# **CATV Line Amplifiers/Power Inserters NE SIDACtor Device**



This SIDACtor device is a 3000 A solid state protection device offered in a non-isolated TO-263 (D<sup>2</sup>) package. It protects equipment located in the severe surge environment of CATV (Community Antenna TV) applications.

In CATV line amplifiers and power inserters, this device can replace the gas tubes traditionally used for station protection because SIDACtor devices have much tighter voltage tolerances.

# **Electrical Parameters**

Part	V <sub>DRM</sub>	V <sub>S</sub>	V <sub>T</sub>	I <sub>DRM</sub>	I <sub>S</sub>	I <sub>T</sub>	I <sub>H</sub>	C <sub>O</sub>
Number *	Volts	Volts	Volts	μAmps	mAmps	Amps **	mAmps	pF
P1900NE	140	220	4	5	800	2.2/25	50	260

#### 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.
- $\ensuremath{\mathsf{I}_{PP}}$  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<sub>DRM</sub> is measured at I<sub>DRM</sub>.
- V<sub>S</sub> is measured at 100 V/μs.
- 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 at 1 MHz with a 2 V bias and is a typical value.

# **Surge Ratings**

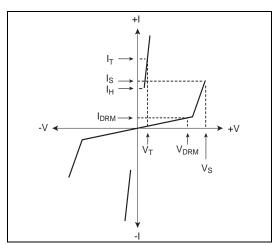
Series	I <sub>PP</sub> 8x20 μs Amps	I <sub>TSM</sub> 60 Hz Amps	di/dt Amps/μs
E	3000	400	500

<sup>\*</sup> For surge ratings, see table below.
\*\* I<sub>T</sub> is a free air rating; heat sink I<sub>T</sub> rating is 25 A.

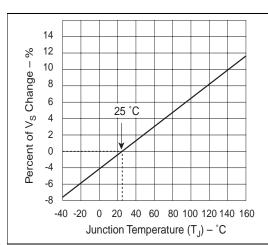
# **Thermal Considerations**

Package	Symbol	Parameter	Value	Unit
	TJ	Operating Junction Temperature Range	-40 to +150	°C
TO-263 D <sup>2</sup> PAK	T <sub>S</sub>	T <sub>S</sub> Storage Temperature Range		°C
Pin2 Pin3	T <sub>C</sub>	T <sub>C</sub> Maximum Case Temperature		°C
Pin2	R <sub>θJC</sub> ∗	Thermal Resistance: Junction to Case	1.7	°C/W
Pin1	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	56	°C/W

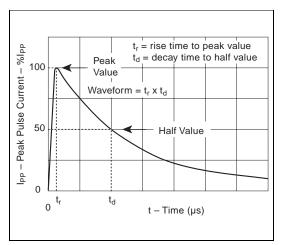
<sup>\*</sup> R<sub>0JC</sub> rating assumes the use of a heat sink and on state mode for extended time at 25 A, with average power dissipation of 29.125 W.



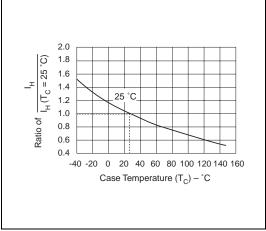
V-I Characteristics



Normalized V<sub>S</sub> Change versus Junction Temperature



 $t_{r} x t_{d}$  Pulse Wave-form



Normalized DC Holding Current versus Case Temperature