

Electrical Characteristics

| Part Number | Device Specifications (at 25°C) | | | | | | | | Life Ratings | | | | | | | | | | | | |
|-------------|--|-----|-----|---|--|--------------------------------|--|--|---------------------------------------|--|---|--|--|--|--|--|--|--|--|--|--|
| | DC Breakdown in Volts ^{1,2,3} (@100V/s) | | | Impulse Breakdown in Volts ^{2,3} (@100V/μs) | Impulse Breakdown In Volts ^{2,3} (@1kV/μs) | Insulation Resistance | Capaci- tance (@1MHz 0V Bias) | Arc Voltage (on state Voltage) @1Amp Min | Surge Life (@200A 10/1000μs) | Nominal Impulse Discharge Current (8/20μs) | Nominal AC Discharge Current (10x1s @50Hz) | AC Discharge Current (9 Cycles @ 50Hz) | DC Holdover Voltage ⁴ | Max Impulse Discharge Current (1 Application) | | | | | | | |
| | MIN | TYP | MAX | MAX | | MIN | MAX | TYP | | | | | TYP | @ 10/350μs | | | | | | | |
| SL1003A090 | 72 | 90 | 108 | 600 | 700 | 10 ⁹ Ω (at 50V) | 1.5 pF | ~10 to 35 V | 300 shots | 10 shots (@10kA) | 10 A | 30 A | 50 V | 2 kA | | | | | | | |
| SL1003A230 | 184 | 230 | 276 | | 750 | 10 ⁹ Ω (at 100V) | | | | | | | 135 V | | | | | | | | |
| SL1003A250 | 200 | 250 | 300 | | | | | | | | | | | | | | | | | | |
| SL1003A260 | 210 | 260 | 310 | | | | | | | | | | | | | | | | | | |
| SL1003A300 | 240 | 300 | 360 | 750 | 850 | | | | | | | | 135 V | | | | | | | | |
| SL1003A350 | 280 | 350 | 420 | 800 | 900 | | | | | | | | | | | | | | | | |
| SL1003A400 | 320 | 400 | 480 | 850 | 950 | | | | | | | | | | | | | | | | |
| SL1003A450 | 360 | 450 | 540 | 900 | 1000 | | | | | | | | | | | | | | | | |
| SL1003A500 | 400 | 500 | 600 | 1100 | 1400 | | | | | | | | | | | | | | | | |

Notes:

- At delivery AQL 0.65 level II, DIN ISO 2859
- In ionized mode, tested according to ITU-T Rec. K.12
- Comparable to the silicon measurement Switching Voltage (Vs)
- Reference REA PE-80, 0.2A. Tested to ITU-T Rec. K.12 and REA PE-80 < 150 msecs.

Product Characteristics

| | |
|------------------------|---|
| Materials | Leaded Device: Tin-plated copper wire Core and Surface Mount: Dull Tin-plated |
| Product Marking | Littelfuse 'LF' Mark, voltage and date code |

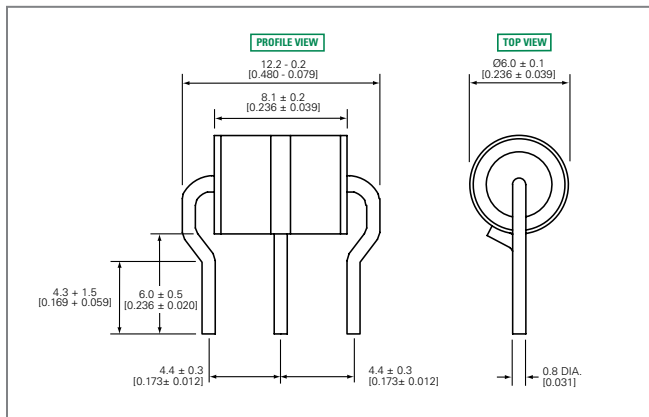
| | |
|--|------------------|
| Glow to Arc Transition Current | ~1 Amp |
| Glow Voltage | ~60 to 200 Volts |
| Storage and Operational Temperature | -40 to +90°C |

Device Dimensions

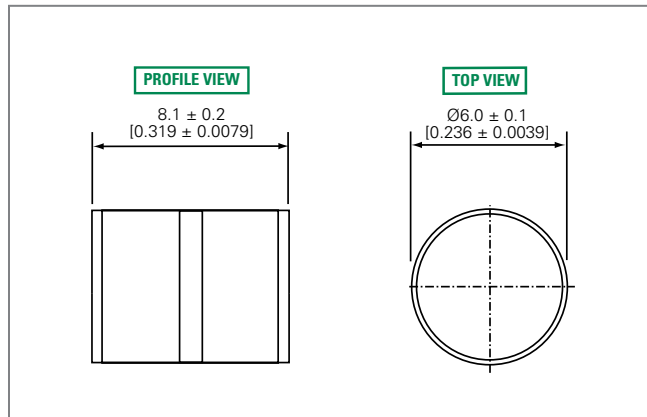
For SL1003A series:

Dimensions are in millimeters [and inches]

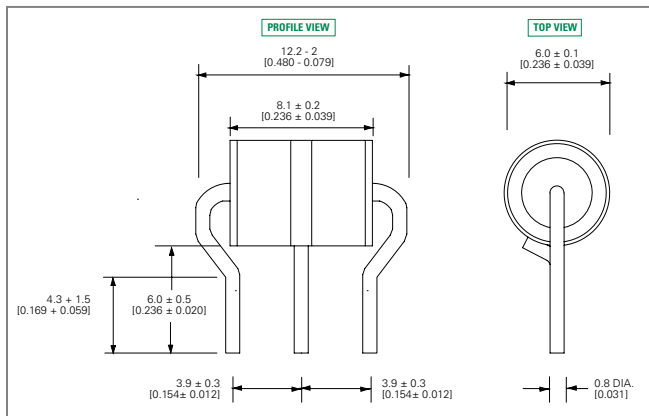
'R' Type Radial Lead Devices (SL1003AxxxR-001)



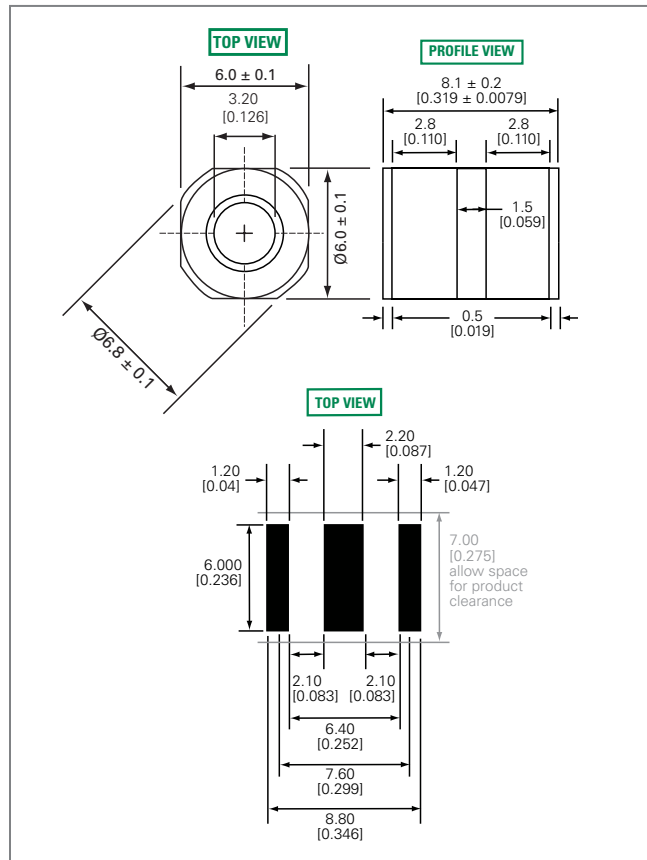
'C' Type Core Devices



'R' Type Radial Lead Devices (SL1003AxxxR and SL1003AxxxRF)

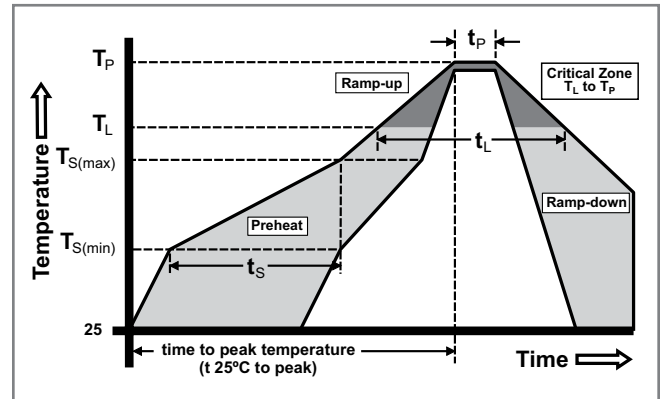


'SM' Type Surface Mount Devices

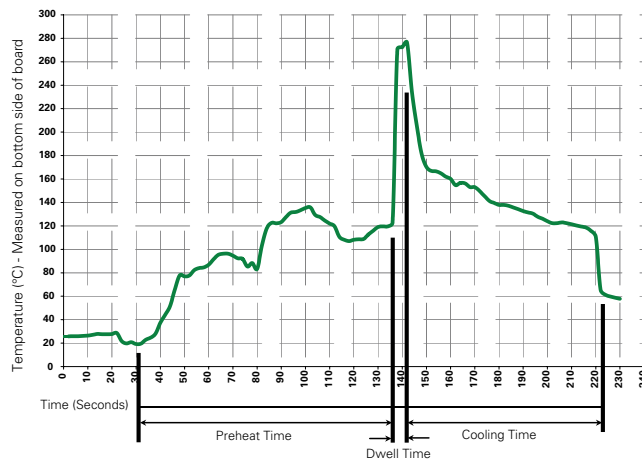


Soldering Parameters - Reflow Soldering (Surface Mount Devices)

| | | |
|--|------------------------------------|-------------------------|
| 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 ^{+0/-5} °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 |



Soldering Parameters - Wave Soldering (Thru-Hole Devices)



Recommended Process Parameters:

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

Soldering Parameters - Hand Soldering

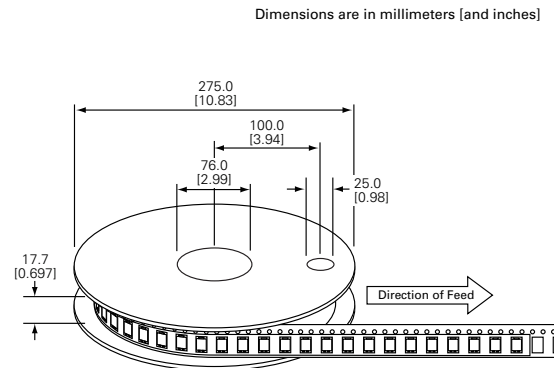
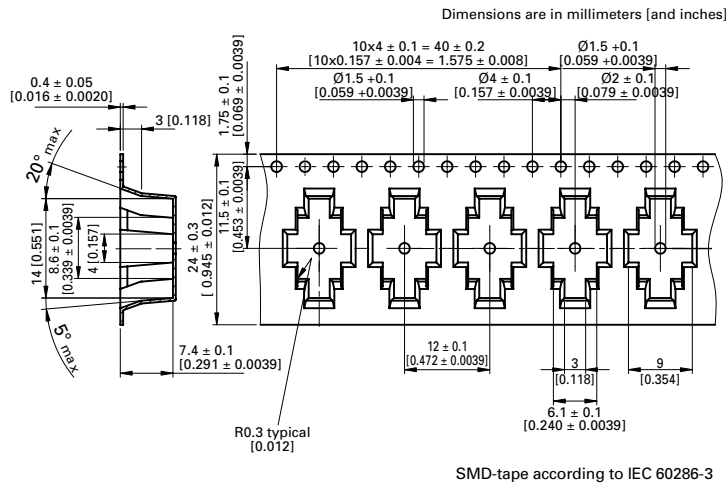
Solder Iron Temperature: 350° C +/- 5°C
Heating Time: 5 seconds max.

Packaging

'C' Type Core Items: Package bulk pack in polybag, 500 pcs/bag

'R' and 'RF' Type Radial Lead Items: Packed in tray, 100 pcs/tray

'SM' Type Surface Mount Items: Packaged tape and reel carrier, 700 pcs/reel (specifications below)



Part Numbering System and Ordering Information

SL1003 A XXX XX

Type 3 Pole Arrestor

Voltage

Pin Configuration

- C** = Core type (Packed in polybag, 500pcs/bag)
- R** = Radial Lead without Failsafe (Packed in tray, 100pcs/tray)
- RF** = Radial Lead with Failsafe (Packed in tray, 100pcs/tray)
- SM** = Surface Mount (Packed in carrier and tape, 700pcs/reel)