

## MicroCapacitance (MC) SC *SIDACtor*® Device



These DO-214AA SCMC *SIDACtor* devices are intended for applications sensitive to load values. Typically, high speed connections, such as xDSL and T1/E1, require a lower capacitance.  $C_O$  values for the MicroCapacitance device are 40 percent lower than a standard SC part.

This SCMC *SIDACtor* series enables equipment to comply with various regulatory requirements including GR 1089, IEC 60950, UL 60950, TIA-968-A (formerly known as FCC Part 68), and ITU K.20, K.21, and K.45.

SIDACtor Devices

### Electrical Parameters

| Part Number * | $V_{DRM}$<br>Volts | $V_S$<br>Volts | $V_T$<br>Volts | $I_{DRM}$<br>$\mu$ Amps | $I_S$<br>mAmps | $I_T$<br>Amps | $I_H$<br>mAmps |
|---------------|--------------------|----------------|----------------|-------------------------|----------------|---------------|----------------|
| P0080SCMCL    | 6                  | 25             | 4              | 5                       | 800            | 2.2           | 50             |
| P0220SCMCL    | 15                 | 32             | 4              | 5                       | 800            | 2.2           | 50             |
| P0300SCMCL    | 25                 | 40             | 4              | 5                       | 800            | 2.2           | 50             |
| P0640SCMCL    | 58                 | 77             | 4              | 5                       | 800            | 2.2           | 150            |
| P0720SCMCL    | 65                 | 88             | 4              | 5                       | 800            | 2.2           | 150            |
| P0900SCMCL    | 75                 | 98             | 4              | 5                       | 800            | 2.2           | 150            |
| P1100SCMCL    | 90                 | 130            | 4              | 5                       | 800            | 2.2           | 150            |
| P1200SCMCL    | 100                | 130            | 4              | 5                       | 800            | 2.2           | 120            |
| P1300SCMCL    | 120                | 160            | 4              | 5                       | 800            | 2.2           | 150            |
| P1500SCMCL    | 140                | 180            | 4              | 5                       | 800            | 2.2           | 150            |
| P1800SCMCL    | 170                | 220            | 4              | 5                       | 800            | 2.2           | 150            |
| P2000SCMCL    | 180                | 220            | 4              | 5                       | 800            | 2.2           | 120            |
| P2100SCMCL    | 180                | 240            | 4              | 5                       | 800            | 2.2           | 150            |
| P2300SCMCL    | 190                | 260            | 4              | 5                       | 800            | 2.2           | 150            |
| P2500SCMCL    | 230                | 290            | 4              | 5                       | 800            | 2.2           | 120            |
| P2600SCMCL    | 220                | 300            | 4              | 5                       | 800            | 2.2           | 150            |
| P3100SCMCL    | 275                | 350            | 4              | 5                       | 800            | 2.2           | 150            |
| P3500SCMCL    | 320                | 400            | 4              | 5                       | 800            | 2.2           | 150            |

\* "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.
- 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/ $\mu$ s.
- Special voltage ( $V_S$  and  $V_{DRM}$ ) and holding current ( $I_H$ ) requirements are available upon request.

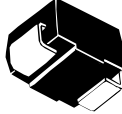
### Surge Ratings in Amps

| Series | I <sub>PP</sub>         |                   |                     |                       |                       |                     |                       |                         |                      | I <sub>TSM</sub><br>50 / 60 Hz | di/dt |
|--------|-------------------------|-------------------|---------------------|-----------------------|-----------------------|---------------------|-----------------------|-------------------------|----------------------|--------------------------------|-------|
|        | 0.2x310 *<br>0.5x700 ** | 2x10 *<br>2x10 ** | 8x20 *<br>1.2x50 ** | 10x160 *<br>10x160 ** | 10x560 *<br>10x560 ** | 5x320 *<br>9x720 ** | 10x360 *<br>10x360 ** | 10x1000 *<br>10x1000 ** | 5x310 *<br>10x700 ** |                                |       |
|        | Amps                    | Amps              | Amps                | Amps                  | Amps                  | Amps                | Amps                  | Amps                    | Amps                 |                                |       |
| C      | 50                      | 500               | 400                 | 200                   | 150                   | 200                 | 175                   | 100                     | 200                  | 30                             | 500   |

\* Current waveform in  $\mu$ s

\*\* Voltage waveform in  $\mu$ s

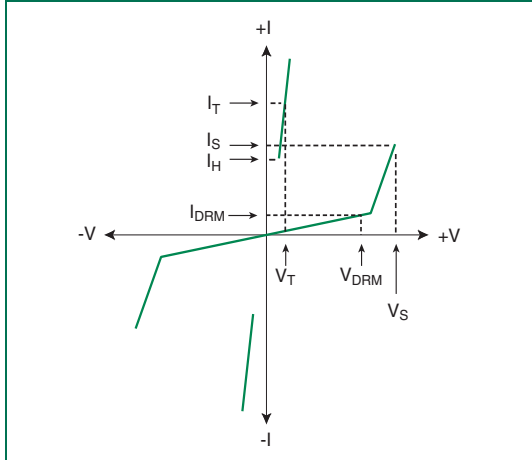
### Thermal Considerations

| Package                                                                                       | Symbol           | Parameter                               | Value       | Unit |
|-----------------------------------------------------------------------------------------------|------------------|-----------------------------------------|-------------|------|
| DO-214AA<br> | T <sub>J</sub>   | Operating Junction Temperature Range    | -40 to +150 | °C   |
|                                                                                               | T <sub>S</sub>   | Storage Temperature Range               | -65 to +150 | °C   |
|                                                                                               | R <sub>θJA</sub> | Thermal Resistance: Junction to Ambient | 90          | °C/W |

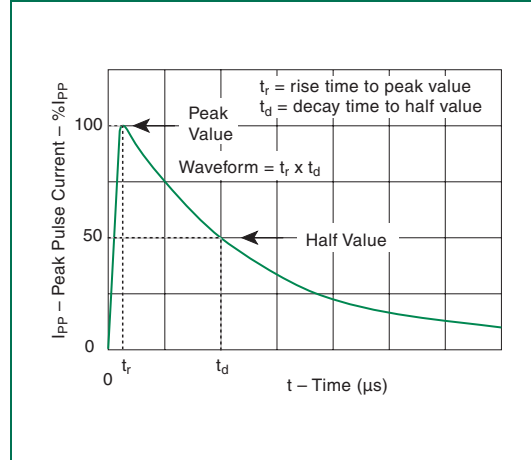
### Capacitance Values

| Part Number | pF  |     |
|-------------|-----|-----|
|             | MIN | MAX |
| P0080SCMCL  | 35  | 75  |
| P0220SCMCL  | 30  | 65  |
| P0300SCMCL  | 25  | 45  |
| P0640SCMCL  | 55  | 85  |
| P0720SCMCL  | 50  | 75  |
| P0900SCMCL  | 45  | 70  |
| P1100SCMCL  | 45  | 70  |
| P1200SCMCL  | 45  | 65  |
| P1300SCMCL  | 40  | 60  |
| P1500SCMCL  | 35  | 55  |
| P1800SCMCL  | 35  | 50  |
| P2000SCMCL  | 35  | 50  |
| P2100SCMCL  | 30  | 50  |
| P2300SCMCL  | 30  | 50  |
| P2500SCMCL  | 30  | 45  |
| P2600SCMCL  | 30  | 45  |
| P3100SCMCL  | 30  | 45  |
| P3500SCMCL  | 25  | 40  |

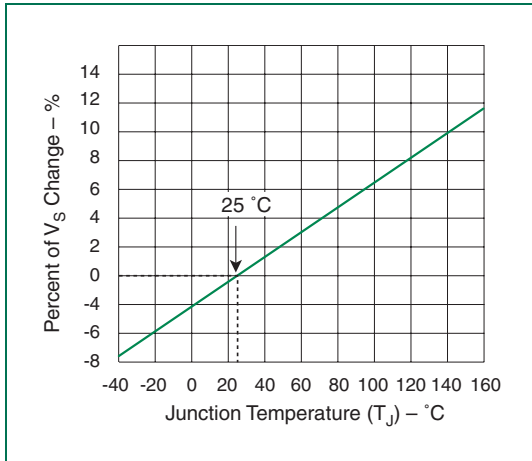
Note: Off-state capacitance (C<sub>O</sub>) is measured at 1 MHz with a 2 V bias.



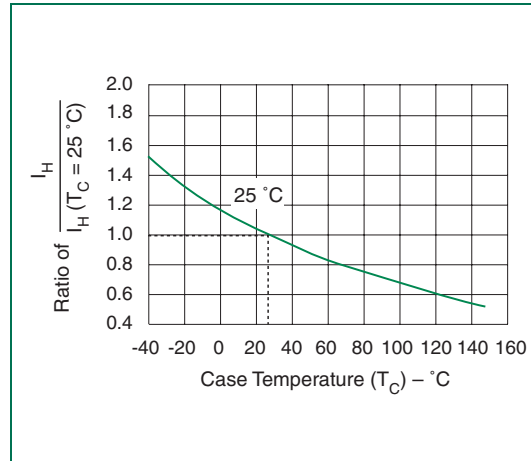
V-I Characteristics



$t_r \times t_d$  Pulse Waveform



Normalized  $V_S$  Change versus Junction Temperature



Normalized DC Holding Current versus Case Temperature