

## Balanced Three-chip SIDACTor Device



The three-chip modified TO-220 *SIDACTor* balanced solid state device is designed for telecommunication protection systems that reference Tip and Ring to earth ground. Applications include any piece of transmission equipment that requires balanced protection. This device is built using Littelfuse's patented "Y" (US Patent 4,905,119) configuration.

The *SIDACTor* device is used to enable equipment to meet 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).

### Electrical Parameters

Part Number *	V <sub>DRM</sub> Volts	V <sub>S</sub> Volts	V <sub>DRM</sub> Volts	V <sub>S</sub> Volts	V <sub>T</sub> Volts	I <sub>DRM</sub> $\mu$ Amps	I <sub>S</sub> mAmps	I <sub>T</sub> Amps	I <sub>H</sub> mAmps	C <sub>O</sub> pF
	Pins 1-2, 2-3		Pins 1-3							
P1553A_	130	180	130	180	8	5	800	2.2	150	40
P1803A_	150	210	150	210	8	5	800	2.2	150	40
P2103A_	170	250	170	250	8	5	800	2.2	150	40
P2353A_	200	270	200	270	8	5	800	2.2	150	40
P2703A_	230	300	230	300	8	5	800	2.2	150	30
P3203A_	270	350	270	350	8	5	800	2.2	150	30
P3403A_	300	400	300	400	8	5	800	2.2	150	30
P5103A_	420	600	420	600	8	5	800	2.2	150	30
A2106A_3 **	170	250	50	80	8	5	800	2.2	120	40
A5030A_3 **	400	550	270	340	8	5	800	2.2	150	30

\* For individual "AA", "AB", and "AC" surge ratings, see table below.

\*\* Asymmetrical

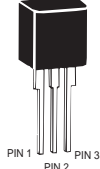
#### General Notes:

- All measurements are made at an ambient temperature of 25 °C. I<sub>PP</sub> applies to -40 °C through +85 °C temperature range.
- I<sub>PP</sub> 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<sub>DRM</sub> is measured at I<sub>DRM</sub>.
- V<sub>S</sub> is measured at 100 V/ $\mu$ s.
- Special voltage (V<sub>S</sub> and V<sub>DRM</sub>) and holding current (I<sub>H</sub>) requirements are available upon request.
- Off-state capacitance (C<sub>O</sub>) is measured between Pins 1-2 and 3-2 at 1 MHz with a 2 V bias and is a typical value for "AA" product. "AB" and "AC" capacitance is approximately 2x the listed value.
- Device is designed to meet balance requirements of GTS 8700 and GR 974.

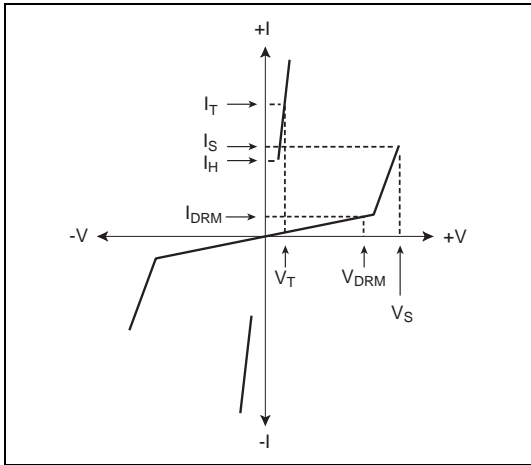
### Surge Ratings

Series	I <sub>PP</sub> 2x10 $\mu$ s Amps	I <sub>PP</sub> 8x20 $\mu$ s Amps	I <sub>PP</sub> 10x160 $\mu$ s Amps	I <sub>PP</sub> 10x560 $\mu$ s Amps	I <sub>PP</sub> 10x1000 $\mu$ s Amps	I <sub>TSM</sub> 60 Hz Amps	di/dt Amps/ $\mu$ s
A	150	150	90	50	45	20	500
B	250	250	150	100	80	30	500
C	500	400	200	150	100	50	500

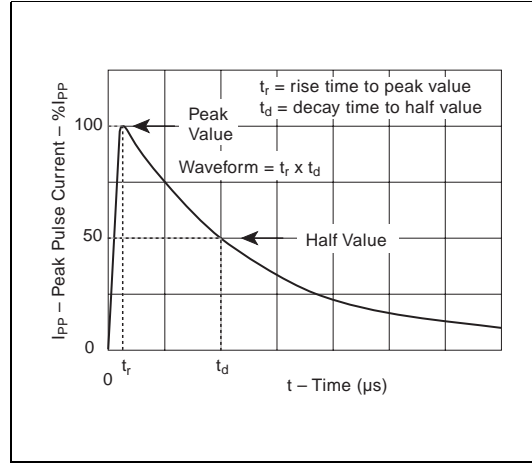
Thermal Considerations

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

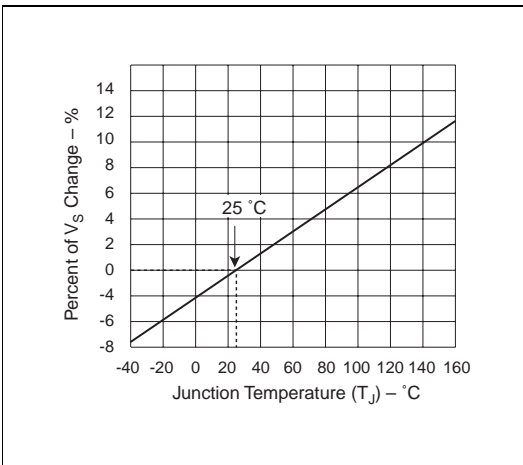
Data Sheets



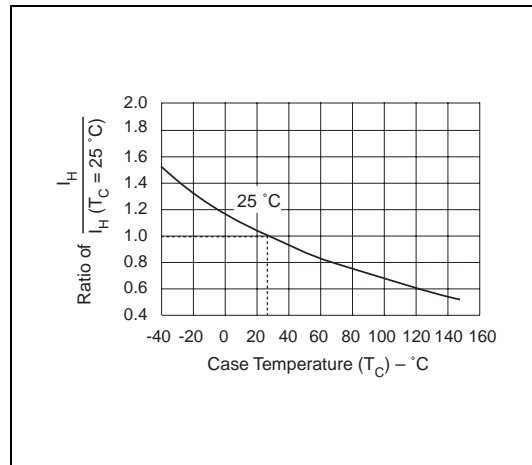
V-I Characteristics



$t_r \times t_d$  Pulse Wave-form



Normalized  $V_S$  Change versus Junction Temperature



Normalized DC Holding Current versus Case Temperature

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