

# CATV Line Amplifiers/Power Inserters 3 kA *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) systems and antenna locations.

## Electrical Parameters

| Part Number * | V <sub>DRM</sub><br>Volts | V <sub>S</sub><br>Volts | V <sub>T</sub><br>Volts | I <sub>DRM</sub><br>μAmps | I <sub>S</sub><br>mAmps | I <sub>T</sub><br>Amps ** | I <sub>H</sub><br>mAmps |
|---------------|---------------------------|-------------------------|-------------------------|---------------------------|-------------------------|---------------------------|-------------------------|
| P1500NEL      | 140                       | 180                     | 4                       | 5                         | 800                     | 2.2/25                    | 50                      |
| P1900NEL      | 140                       | 220                     | 4                       | 5                         | 800                     | 2.2/25                    | 50                      |
| P2300NEL      | 180                       | 260                     | 4                       | 5                         | 800                     | 2.2/25                    | 50                      |

\* "L" in part number indicates RoHS compliance. For non-RoHS compliant device, delete "L" from part number.  
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.

### 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/μs.
- Special voltage (V<sub>S</sub> and V<sub>DRM</sub>) and holding current (I<sub>H</sub>) requirements are available upon request.

## Surge Ratings in Amps

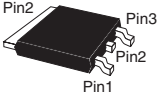
| Series | I <sub>PP</sub>     | I <sub>TSM</sub><br>50 / 60 Hz | di/dt   |
|--------|---------------------|--------------------------------|---------|
|        | 8x20 *<br>1.2x50 ** |                                |         |
|        | Amps                | Amps                           | Amps/μs |
| E      | 3000                | 400                            | 500     |

\* Current waveform in μs

\*\* Voltage waveform in μs

SIDACtor Devices

### Thermal Conditions

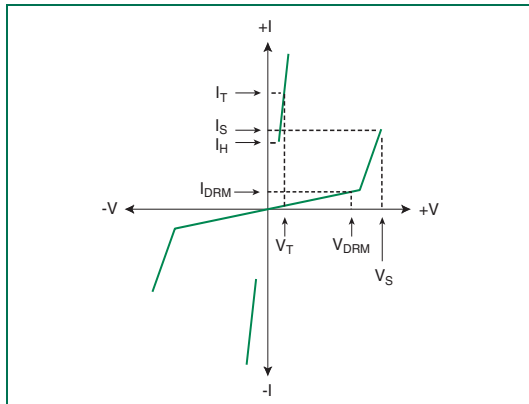
| Package                                                                                                           | Symbol            | Parameter                               | Value       | Unit |
|-------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|-------------|------|
| TO-263<br>D <sup>2</sup> PAK<br> | $T_J$             | Operating Junction Temperature Range    | -40 to +150 | °C   |
|                                                                                                                   | $T_S$             | Storage Temperature Range               | -65 to +150 | °C   |
|                                                                                                                   | $T_C$             | Maximum Case Temperature                | 100         | °C   |
|                                                                                                                   | $R_{\theta JC}^*$ | Thermal Resistance: Junction to Case    | 1.7         | °C/W |
|                                                                                                                   | $R_{\theta JA}$   | Thermal Resistance: Junction to Ambient | 56          | °C/W |

\*  $R_{\theta JC}$  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.

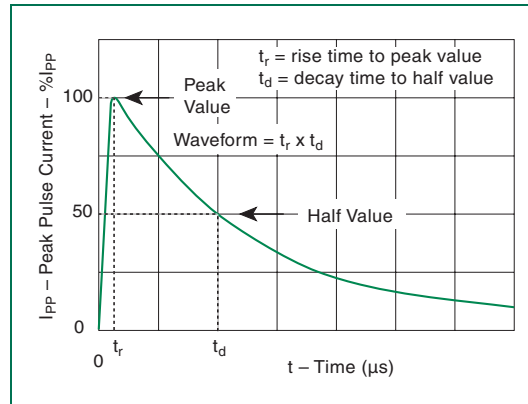
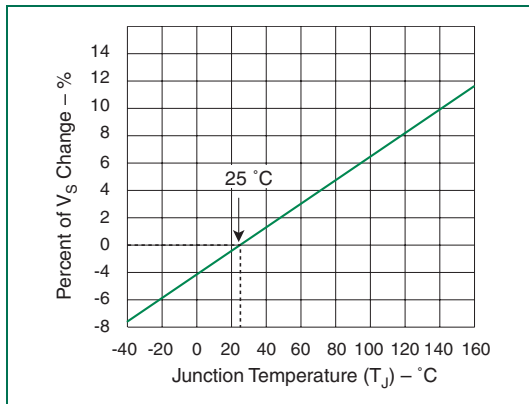
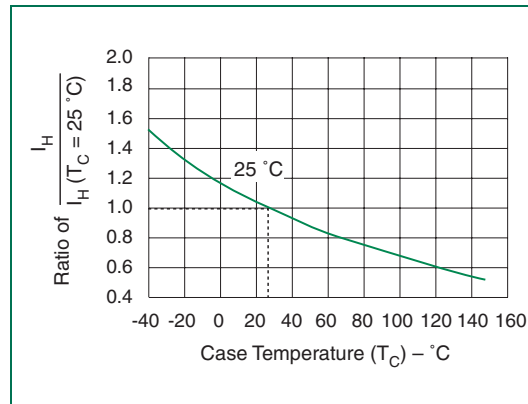
### Capacitance Values

| Part Number | pF  |     |
|-------------|-----|-----|
|             | MIN | MAX |
| P1500NEL    | 260 | 650 |
| P1900NEL    | 260 | 650 |
| P2300NEL    | 350 | 600 |

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



V-I Characteristics


 $t_r \times t_d$  Pulse Waveform

Normalized  $V_S$  Change versus Junction Temperature


Normalized DC Holding Current versus Case Temperature

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