

SL1003A Series









Agency Approvals

AGENCY AGENCY FILE NUMBER

E128662

3 Electrode GDT Graphical Symbol



Additional Information







Description

The SL1003A series has been especially developed for Broadband equipment. Special design features provide high levels of protection against fast rising transients in the 100V/µs to 1kV/µs range usually caused by lightning disturbances.

These devices have ultra low capacitance 1.5pF 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, over-current protection is recommended.

Features

- RoHS compliant
- Low insertion loss
- Surface mountable
- 5kA surge capability tested with 8/20/µs 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 ITU-Tk.21, enhanced test level
- 2000 Amp 2/10µs surge rating

Applications

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

Gas Discharge Tubes SL1003A Series

Electrical Characteristics

Device Specifications (at 25°C)				Life Ratings										
Part Number 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		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 Voltage⁴	Max Impulse Discharge Current (1 Application)		
	MIN	TYP	MAX	MAX		MIN	MAX	TYP					TYP	@ 10/350μs
SL1003A090	72	90	108	600	700	1.5 pF (at 100V)							50 V	
SL1003A230	184	230	276											
SL1003A250	200	250	300		750			~10 to	300	10 shots				
SL1003A260	210	260	310				_							
SL1003A300	240	300	360	750	850		35 V	shots	(@10kA)	10 A	30 A		2 kA	
SL1003A350	280	350	420	800	900								135 V	
SL1003A400	320	400	480	850	950 1000									
SL1003A450	360	450	540	900										
SL1003A500	400	500	600	1100	1400									

- Notes: 1. At delivery AQL 0.65 level II, DIN ISO 2859 2. In ionized mode, tested according to ITU-T Rec. K.12
- 3. Comparable to the silicon measurement Switching Voltage (Vs)
 4. 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		

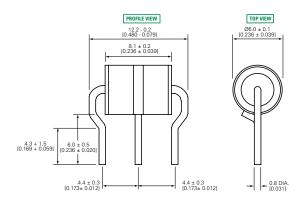


Device Dimensions

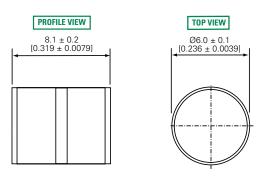
For SL1003A series:

Dimensions are in millimeters (and inches)

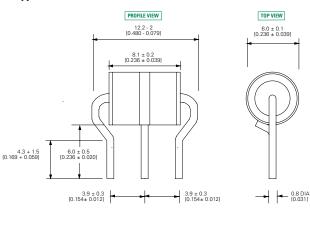
'R' Type Radial Lead Devices (SL1003AxxxR-001)



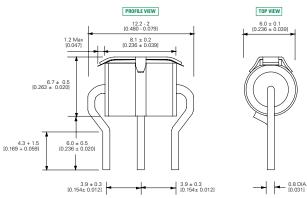
'C' Type Core Devices



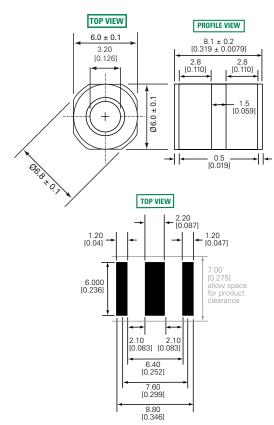
'R' Type Radial Lead Devices (SL1003AxxxR and SL1003AxxxRF)







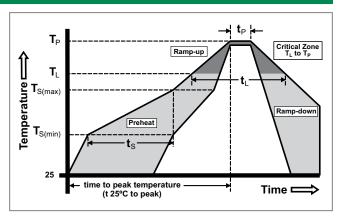
'SM' Type Surface Mount Devices



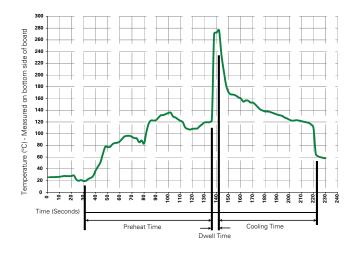


Soldering Parameters - Reflow Soldering (Surface Mount Devices)

Reflow Co	ndition	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 R (T _L) to pea	amp-up Rate (Liquidus Temp k)	3°C/second max.		
T _{S(max)} to T _L	- Ramp-up Rate	5°C/second max.		
- ·	-Temperature (T _L) (Liquidus)	217°C		
Reflow	-Temperature (t _L)	60 – 150 seconds		
PeakTemp	erature (T _P)	260+0/-5 °C		
Time with Temperatu	in 5°C of Actual Peak ure (t _p)	10 – 30 seconds		
Ramp-dov	vn Rate	6°C/second max.		
Time 25°C	to Peak Temperature (T _P)	8 minutes max.		
Do not exc	ceed	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 DwellTime:	2-5 seconds		

Soldering Parameters - Hand Soldering

Solder Iron Temperature: 350° C +/- 5°C

Heating Time: 5 seconds max.



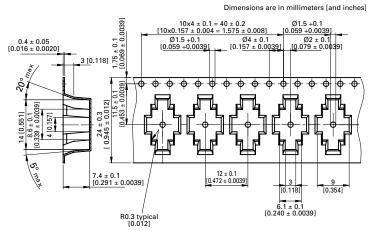
Dimensions are in millimeters [and inches]

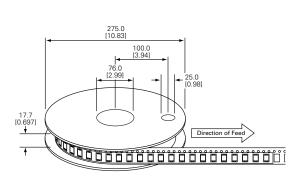
Packaging

'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)





SMD-tape according to IEC 60286-3

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)

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