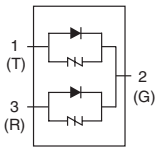
Two-chip SLIC Protector Modified TO-220

RoHS

Littelfuse



This two-chip SLIC modified TO-220 unidirectional protector is constructed with a *SIDACtor*® device and an integrated diode. It protects SLICs (Subscriber Line Interface Circuits) from damage during transient voltage activity and enables line cards to comply with various regulatory requirements including GR 1089, ITU K.20, K.21 and K.45, IEC 60950, UL 60950, and TIA-968-A (formerly known as FCC Part 68).

For details of specific design criteria, see Figure 6.40 through Figure 6.43 in Section 6, "Reference Designs" of this *Telecom Design Guide*.

Electrical Parameters

Part Number *	V_{DRM} Volts	V_S Volts	V_T Volts	V_F Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps
	Pins 1-2, 3-2							
P0641A_2L	58	77	4	5	5	800	2.2	120
P0721A_2L	65	88	4	5	5	800	2.2	120
P0901A_2L	75	98	4	5	5	800	2.2	120
P1101A_2L	95	130	4	5	5	800	2.2	120
P1301A_2L	120	160	4	5	5	800	2.2	120
P1701A_2L	160	200	4	5	5	800	2.2	120

* **"L" in part number indicates RoHS compliance.** For non-RoHS compliant device, delete "L" from part number.
For surge ratings, see table below.

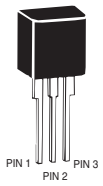
General Notes:
- All measurements are made at an ambient temperature of 25 °C. I_{PP} applies to -40 °C through +85 °C temperature range.
- I_{PP} is a repetitive surge rating and is guaranteed for the life of the product.
- V_{DRM} is measured at I_{DRM}.
- V_S and V_F are measured at 100 V/µs.
- Special voltage (V_S and V_{DRM}) and holding current (I_H) requirements are available upon request.
- Parallel capacitive loads may affect electrical parameters.
- Compliance with GR 1089 or UL 60950 power fault tests may require special design considerations. Contact the factory for further information.

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
C	50	500	400	200	150	200	175	100	200	50	500

* Current waveform in µs
** Voltage waveform in µs

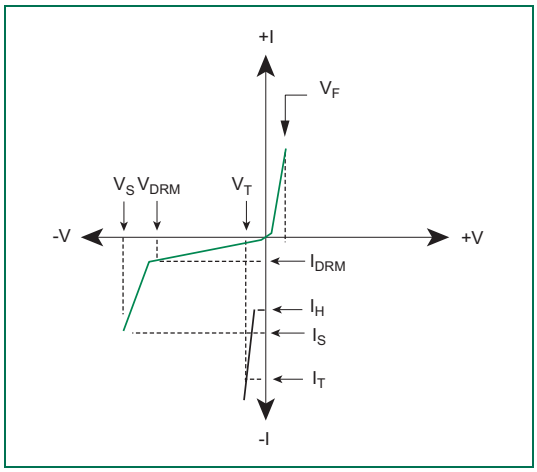
Thermal Considerations

Package	Symbol	Parameter	Value	Unit
Modified TO-220 	T_J	Operating Junction Temperature Range	-40 to +150	°C
	T_S	Storage Temperature Range	-65 to +150	°C
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	50	°C/W

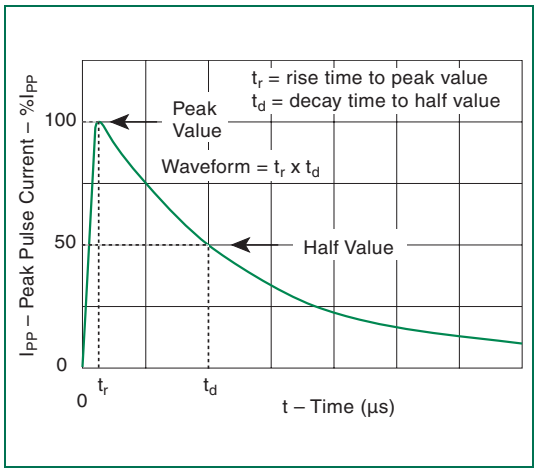
Capacitance Values

Part Number	pF		pF Pin 1-2 / 3-2 (4-5 / 6-5) Tip-Ground, Ring-Ground	
	MIN	MAX	MIN	MAX
P0641AA2L	40	200	20	105
P0641AC2L	40	200	20	105
P0721AA2L	35	190	20	105
P0721AC2L	35	190	20	105
P0901AA2L	30	180	20	105
P0901AC2L	30	180	20	105
P1101AA2L	25	160	15	105
P1101AC2L	25	160	15	105
P1301AA2L	25	160	15	105
P1301AC2L	25	160	15	105
P1701AA2L	25	125	15	105
P1701AC2L	25	125	15	105

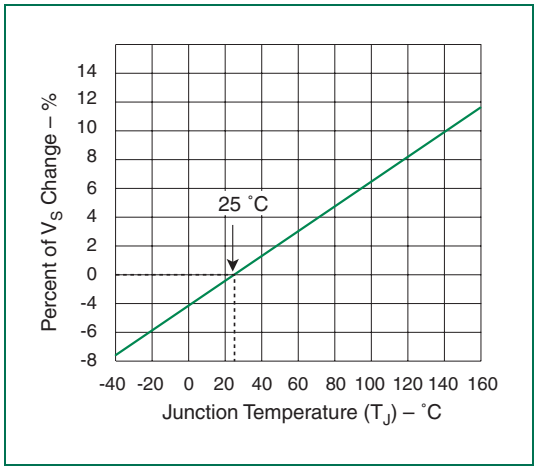
Note: Off-state capacitance (C_O) is measured at 1 MHz with a 2 V bias.



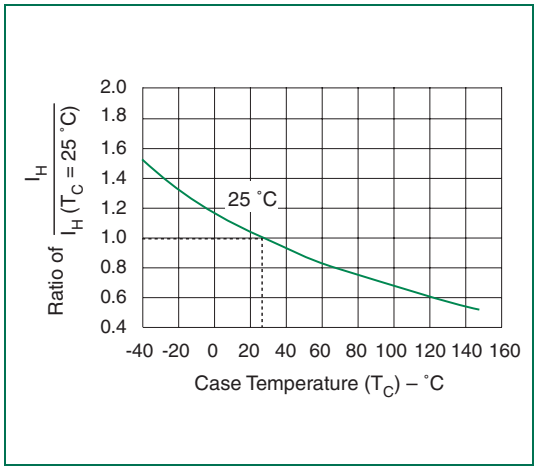
V-I Characteristics



t_r x t_d Pulse Waveform



Normalized V_S Change versus Junction Temperature



Normalized DC Holding Current versus Case Temperature