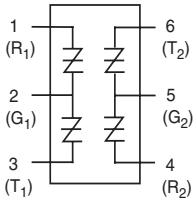
LCAS Asymmetrical Multiport Device

RoHS

Littelfuse



This is an integrated multichip asymmetrical solution for protecting multiple twisted pair from overvoltage conditions. Based on a six-pin surface mount SOIC package, it is equivalent to four discrete DO-214AA or two TO-220 packages. Available in surge current ratings up to 500 A, the multiport line protector is ideal for densely populated line cards that cannot afford PCB inefficiencies or the use of series power resistors.

For a diagram of an LCAS (Line Circuit Access Switch) application, see the following illustrations in Section 6, “Reference Designs” of this *Telecom Design Guide*: Figure 6.31, Figure 6.34 through Figure 6.36, Figure 6.41, Figure 6.43, and Figure 6.44.

Electrical Parameters

Part Number *	V_{DRM} Volts	V_S Volts	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps
	Pins 3-2, 6-5		Pins 1-2, 4-5						
A1220U_4L	100	130	180	220	4	5	800	2.2	120
A1225U_4L	100	130	230	290	4	5	800	2.2	120

* **“L” in part number indicates RoHS compliance.** For non-RoHS compliant device, delete “L” from part number.
For individual “UA”, “UB”, and “UC” surge ratings, see table below.

General Notes:
- All measurements are made at an ambient temperature of 25 °C. I_{PP} applies to -40 °C through +85 °C temperature range.
- I_{PP} is a repetitive surge rating and is guaranteed for the life of the product.
- Listed *SIDACtor*® devices are bi-directional. All electrical parameters and surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100 V/µs.
- Special voltage (V_S and V_{DRM}) and holding current (I_H) requirements are available upon request.

Surge Ratings in Amps

Series	I_{PP}									I_{TSM}	di/dt
	0.2x310 * 0.5x700 **	2x10 * 2x10 **	8x20 * 1.2x50 **	10x160 * 10x160 **	10x560 * 10x560 **	5x320 * 9x720 **	10x360 * 10x360 **	10x1000 * 10x1000 **	5x310 * 10x700 **	50 / 60 Hz	
	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps/µs
A	20	150	150	90	50	75	75	45	75	20	500
B	25	250	250	150	100	100	125	80	100	30	500
C	50	500	400	200	150	200	175	100	200	50	500

* Current waveform in µs
** Voltage waveform in µs

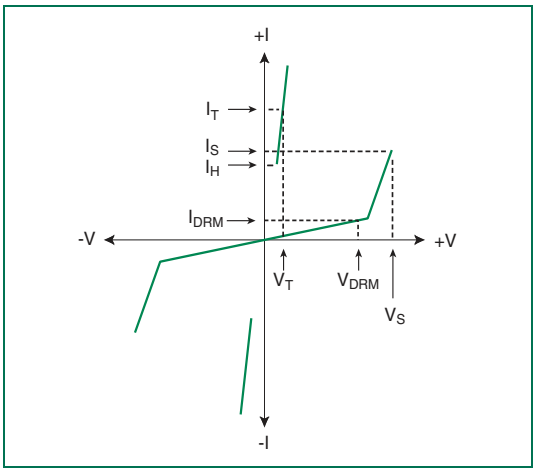
Thermal Considerations

Package	Symbol	Parameter	Value	Unit
Modified MS-013 	T_J	Operating Junction Temperature Range	-40 to +125	°C
	T_S	Storage Temperature Range	-65 to +150	°C
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	60	°C/W

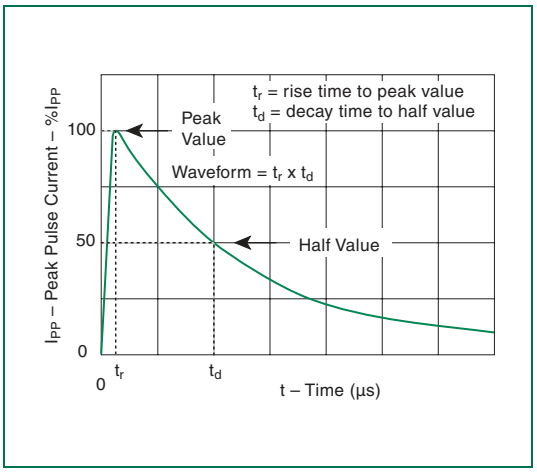
Capacitance Values

Part Number	pF Pin 1-2 / 4-5 Ring-Ground		pF Pin 3-2 / 6-5 Tip-Ground		pF Pin 1-3 (4-6) Tip-Ring	
	MIN	MAX	MIN	MAX	MIN	MAX
A1220UA4L	15	25	30	50	5	20
A1220UB4L	15	55	30	110	5	35
A1220UC4L	15	55	30	110	10	35
A1225UA4L	15	25	30	50	5	20
A1225UB4L	15	50	30	90	5	35
A1225UC4L	15	50	30	90	10	35

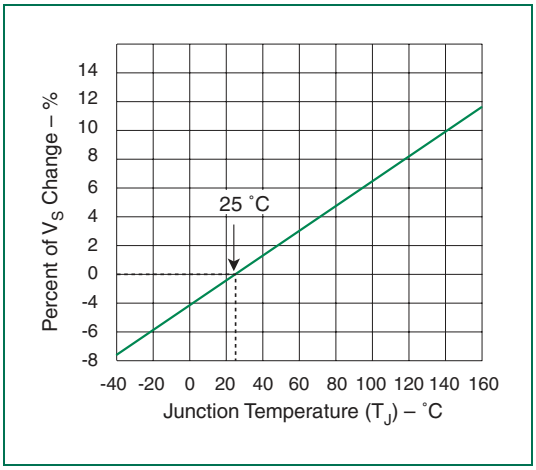
Note: Off-state capacitance (C_O) is measured at 1 MHz with a 2 V bias.



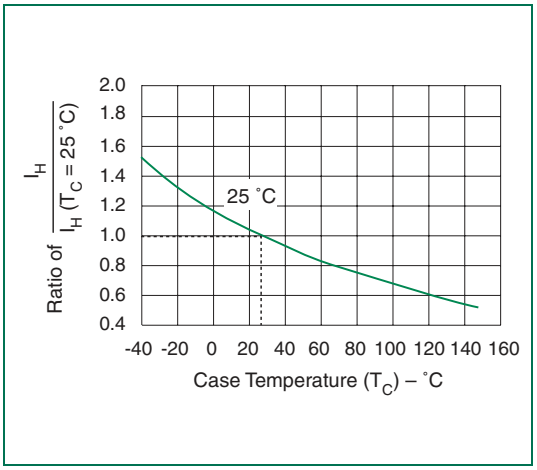
V-I Characteristics



t_r x t_d Pulse Waveform



Normalized V_S Change versus Junction Temperature



Normalized DC Holding Current versus Case Temperature