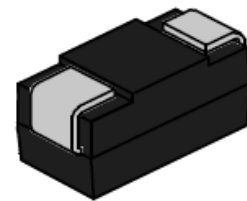




### DESCRIPTION:

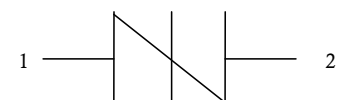
PxxxxSC series thyristors are a type of semiconduct component. They are designed to protect baseband equipment from damaging overvoltage transients. Typical application: modems, telephones, line cards, answering machines, FAX machines, T1/E1, xDSL and more.



SMB

### FEATURES:

- ✧ Low profile package.
- ✧ Low on-state voltage.
- ✧ Excellent capability of absorbing transient surge.
- ✧ Quick response to surge voltage (ns Level).
- ✧ Eliminates overvoltage caused by fast rising transients
- ✧ Moisture sensitivity level: Level 1
- ✧ Non degenerative.



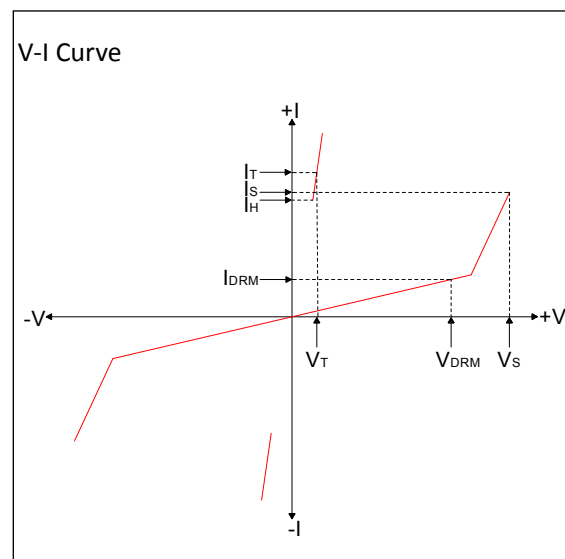
Symbol

### ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ , RH=45%-75%, unless otherwise noted)

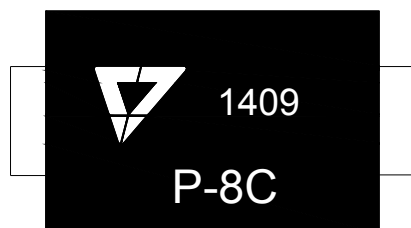
| Parameter                            | Symbol    | Value       | Unit               |
|--------------------------------------|-----------|-------------|--------------------|
| Storage temperature range            | $T_{STG}$ | -60 to +150 | $^{\circ}\text{C}$ |
| Operating junction temperature range | $T_J$     | -40 to +125 | $^{\circ}\text{C}$ |
| Repetitive peak pulse current        | $I_{PP}$  | 100         | A                  |

### ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ )

| Symbol    | Parameter              |
|-----------|------------------------|
| $V_{DRM}$ | Peak off-state voltage |
| $I_{DRM}$ | Off-state current      |
| $V_S$     | Switching voltage      |
| $I_S$     | Switching current      |
| $V_T$     | On-state voltage       |
| $I_T$     | On-state current       |
| $I_H$     | Holding current        |
| $C_O$     | Off-state capacitance  |



## MARKING



P-8C : Device Marking Code  
1409: In ninth week, 2014

ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , continued)

| Part Number | $I_{\text{DRM}}@V_{\text{DRM}}$ |     | $V_S^{①}@I_S$ |     | $V_T@I_T$ |     | $I_H$ | $C_O^{②}$ | Marking |
|-------------|---------------------------------|-----|---------------|-----|-----------|-----|-------|-----------|---------|
|             | $\mu\text{A}$                   | V   | V             | mA  | V         | A   | mA    | pF        |         |
|             | max                             |     | max           | max | max       | max | min   | max       |         |
| P0080SC     | 1                               | 6   | 15            | 800 | 4         | 2.2 | 30    | 130       | P-8C    |
| P0220SC     | 1                               | 18  | 30            | 800 | 4         | 2.2 | 30    | 100       | P22C    |
| P0300SC     | 1                               | 25  | 40            | 800 | 4         | 2.2 | 30    | 100       | P03C    |
| P0640SC     | 1                               | 58  | 77            | 800 | 4         | 2.2 | 120   | 200       | P06C    |
| P0720SC     | 1                               | 65  | 87            | 800 | 4         | 2.2 | 120   | 150       | P07C    |
| P0900SC     | 1                               | 75  | 98            | 800 | 4         | 2.2 | 120   | 140       | P09C    |
| P1100SC     | 1                               | 90  | 130           | 800 | 4         | 2.2 | 120   | 110       | P11C    |
| P1300SC     | 1                               | 120 | 160           | 800 | 4         | 2.2 | 120   | 100       | P13C    |
| P1500SC     | 1                               | 140 | 180           | 800 | 4         | 2.2 | 120   | 90        | P15C    |
| P1800SC     | 1                               | 170 | 220           | 800 | 4         | 2.2 | 120   | 90        | P18C    |
| P2300SC     | 1                               | 190 | 260           | 800 | 4         | 2.2 | 120   | 80        | P23C    |
| P2600SC     | 1                               | 220 | 300           | 800 | 4         | 2.2 | 120   | 80        | P26C    |
| P3100SC     | 1                               | 275 | 350           | 800 | 4         | 2.2 | 120   | 70        | P31C    |
| P3500SC     | 1                               | 320 | 400           | 800 | 4         | 2.2 | 120   | 65        | P35C    |
| P3800SC     | 1                               | 340 | 450           | 800 | 4         | 2.2 | 120   | 65        | P38C    |

①  $V_S$  is measured at 100KV/s

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

## SURGE RATINGS

| Series | $I_{PP}(A)$ min    |                    |                      |                       |
|--------|--------------------|--------------------|----------------------|-----------------------|
|        | $2 \times 10\mu s$ | $8 \times 20\mu s$ | $10 \times 360\mu s$ | $10 \times 1000\mu s$ |
| C      | 500                | 400                | 175                  | 100                   |

## ORDERING INFORMATION

|                            |                |                                     |              |                                     |
|----------------------------|----------------|-------------------------------------|--------------|-------------------------------------|
| <b>P</b>                   | <b>008</b>     | <b>0</b>                            | <b>S</b>     | <b>C</b>                            |
| Series code<br>P: SIDACtor | Median voltage | 0: Bi-direction<br>1: Uni-direction | Package type | Surge ratings: 6KV(10/700 $\mu s$ ) |

## SOLDERING PARAMETERS

|                                                        |                                   |                                 |
|--------------------------------------------------------|-----------------------------------|---------------------------------|
| Reflow Condition                                       |                                   | Pb-Free assembly<br>(see FIG.2) |
| Pre Heat                                               | -Temperature Min ( $T_{s(min)}$ ) | +150°C                          |
|                                                        | -Temperature Max( $T_{s(max)}$ )  | +200°C                          |
|                                                        | -Time (Min to Max) (ts)           | 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 Peak Temp ( $t_p$ )          |                                   | 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                          |

FIG.1:  $t_r \times t_d$  pulse waveform

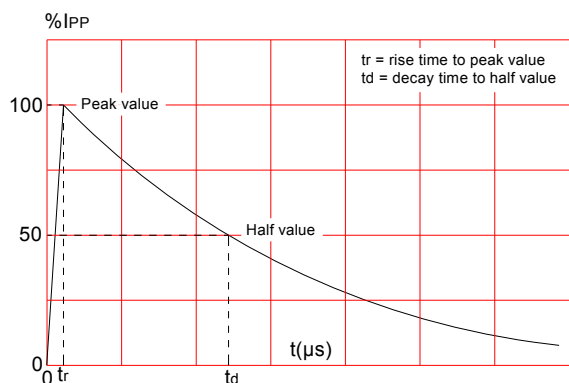


FIG.2: Reflow condition

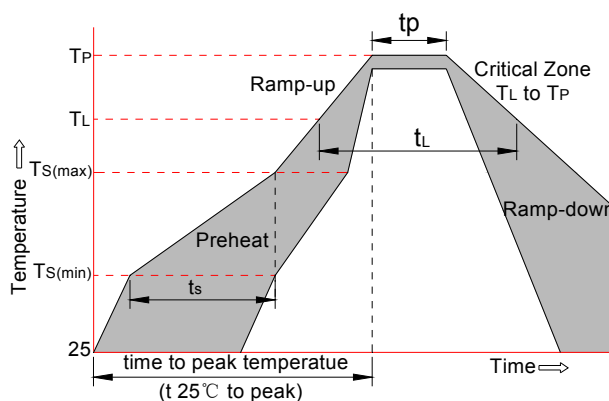


FIG.3: Normalized  $V_s$  change vs. junction temperature

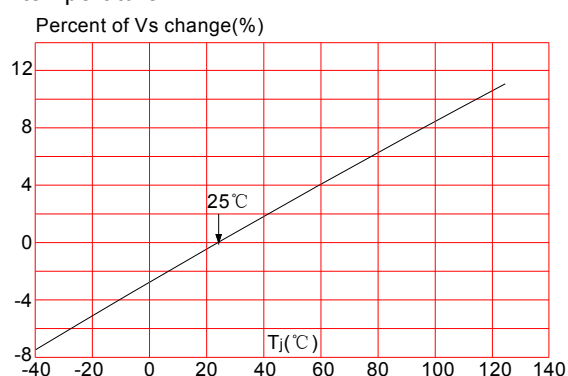
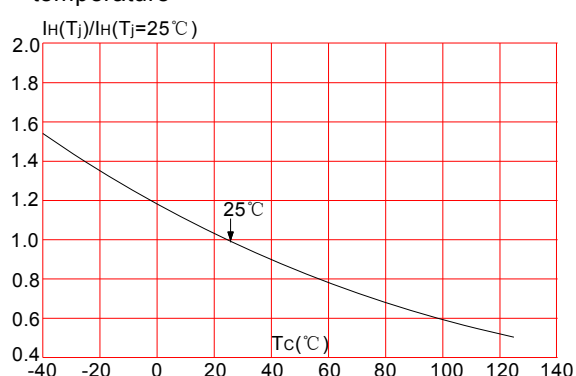
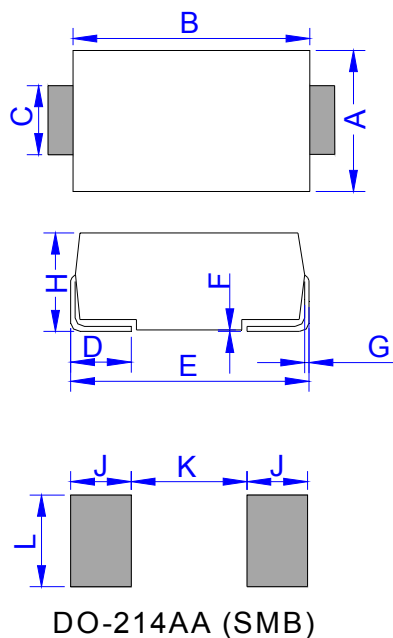


FIG.4: Normalized DC holding current vs. case temperature

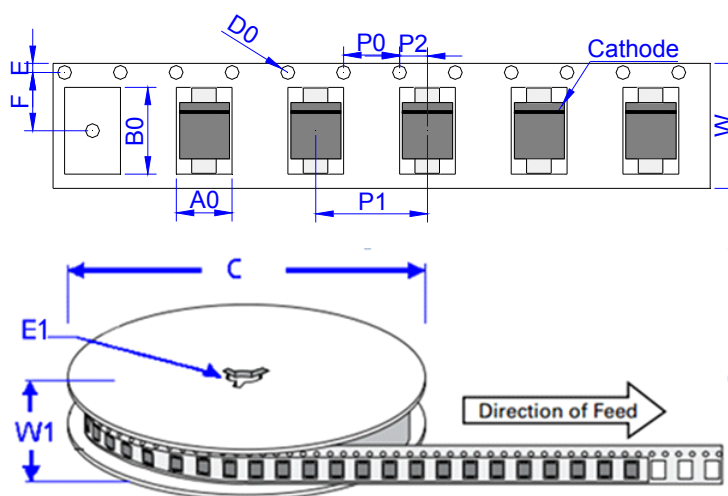


## PACKAGE MECHANICAL DATA



| Ref. | Dimensions  |       |        |       |
|------|-------------|-------|--------|-------|
|      | Millimeters |       | Inches |       |
|      | Min.        | Max.  | Min.   | Max.  |
| A    | 3.30        | 3.94  | 0.130  | 0.155 |
| B    | 4.30        | 4.80  | 0.169  | 0.189 |
| C    | 1.90        | 2.20  | 0.075  | 0.087 |
| D    | 0.95        | 1.52  | 0.037  | 0.060 |
| E    | 5.20        | 5.60  | 0.205  | 0.220 |
| F    | 0.051       | 0.203 | 0.002  | 0.008 |
| G    | 0.15        | 0.31  | 0.006  | 0.012 |
| H    | 2.10        | 2.40  | 0.083  | 0.094 |
| J    | 2.20        |       | 0.087  |       |
| K    |             | 2.60  |        | 0.102 |
| L    | 2.30        |       | 0.091  |       |

## TAPE AND REEL SPECIFICATION-SMB



| Ref. | Dimensions  |                |
|------|-------------|----------------|
|      | Millimeters | Inches         |
| A0   | 3.76 ± 0.3  | 0.148 ± 0.012  |
| B0   | 5.69 ± 0.3  | 0.224 ± 0.012  |
| C    | 330.0       | 13.0           |
| D0   | 1.55 ± 0.1  | 0.061 ± 0.004  |
| E    | 1.75 ± 0.2  | 0.069 ± 0.008  |
| E1   | 13.3 ± 0.3  | 0.524 ± 0.012  |
| F    | 5.5 ± 0.2   | 0.217 ± 0.008  |
| P0   | 4.00 ± 0.2  | 0.157 ± 0.008  |
| P1   | 8.00 ± 0.2  | 0.3145 ± 0.008 |
| P2   | 2.00 ± 0.2  | 0.079 ± 0.008  |
| W    | 12.0 ± 0.2  | 0.472 ± 0.008  |
| W1   | 15.7 ± 2.0  | 0.618 ± 0.079  |

| OUTLINE | UNIT WEIGHT<br>(g/PCS) typ. | REEL<br>(PCS) | PER CARTON<br>(PCS) | REEL<br>DIAMETERS<br>(mm) |
|---------|-----------------------------|---------------|---------------------|---------------------------|
| TAPING  | 0.098                       | 3,000         | 48,000              | 330                       |

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