

Electrical Characteristics

Part Number	Device Specifications (at 25°C)						Life Ratings								
	DC Breakdown in Volts ^{1,2} (@100V/s)			Impulse Breakdown in Volts ³ (@100V/μs)	Impulse Breakdown In Volts (@1kV/μs)	Insulation Resistance	Capacitance (@1MHz)	Arc Voltage (on state Voltage) @ 1Amp Min	Surge Life (@100A 10/1000μs)	Nominal Impulse Discharge Current (8/20μs)	Nominal AC Discharge Current (10x1s @50-60Hz)	AC Discharge Current (9 Cycles @ 50Hz)	DC Holdover Voltage ⁴	Max Impulse Discharge Current (1 Application)	
	MIN	TYP	MAX	MAX		MIN	MAX	TYP					TYP	@ 8/20μs	@ 10/350μs
SL1011A075 SL1411A075	60	75	90	500	700	10 ¹⁰ Ω (at 50V)	1.5 pF	~20 V	300 shots	SL1011A: 10 shots (@5kA) SL1411A: 10 shots (@10kA)	SL1011A: 5 A SL1411A: 10 A	SL1011A: 20 A SL1411A: 65 A	50 V	SL1411A: 12 kA	1 kA
SL1011A090 SL1411A090	72	90	108	500	600										
SL1011A145 SL1011A150 SL1411A150 ⁵	116	145	174	500	650	10 ¹⁰ Ω (at 100V)	1.5 pF	~20 V	300 shots	SL1011A: 10 shots (@5kA) SL1411A: 10 shots (@10kA)	SL1011A: 5 A SL1411A: 10 A	SL1011A: 20 A SL1411A: 65 A	135 V	SL1411A: 12 kA	1 kA
SL1011A230 SL1411A230	184	230	276	550	700										
SL1011A250 SL1411A250	200	250	300	600	800	10 ¹⁰ Ω (at 100V)	1.5 pF	~20 V	300 shots	SL1011A: 10 shots (@5kA) SL1411A: 10 shots (@10kA)	SL1011A: 5 A SL1411A: 10 A	SL1011A: 20 A SL1411A: 65 A	135 V	SL1411A: 12 kA	1 kA
SL1011A260 SL1011A350 SL1411A350	210	260	310	600	800										
SL1011A470 SL1411A470	376	470	564	1000	1100	10 ¹⁰ Ω (at 100V)	1.5 pF	~20 V	300 shots	SL1011A: 10 shots (@5kA) SL1411A: 10 shots (@10kA)	SL1011A: 5 A SL1411A: 10 A	SL1011A: 20 A SL1411A: 65 A	135 V	SL1411A: 12 kA	1 kA
SL1011A500 SL1011A600 SL1411A600 ⁵	400	500	600	1100	1200										
SL1011A600 SL1411A600 ⁵	480	600	720	1200	1400										

Notes:

- At delivery AQL 0.65 level II, DIN ISO 2859
- In ionized mode
- Comparable to the silicon measurement Switching Voltage (Vs)
- Tested according to ITU-T Rec. K.12 < 150 msec.
- Not UL Recognized

Product Characteristics

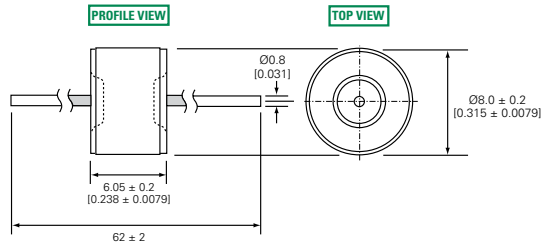
Materials	Leaded Device: Nickel-plated with Tin-plated wires Core and Surface Mount: Dull Tin-plated
Product Marking	Littelfuse 'LF' Mark, voltage and date code

Glow to Arc Transition Current	< 0.5 Amps
Glow Voltage	~60 Volts
Storage and Operational Temperature	-40 to +90°C

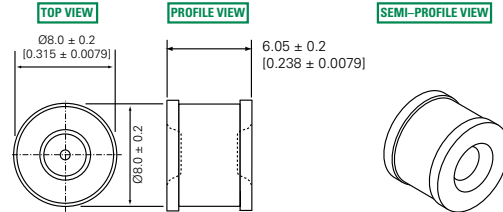
Device Dimensions

For SL1011A Series:

'A' Type Axial Lead Devices

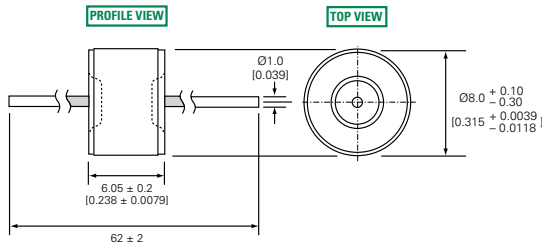


'C' Type Core Devices

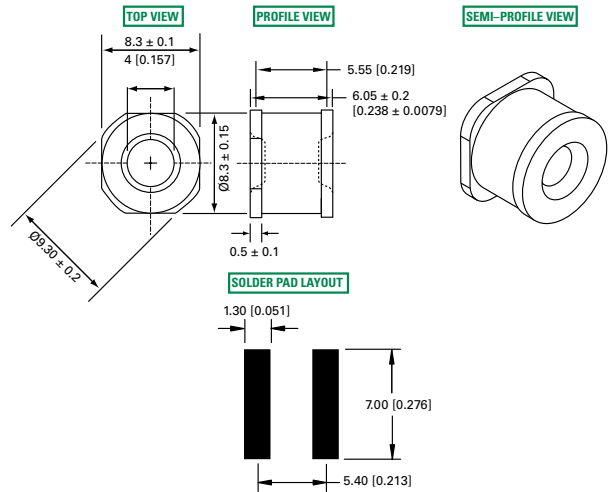


For SL1411A series:

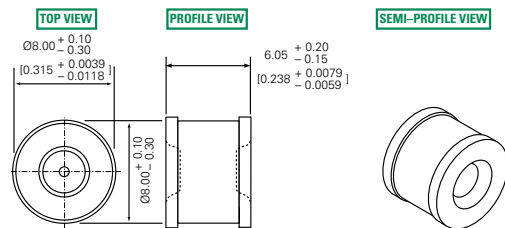
'A' Type Axial Lead Devices



'SM' Type Surface Mount Devices

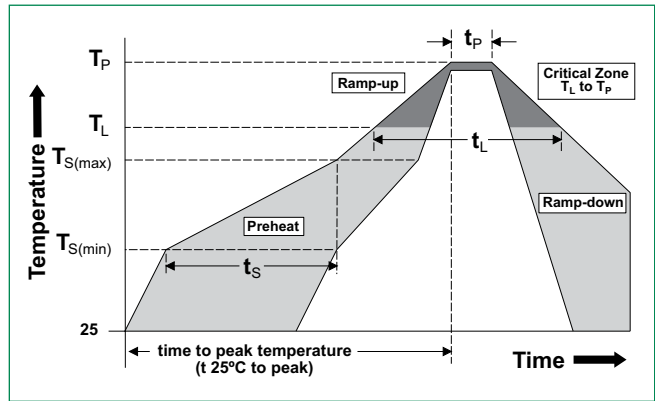


'C' Type Core Devices

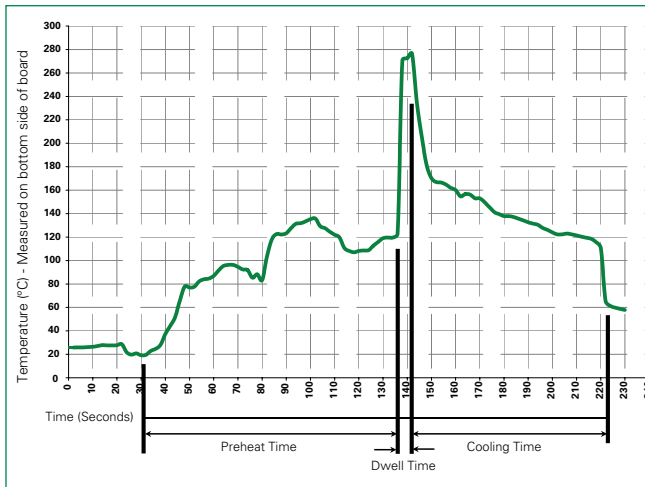


Soldering Parameters - Reflow Soldering (Surface Mount Devices)

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

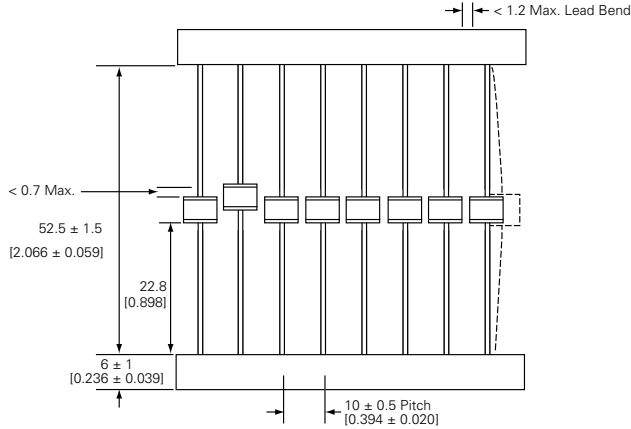
Soldering Parameters - Hand Soldering

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

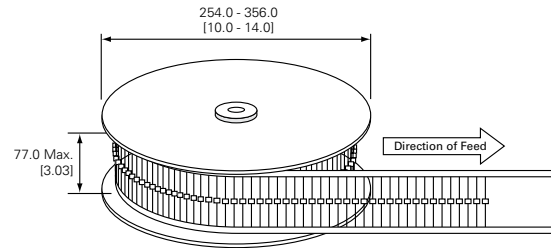
Packaging Dimensions

For Axial Lead Items

Dimensions are in millimeters [and inches]

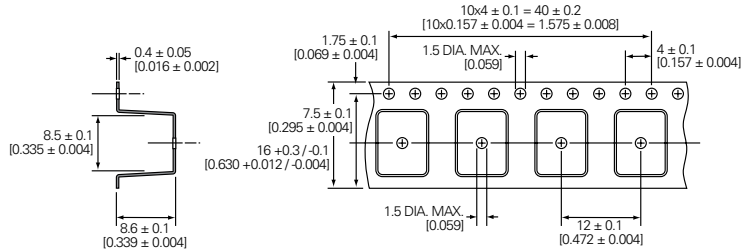


Dimensions are in millimeters [and inches]

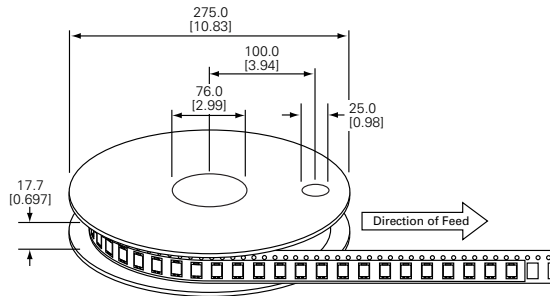


For 'SM' Type Surface Mount Items (SL1411A series only)

Dimensions are in millimeters [and inches]



Dimensions are in millimeters [and inches]



For 'C' Type Core Items: Packed in plastic bag (500 pcs)

Part Numbering System and Ordering Information

For SL1011A series:

SL1011A XXX X

Voltage

Pin Configuration

- A = Axial Lead
- C = Core

Remarks: Formed leads are available on request

SL1411 A XXX XX

Surge Capability

Voltage

Pin Configuration

- A = Axial Lead
- C = Core
- SM = Surface Mount

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Littelfuse:

[SL1011A090N-018](#) [SL1411A075C](#) [SL1411A075A](#) [SL1411A090C](#) [SL1411A090A](#) [SL1411A230SM](#) [SL1411A250SM](#)
[SL1411A600A](#) [SL1411A1000A](#) [SL1411A470A](#) [SL1411A470C](#) [SL1411A600C](#) [SL1411A150A](#) [SL1411A090SM](#)
[SL1411A350A](#) [SL1411A350C](#) [SL1411A230C](#) [SL1411A230A](#) [SL1411A250C](#) [SL1411A250A](#) [SL1411A075SM](#)
[SL1411A350SM](#) [SL1011A500A](#) [SL1011A350C](#) [SL1011B230C](#) [SL1011B090B](#) [SL1011B145C](#) [SL1011A600C](#)
[SL1011B260D](#) [SL1011B250A](#) [SL1011B090C](#) [SL1011B350C](#) [SL1011B090A](#) [SL1011B350D](#) [SL1011B075A](#)
[SL1011B145A](#) [SL1011B150A](#) [SL1011A470C](#) [SL1011A090A](#) [SL1011A145C](#) [SL1011B350A](#) [SL1011B150C](#)
[SL1011B075C](#) [SL1011A260D](#) [SL1011B260A](#) [SL1011B150D](#) [SL1011A470A](#) [SL1011A250A](#) [SL1011A075C](#)
[SL1011A090E](#) [SL1011A260A](#) [SL1011A090C](#) [SL1011B400C](#) [SL1011A500C](#) [SL1011B250C](#) [SL1011B470A](#)
[SL1011A250C](#) [SL1011A230C](#) [SL1011A230E](#) [SL1011B150E](#) [SL1011A350A](#) [SL1011A350D](#) [SL1011B230D](#)
[SL1011B230E](#) [SL1011B230A](#) [SL1011A260C](#) [SL1011A075A](#) [SL1011A150A](#) [SL1011A600A](#) [SL1011B260C](#)
[SL1011A230A](#) [SL1011A150E](#) [SL1011B260E](#) [SL1011B350E](#) [SL1011A090B](#) [SL1011A145A](#) [SL1411A300A](#)
[SL1411A800A](#) [SL1411A470SM](#) [SL1411A600SM](#) [SL1411A260C](#) [SL1411A145A](#) [SL1411A260A](#) [SL1011A075SM](#)