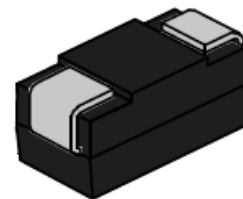




### DESCRIPTION:

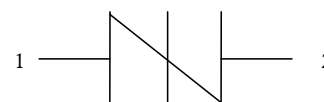
PxxxxSC series thyristors are a type of semiconduct component. They are designed to protect baseband equipment from damaging overvoltage transients. Typical application: modems, telephones, line cards, answering machines, FAX machines, T1/E1, xDSL and more.



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.



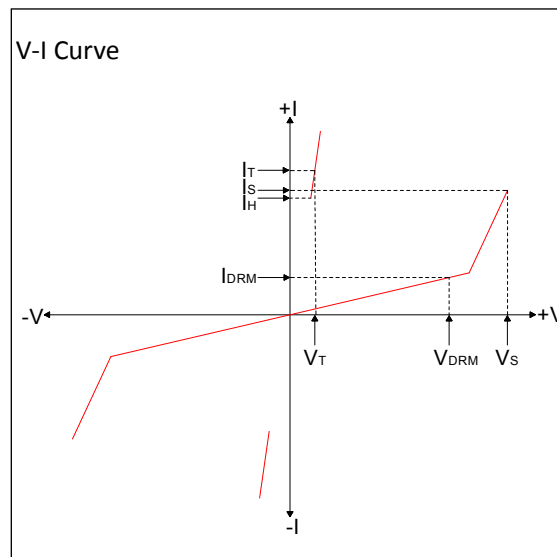
Symbol

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, RH=45%-75%, unless otherwise noted)

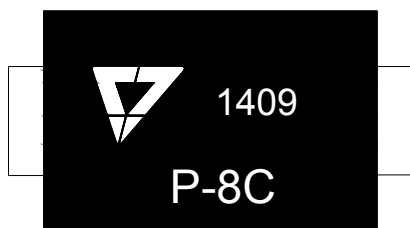
| Parameter                            | Symbol           | Value       | Unit |
|--------------------------------------|------------------|-------------|------|
| Storage temperature range            | T <sub>STG</sub> | -60 to +150 | °C   |
| Operating junction temperature range | T <sub>J</sub>   | -40 to +125 | °C   |
| Repetitive peak pulse current        | I <sub>PP</sub>  | 100         | A    |

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

| Symbol           | Parameter              |
|------------------|------------------------|
| V <sub>DRM</sub> | Peak off-state voltage |
| I <sub>DRM</sub> | Off-state current      |
| V <sub>S</sub>   | Switching voltage      |
| I <sub>S</sub>   | Switching current      |
| V <sub>T</sub>   | On-state voltage       |
| I <sub>T</sub>   | On-state current       |
| I <sub>H</sub>   | Holding current        |
| C <sub>O</sub>   | Off-state capacitance  |



## MARKING



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

ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, continued)

| Part Number | I <sub>DRM</sub> @V <sub>DRM</sub> |     | V <sub>S</sub> <sup>①</sup> @I <sub>S</sub> |     | V <sub>T</sub> @ I <sub>T</sub> |     | I <sub>H</sub> | C <sub>O</sub> <sup>②</sup> | Marking |
|-------------|------------------------------------|-----|---|-----|---------------------------------|-----|----------------|-----------------------------|---------|
|             | μA                                 | 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<sub>S</sub> is measured at 100KV/s

② Off-state capacitance is measured in V<sub>DC</sub>=2V, V<sub>RMS</sub>=1V, f=1MHz

## SURGE RATINGS

| Series | $I_{PP}(A)$ min |        |          |           |
|--------|-----------------|--------|----------|-----------|
|        | 2×10μs          | 8×20μs | 10×360μs | 10×1000μs |
| 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(10/700μs) |

## 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: tr × td pulse waveform

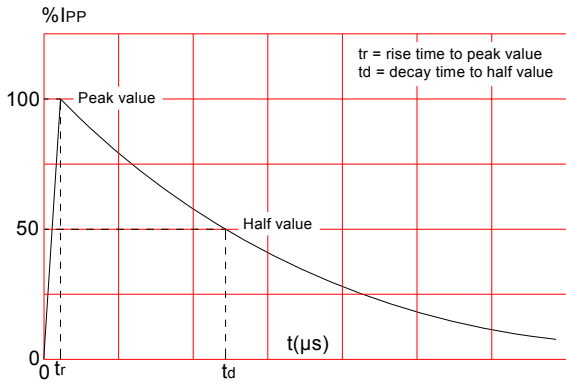


FIG.2: Reflow condition

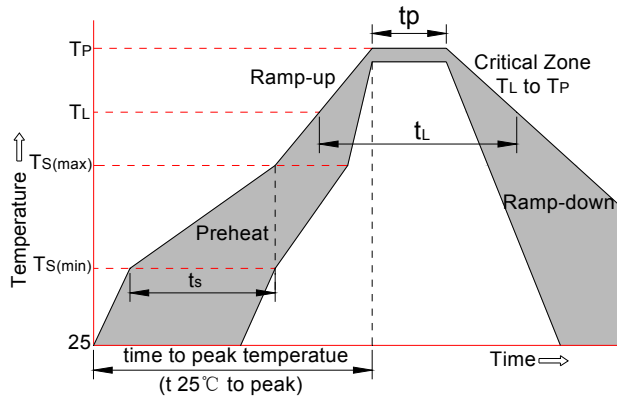


FIG.3: Normalized Vs change vs. junction temperature

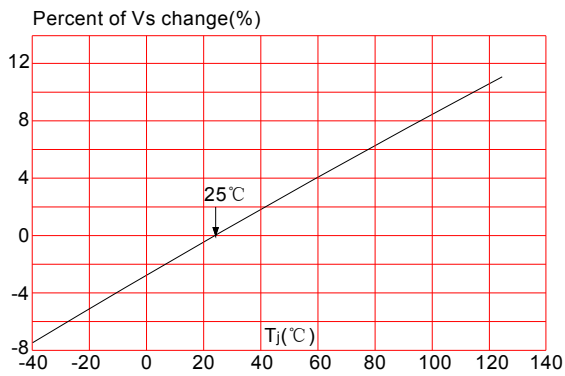
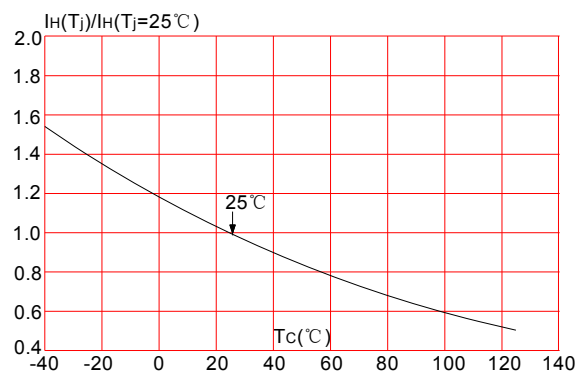
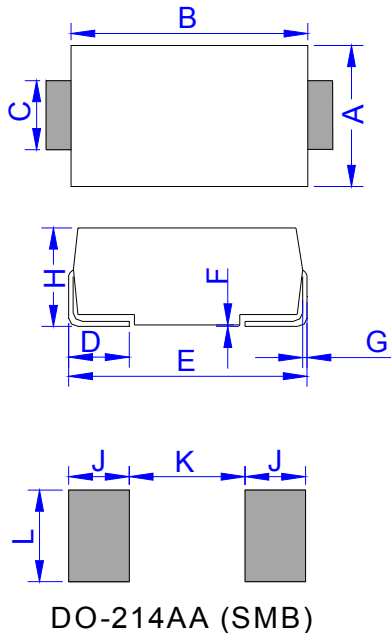


FIG.4: Normalized DC holding current vs. case temperature

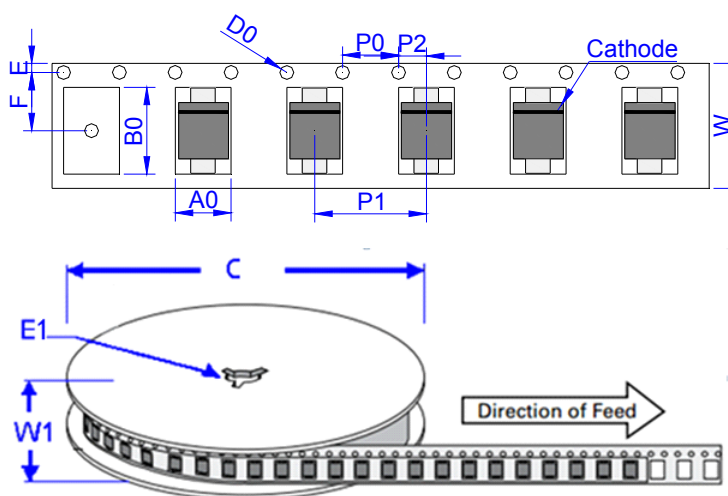


PACKAGE MECHANICAL DATA



| 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 (g/PCS) typ. | REEL (PCS) | PER CARTON (PCS) | REEL DIAMETERS (mm) |
|---------|--------------------------|------------|------------------|---------------------|
| TAPING  | 0.098                    | 3,000      | 48,000           | 330                 |

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