

SL1010A Series



Description

The SL1010A Series Gas Discharge Tube (GDT) offers a compact, three-terminal, surface mount component that's just 5mm in diameter. It is rated for 10 hits (± 5 repetitions) of a 5kA 8/20 μ s surge event with a low off-state capacitance of 1.5pF. Its low arc voltage parameter of 10V reduces thermal accumulation during long-term power fault events.

Agency Approvals

Agency	Agency File Number
	E128662

Features

- 5mm diameter size
- Low insertion loss
- Fast response time
- Single component balanced protector (T-grd & R-grd)
- High current rating
- Stable performance over lifetime
- Lead-free and RoHS compliant
- UL Recognized

3 Electrode GDT Graphical Symbol



Additional Information

[Datasheet](#)[Resources](#)[Samples](#)

Applications

- Data lines
- Broadband interfaces such as ADSL2/VDSL2
- xDSL equipment
- Satellite and CATV equipment
- General telecom equipment
- Industrial automation
- Home gateway

Electrical Characteristics

Part Number	Device Specifications (at 25°C)								Nominal Impulse Discharge Current (x10@8/20μs)	Nominal Impulse Discharge Current (x1@10/350μs)
	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	Capacitance (@1MHz 0V Bias)	Arc Voltage (on state Voltage) @1Amp Min		
	MIN	TYP	MAX	MAX	MIN	MAX	MIN	MAX		
SL1010A075	60	75	90	450	600	>1GΩ (at 50VDC)	<1.5 pF	~10 V	5kA	1kA
SL1010A090	72	90	108	550	700					
SL1010A170	136	170	204	580	750					
SL1010A230	184	230	276	850	1000					
SL1010A350	280	350	420	650	850					
SL1010A420	335	420	504	800	950					
SL1010A470	376	470	564							

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. Total current through center electrode at 10kA, through side electrode respectively at 5kA

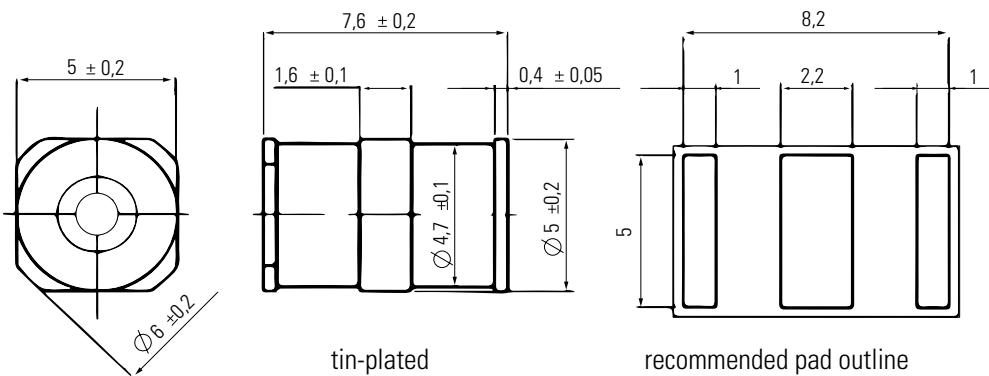
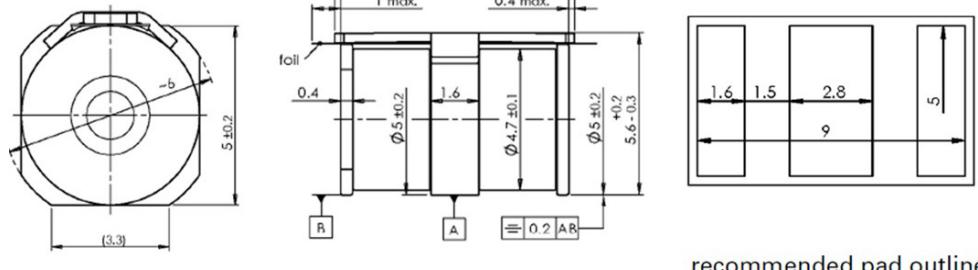
Product Characteristics

Materials	Construction: Ceramic Insulator Device Finish: Dull Tin-plated 17.5 +/- 12.5 microns	Glow to Arc Transition Current ~1 Amp
Product Marking	Littelfuse 'LF' Mark, voltage and date code	Glow Voltage ~60 Volts
		Storage and Operational Temperature -40 to +90°C

Device Dimensions

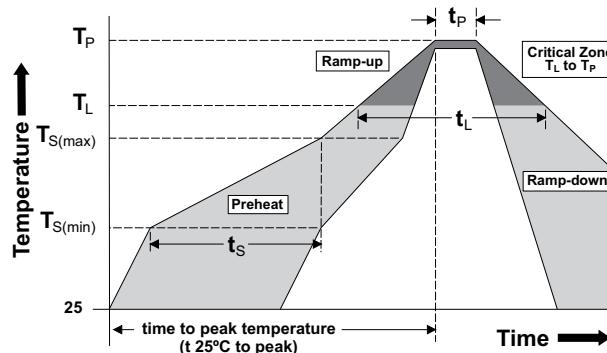
For SL1010A series:

Dimensions are in millimeters (and inches)


For SL1010A series failsafe version:


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



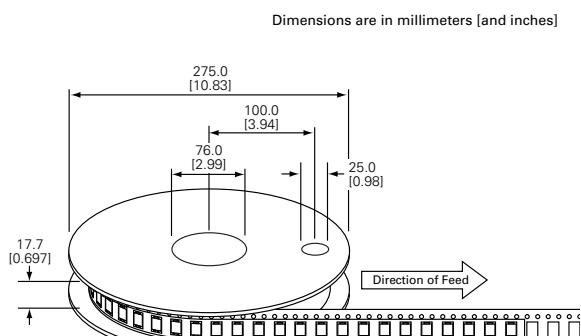
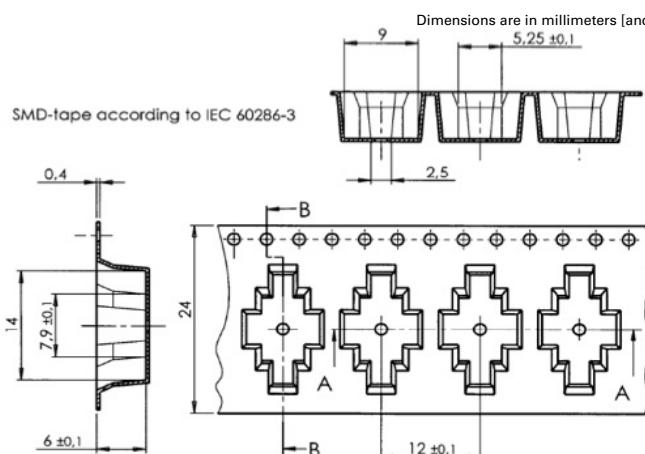
Soldering Parameters - Hand Soldering

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

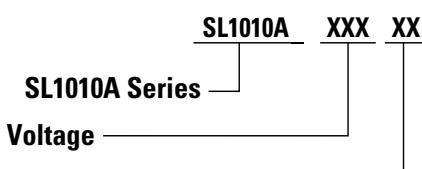
Heating Time: 5 seconds max.

Packaging

'SM' Type Surface Mount Items: Packaged tape and reel carrier, 900 pcs/reel (specifications below)



Part Numbering System and Ordering Information



Pin Configuration

F = with Failsafe (Packed in carrier and tape, 900pcs/reel)

SM = Surface Mount (Packed in carrier and tape, 900pcs/reel)

SMF = Surface Mount with Failsafe (Packed in carrier and tape, 900pcs/reel)

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