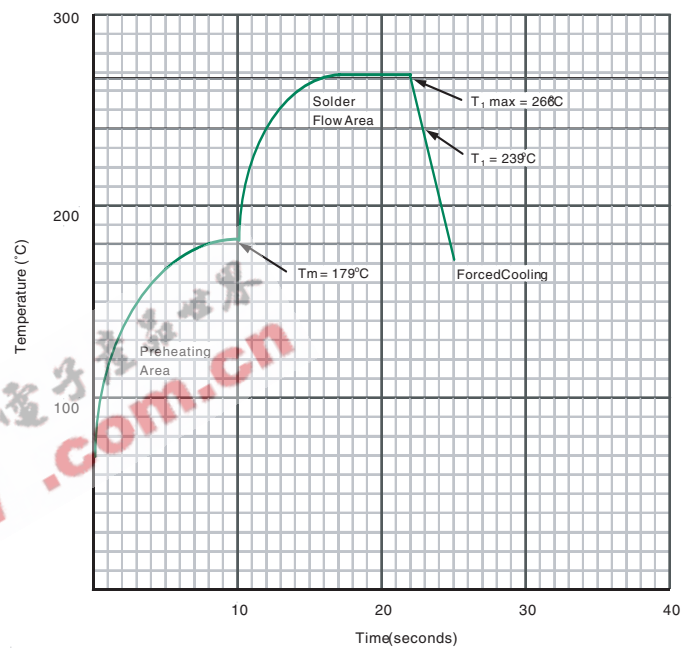
## RoHS Greentube™ SL1003 Series Gas Plasma Arresters



Profile for reflow soldering



Profile for wave soldering



**Notes:**

T<sub>1</sub> max = Maximum Tab Temperature = 266°C

T<sub>1</sub> = Flow Temperature of Solder = 239°C

T<sub>m</sub> = Melting Point of Solder = 179°C

T<sub>amb</sub> = 25°C

Maximum permissible rate of temperature change = °C / sec