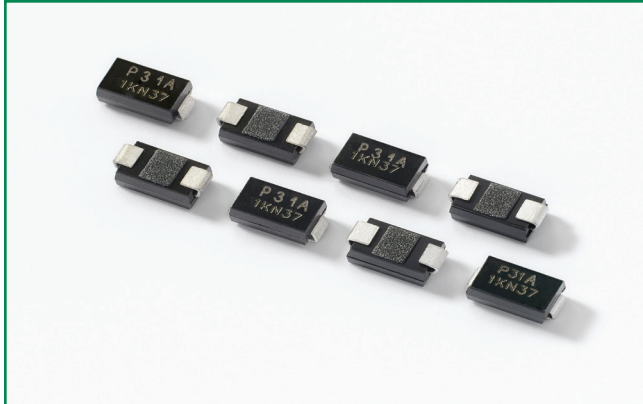


**RoHS SIDACtor® Series - SMA**



**Agency Approvals**

| Agency | Agency File Number |
|--------|--------------------|
|        | E133080            |

**Schematic Symbol**



**Description**

SIDACtor® SMA Series are designed to protect baseband equipment such as phones, faxes, modems, line cards, CPE and DSL from damaging overvoltage transients.

The series provides a surface mount solution that enables equipment to comply with global regulatory standards.

**Features and Benefits**

- Low voltage overshoot
- Low on-state voltage
- Does not degrade surge capability after multiple surge events within limit.
- Fails short circuit when surged in excess of ratings
- Low capacitance

**Applicable Global Standards**

- TIA-968-A\*
- TIA-968-B\*
- ITU K.20/21 Enhanced Level\*
- ITU K.20/21 Basic Level
- GR 1089 Inter-building\*
- GR 1089 Intra-building
- IEC 61000-4-5\*
- YD/T 1082
- YD/T 993
- YD/T 950

\* Line impedance required to pass operationally

**Electrical Characteristics**

| Part Number  | Marking | $V_{DRM}$<br>@ $I_{DRM}=5\mu A$ | $V_S$<br>@ 100V/ $\mu s$ | $I_H$  | $I_S$  | $I_T$ | $V_T$<br>@ $I_T=2.2$ Amps | Capacitance<br>@ 1MHz, 2V bias |        |
|--------------|---------|---------------------------------|--------------------------|--------|--------|-------|---------------------------|--------------------------------|--------|
|              |         | V min                           | V max                    | mA min | mA max | A max | V max                     | pF min                         | pF max |
| P0080S1ALRP  | P-8A    | 6                               | 25                       | 50     | 800    | 2.2   | 4                         | 25                             | 35     |
| P1800S1ALRP* | P18A    | 170                             | 220                      | 150    | 800    | 2.2   | 4                         | 15                             | 50     |
| P2300S1ALRP* | P23A    | 190                             | 260                      | 150    | 800    | 2.2   | 4                         | 15                             | 50     |
| P2600S1ALRP* | P26A    | 220                             | 300                      | 150    | 800    | 2.2   | 4                         | 15                             | 50     |
| P3100S1ALRP  | P31A    | 275                             | 350                      | 150    | 800    | 2.2   | 4                         | 15                             | 50     |
| P3500S1ALRP* | P35A    | 320                             | 400                      | 150    | 800    | 2.2   | 4                         | 15                             | 50     |

Notes:  
 - Absolute maximum ratings measured at  $T_a = 25^\circ C$  (unless otherwise noted).  
 - Devices are bi-directional (unless otherwise noted).  
 - Parts with "\*" are under development

## Surge Ratings

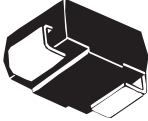
| Series | I <sub>PP</sub>      |                   |                     |                     |                     |                    |                     |                      |                     | I <sub>TSM</sub><br>50/60 Hz | di/dt |
|--------|----------------------|-------------------|---------------------|---------------------|---------------------|--------------------|---------------------|----------------------|---------------------|------------------------------|-------|
|        | 0.2x310 <sup>1</sup> | 2x10 <sup>1</sup> | 8x20 <sup>1</sup>   | 10x160 <sup>1</sup> | 10x560 <sup>1</sup> | 5x320 <sup>1</sup> | 10x360 <sup>1</sup> | 10x1000 <sup>1</sup> | 5x310 <sup>1</sup>  |                              |       |
|        | 0.5x700 <sup>2</sup> | 2x10 <sup>2</sup> | 1.2x50 <sup>2</sup> | 10x160 <sup>2</sup> | 10x560 <sup>2</sup> | 9x720 <sup>2</sup> | 10x360 <sup>2</sup> | 10x1000 <sup>2</sup> | 10x700 <sup>2</sup> |                              |       |
|        | A min                | A min             | A min               | A min               | A min               | A min              | A min               | A min                | A min               |                              |       |
| A      | 20                   | 150               | 150                 | 90                  | 50                  | 75                 | 75                  | 50                   | 75                  | 20                           | 500   |

Notes:

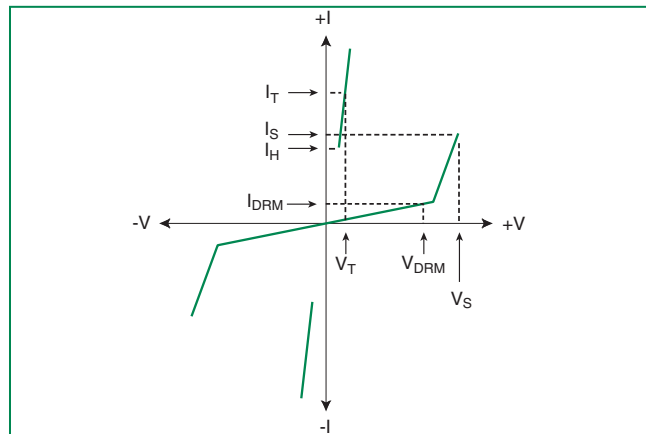
1 Current waveform in μs  
2 Voltage waveform in μs

- Peak pulse current rating ( $I_{PP}$ ) is repetitive and guaranteed for the life of the product.  
-  $I_{PP}$  ratings applicable over temperature range of -40°C to +85°C  
- The device must initially be in thermal equilibrium with -40°C ≤  $T_J$  ≤ +150°C

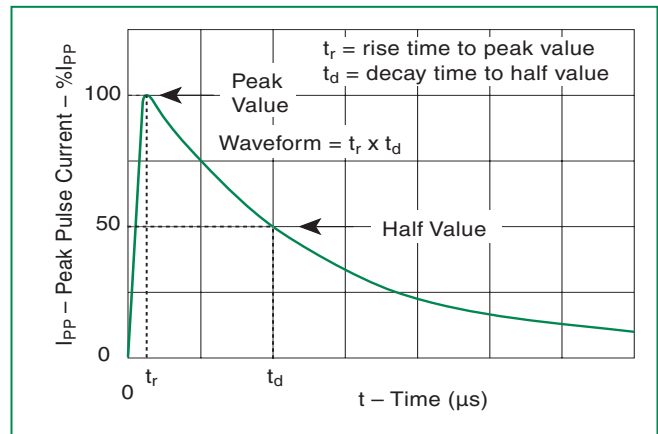
## Thermal Considerations

| Package                                                                                       | Symbol          | Parameter                               | Value       | Unit |
|-----------------------------------------------------------------------------------------------|-----------------|-----------------------------------------|-------------|------|
| DO-214AC<br> | $T_J$           | 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 | 90          | °C/W |

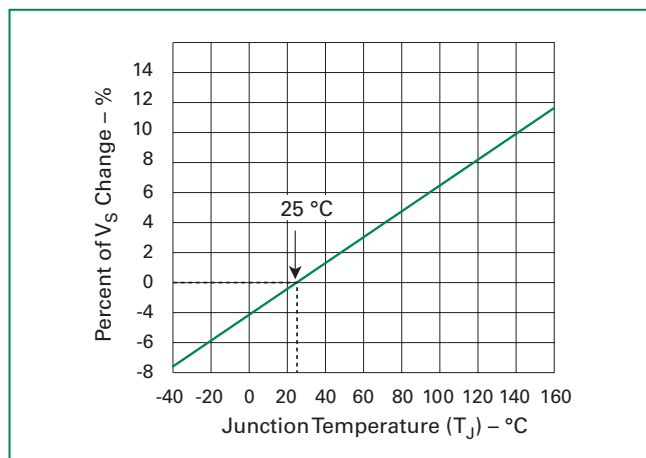
## V-I Characteristics



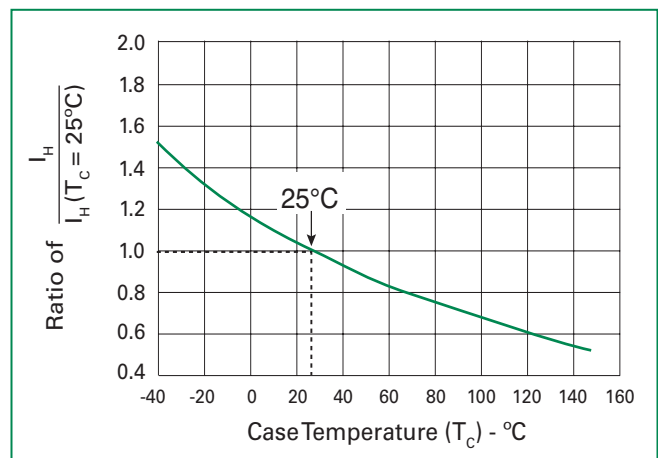
## $t_r \times t_d$ Pulse Waveform



## Normalized $V_S$ Change vs. Junction Temperature

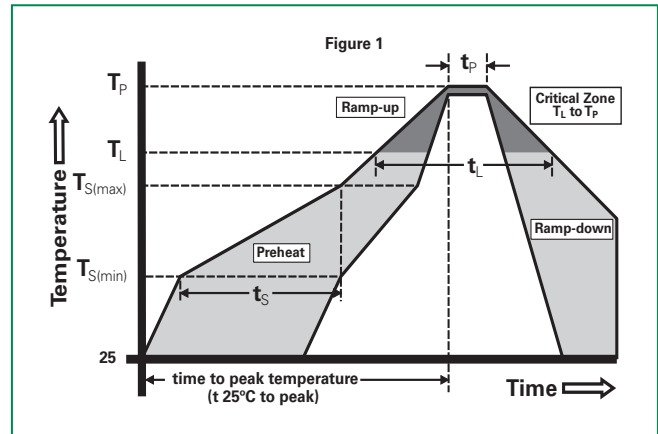


## Normalized DC Holding Current vs. Case Temperature



## Soldering Parameters

|                                                        |                                   |                               |
|--------------------------------------------------------|-----------------------------------|-------------------------------|
| Reflow Condition                                       |                                   | Pb-Free assembly (see Fig. 1) |
| Pre Heat                                               | -Temperature Min ( $T_{s(min)}$ ) | +150°C                        |
|                                                        | -Temperature Max ( $T_{s(max)}$ ) | +200°C                        |
|                                                        | -Time (Min to Max) ( $t_s$ )      | 60-180 secs.                  |
| Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak) |                                   | 3°C/sec. Max.                 |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                   |                                   | 3°C/sec. Max.                 |
| Reflow                                                 | -Temperature ( $T_L$ ) (Liquidus) | +217°C                        |
|                                                        | -Temperature ( $t_L$ )            | 60-150 secs.                  |
| Peak Temp ( $T_p$ )                                    |                                   | +260(+0/-5)°C                 |
| Time within 5°C of actual PeakTemp ( $t_p$ )           |                                   | 30 secs. Max.                 |
| Ramp-down Rate                                         |                                   | 6°C/sec. Max.                 |
| Time 25°C to Peak Temp ( $T_p$ )                       |                                   | 8 min. Max.                   |
| Do not exceed                                          |                                   | +260°C                        |



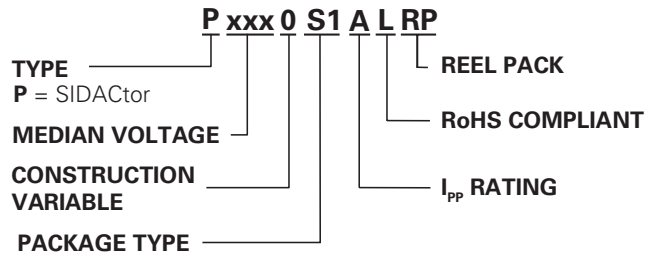
## Physical Specifications

|                        |                                                               |
|------------------------|---------------------------------------------------------------|
| <b>Lead Material</b>   | Copper Alloy                                                  |
| <b>Terminal Finish</b> | 100% Matte-Tin Plated                                         |
| <b>Body Material</b>   | UL recognized epoxy meeting flammability classification 94V-0 |

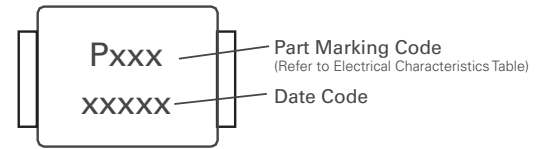
## Environmental Specifications

|                                         |                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>High Temp Voltage Blocking</b>       | 80% Rated $V_{DRM}$ ( $V_{AC}$ Peak) +125°C or +150°C, 504 or 1008 hrs. MIL-STD-750 (Method 1040) JEDEC, JESD22-A-101 |
| <b>Temp Cycling</b>                     | -65°C to +150°C, 15 min. dwell, 10 up to 100 cycles. MIL-STD-750 (Method 1051) EIA/JEDEC, JESD22-A104                 |
| <b>Biased Temp &amp; Humidity</b>       | 52 $V_{DC}$ (+85°C) 85%RH, 504 up to 1008 hrs. EIA/JEDEC, JESD22-A-101                                                |
| <b>High Temp Storage</b>                | +150°C 1008 hrs. MIL-STD-750 (Method 1031) JEDEC, JESD22-A-101                                                        |
| <b>Low Temp Storage</b>                 | -65°C, 1008 hrs.                                                                                                      |
| <b>Thermal Shock</b>                    | 0°C to +100°C, 5 min. dwell, 10 sec. transfer, 10 cycles. MIL-STD-750 (Method 1056) JEDEC, JESD22-A-106               |
| <b>Autoclave (Pressure Cooker Test)</b> | +121°C, 100%RH, 2atm, 24 up to 168 hrs. EIA/JEDEC, JESD22-A-102                                                       |
| <b>Resistance to Solder Heat</b>        | +260°C, 30 secs. MIL-STD-750 (Method 2031)                                                                            |
| <b>Moisture Sensitivity Level</b>       | 85%RH, +85°C, 168 hrs., 3 reflow cycles (+260°C Peak). JEDEC-J-STD-020, Level 1                                       |

## Part Numbering

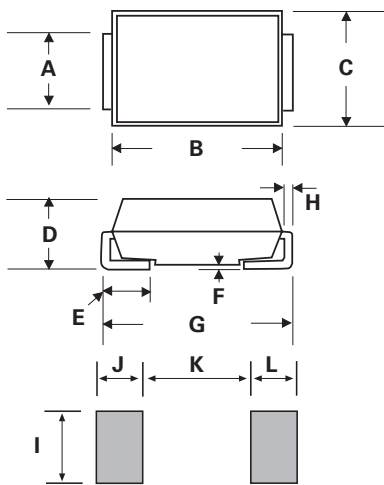


## Part Marking



## Dimensions

DO-214AC (SMA)

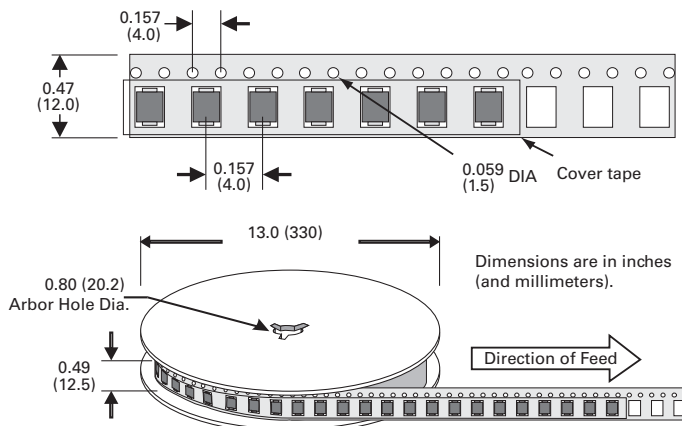


| Dimensions | Inches |       | Millimeters |       |
|------------|--------|-------|-------------|-------|
|            | Min    | Max   | Min         | Max   |
| A          | 0.049  | 0.065 | 1.250       | 1.650 |
| B          | 0.157  | 0.177 | 3.990       | 4.500 |
| C          | 0.100  | 0.110 | 2.540       | 2.790 |
| D          | 0.078  | 0.090 | 1.980       | 2.290 |
| E          | 0.030  | 0.060 | 0.780       | 1.520 |
| F          | -      | 0.008 | -           | 0.203 |
| G          | 0.194  | 0.208 | 4.930       | 5.280 |
| H          | 0.006  | 0.012 | 0.152       | 0.305 |
| I          | 0.070  | -     | 1.800       | -     |
| J          | 0.082  | -     | 2.100       | -     |
| K          | -      | 0.090 | -           | 2.300 |
| L          | 0.082  | -     | 2.100       | -     |

## Packing Options

| Package Type | Description                                   | Packing Options Quantity | Added Suffix | Industry Standard |
|--------------|-----------------------------------------------|--------------------------|--------------|-------------------|
| S1           | DO-214AC<br>Tape & Reel Pack<br>12mm/13" tape | 5000                     | RP           | EIA-481           |

## Tape and Reel Specification — DO-214AC



## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9