



## P0720SC Thyristor Surge Suppressors SMD 500A 65V 100pF DO-214AA SMB

Our Product Introduction

for more products please visit us on [socaydiode.com](http://socaydiode.com)

### Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: REACH,RoHS,ISO
- Model Number: P0720SC
- Minimum Order Quantity: 2500PCS
- Price: Negotiable
- Packaging Details: AMMO packing bulk
- Delivery Time: 5-8 work days



### Product Specification

- Component: Thyristor Surge Suppressors
- Footprint: DO-214AA/SMB
- VDRM (Min.): 6V
- IDRM: 5μA
- Vs @100V/μS (Max.): 88V
- Is (Max.): 800mA
- Vt @It=2.2A (Max.): 4V
- It (Max.): 2.2A
- Ih (Min.): 50mA
- C0 @1MHz,2V Bias (Typ.): 100pF
- Highlight: **P0720SC Thyristor Surge Suppressors ,  
Thyristor Surge Suppressors 500A ,  
Thyristor SMD 65V**



### More Images



## Product Description

### SOCAY P0720SC Thyristor Surge Protection Devices 500A 65V SMD Thyristor

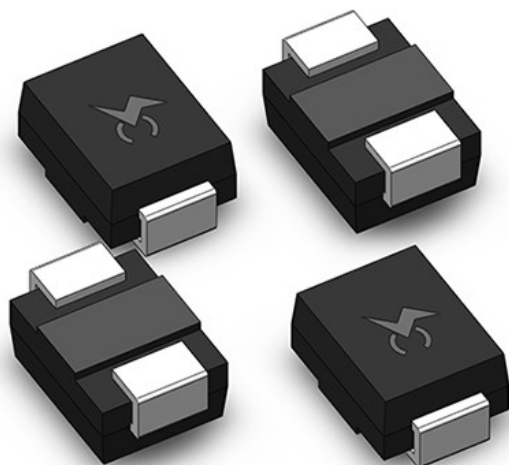
**DATASHEET:** [PXXX0SC\\_v2103.1.pdf](#)

| Part Number | Marking | $V_{DRM}$<br>@ $I_{DRM}=5$<br>$\mu A$ | $V_S$<br>@100V/<br>$\mu S$ | $V_T$<br>@ $I_T=2.2$<br>A | $I_S$  | $I_T$ | $I_H$  | $C_O$<br>@1MHz, 2V<br>bias |
|-------------|---------|---------------------------------------|----------------------------|---------------------------|--------|-------|--------|----------------------------|
|             |         | V min                                 | V max                      | V max                     | mA max | A max | mA min | pF typ                     |
| P0080SC     | P008C   | 6                                     | 25                         | 4                         | 800    | 2.2   | 50     | 100                        |
| P0300SC     | P03C    | 25                                    | 40                         | 4                         | 800    | 2.2   | 50     | 100                        |
| P0640SC     | P06C    | 58                                    | 77                         | 4                         | 800    | 2.2   | 150    | 100                        |
| P0720SC     | P07C    | 65                                    | 88                         | 4                         | 800    | 2.2   | 150    | 100                        |
| P0900SC     | P09C    | 75                                    | 98                         | 4                         | 800    | 2.2   | 150    | 90                         |
| P1100SC     | P11C    | 90                                    | 130                        | 4                         | 800    | 2.2   | 150    | 90                         |
| P1300SC     | P13C    | 120                                   | 160                        | 4                         | 800    | 2.2   | 150    | 90                         |
| P1500SC     | P15C    | 140                                   | 180                        | 4                         | 800    | 2.2   | 150    | 85                         |
| P1800SC     | P18C    | 170                                   | 220                        | 4                         | 800    | 2.2   | 150    | 85                         |
| P2300SC     | P23C    | 190                                   | 260                        | 4                         | 800    | 2.2   | 150    | 80                         |
| P2600SC     | P26C    | 220                                   | 300                        | 4                         | 800    | 2.2   | 150    | 80                         |
| P3100SC     | P31C    | 275                                   | 350                        | 4                         | 800    | 2.2   | 150    | 65                         |
| P3500SC     | P35C    | 320                                   | 400                        | 4                         | 800    | 2.2   | 150    | 60                         |
| P4200SC     | P42C    | 400                                   | 520                        | 4                         | 800    | 2.2   | 150    | 55                         |

**Notes:**

$V_S$  is measured at 100KV/s.

Off-state capacitance is measured in  $V_{DC}=2V$ ,  $V_{RMS}=1V$ ,  $f=1MHz$ .



**Description:** Tss components to protection important equipment PCB Circuit Board

**Selection Method.**

- 1, To know the customer's product, operating voltage, application port, protection level.
- 2, Break-state voltage > DC working voltage on the circuit.
- 3, Select the capacitance value and flow rate of the device according to the application port and protection level.

**Features:**

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

**Applicable Global Standards:**

Communication lightning protection, 485, 232 protection solutions, ADSL, Security products, Telephones, Video circuits, Audio circuits.

| Series | 2/10 $\mu$ S <sup>1</sup> | 8/20 $\mu$ S <sup>1</sup>   | 10/160 $\mu$ S <sup>1</sup> | 10/560 $\mu$ S <sup>1</sup> | 10/1000 $\mu$ S <sup>1</sup> | 5/310 $\mu$ S <sup>1</sup>  | I <sub>TSM</sub><br>50/60<br>Hz | di/dt                |
|--------|---------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|-----------------------------|---------------------------------|----------------------|
|        | 2/10 $\mu$ S <sup>2</sup> | 1.2/50 $\mu$ S <sup>2</sup> | 10/160 $\mu$ S <sup>2</sup> | 10/560 $\mu$ S <sup>2</sup> | 10/1000 $\mu$ S <sup>2</sup> | 10/700 $\mu$ S <sup>2</sup> |                                 |                      |
|        | A min                     | A min                       | A min                       | A min                       | A min                        | A min                       | A min                           | Amps/ $\mu$ s<br>max |
| C      | 500                       | 400                         | 200                         | 150                         | 100                          | 150                         | 50                              | 500                  |

|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:<br>Current waveform in $\mu\text{s}$<br>Voltage waveform in $\mu\text{s}$ | <ul style="list-style-type: none"> <li>- Peak pulse current rating (<math>I_{PP}</math>) is repetitive and guaranteed for the life of the product.</li> <li>- <math>I_{PP}</math> ratings applicable over temperature range of <math>-40^{\circ}\text{C}</math> to <math>+85^{\circ}\text{C}</math></li> <li>- The device must initially be in thermal equilibrium with <math>-40^{\circ}\text{C} &lt; T_J &lt; +150^{\circ}\text{C}</math></li> </ul> |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Part Number | Component Package | Quantity | Packaging Option           | Packaging Specification |
|-------------|-------------------|----------|----------------------------|-------------------------|
| Pxxx0SC     | DO-214AA          | 2500     | Tape & Reel - 12mm/13"tape | EIA -481 - D            |

#### Thermal Considerations

| Package                                                                                    | Symbol          | Parameter                               | Value         | Unit                 |
|--------------------------------------------------------------------------------------------|-----------------|-----------------------------------------|---------------|----------------------|
|  DO-214AA | $T_J$           | Operating Junction Temperature Range    | - 40 to + 150 | $^{\circ}\text{C}$   |
|                                                                                            | $T_S$           | Storage Temperature Range               | - 40 to +150  | $^{\circ}\text{C}$   |
|                                                                                            | $R_{\theta JA}$ | Thermal Resistance: Junction to Ambient | 90            | $^{\circ}\text{C/W}$ |

Figure 1 - V-I Characteristics

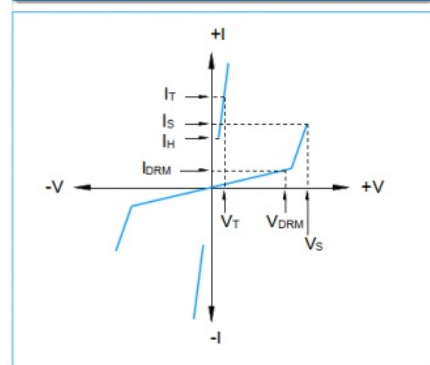


Figure 2 -  $t_r \times t_d$  Pulse Waveform

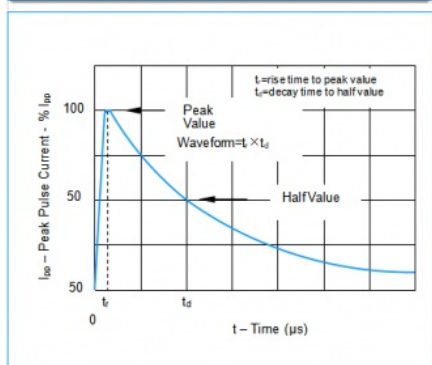


Figure 3 - Normalized  $V_S$  Change Versus Junction Temperature

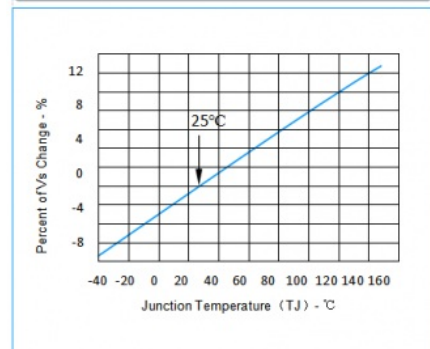
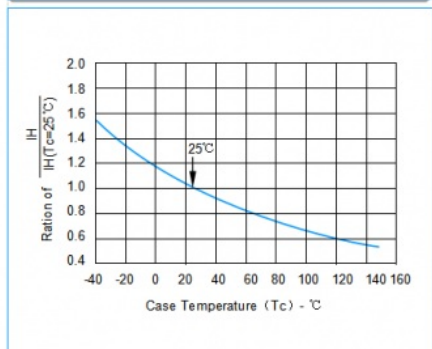
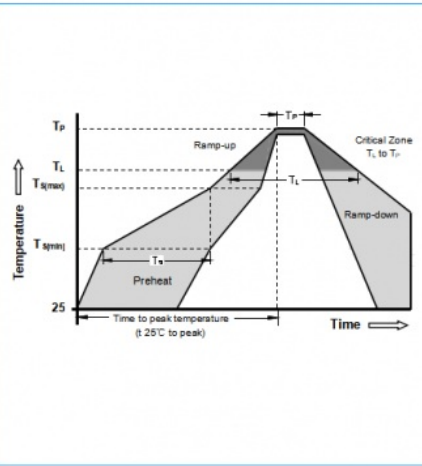


Figure 4 - Normalized DC Holding Current Versus Case Temperature



## Soldering Parameters

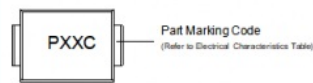


| Reflow Condition                                     |                                    | Lead-free assembly |
|------------------------------------------------------|------------------------------------|--------------------|
| Pre Heat                                             | -Temperature Min ( $T_{s(min)}$ )  | +150°C             |
|                                                      | -Temperature Max ( $T_{s(max)}$ )  | +200°C             |
|                                                      | -Time (min to max) ( $T_s$ )       | 60 -180 Seconds    |
| Average ramp up rate ( Liquidus Temp $T_L$ ) to peak |                                    | 3°C/Second Max     |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                 |                                    | 3°C/Second Max     |
| Reflow                                               | - Temperature ( $T_L$ ) (Liquidus) | +217°C             |
|                                                      | - Time (min to max) ( $T_L$ )      | 60 -150 Seconds    |
| Peak Temperature ( $T_p$ )                           |                                    | 260 +0/-5°C        |
| Time within 5°C of actual peak Temperature ( $t_p$ ) |                                    | 30 Seconds Max     |
| Ramp-down Rate                                       |                                    | 6°C/Second Max     |
| Time 25°C to peak Temperature ( $T_p$ )              |                                    | 8 minutes Max      |
| Do not exceed                                        |                                    | +260°C             |

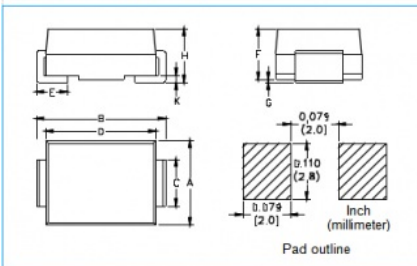
## Part Numbering

|                                    |                                                                                                                                 |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>PXXX 0 S C</b>                  |                                                                                                                                 |
| Type                               | _____                                                                                                                           |
| Median Voltage                     | _____                                                                                                                           |
| Construction Variable, 0: One chip | _____                                                                                                                           |
| 2: Two chip                        | _____                                                                                                                           |
| E: ESD Protection                  | _____                                                                                                                           |
| Ipp Rating                         | A: @10/700 $\mu$ s 2KV (50A)<br>B: @10/700 $\mu$ s 4KV (100A)<br>C: @10/700 $\mu$ s 6KV (150A)<br>D: @10/700 $\mu$ s 8KV (200A) |
| Package Type                       | S: DO-214AA(SMB)<br>T: DO-214AC(SMA)<br>E: TO-92<br>L: DO-15, DO-27, DO-41<br>Y: SMB-H                                          |

## Part Marking



## Dimensions DO-214AA



| Dimensions | Inches |       | Millimeters |      |
|------------|--------|-------|-------------|------|
|            | Min    | Max   | Min         | Max  |
| A          | 0.130  | 0.156 | 3.30        | 3.95 |
| B          | 0.201  | 0.220 | 5.10        | 5.60 |
| C          | 0.077  | 0.087 | 1.95        | 2.20 |
| D          | 0.159  | 0.181 | 4.05        | 4.60 |
| E          | 0.030  | 0.063 | 0.76        | 1.60 |
| F          | 0.076  | 0.096 | 1.90        | 2.45 |
| G          | 0.002  | 0.008 | 0.05        | 0.20 |
| H          | 0.077  | 0.104 | 1.95        | 2.65 |
| K          | 0.006  | 0.016 | 0.15        | 0.41 |

 **SOCAY® Shenzhen Socay Electronics Co., Ltd.**

 +8618126201429

 sylvia@socay.com

 socaydiode.com

4/F, Block C, HeHengXing Science & Technology Park, 19 MinQing Road, LongHua District, Shenzhen City, Guangdong Province, China