

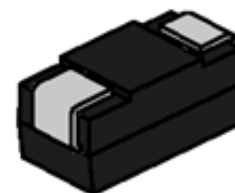


Pxxx1SAP Series TSS

Rev.1.0

DESCRIPTION:

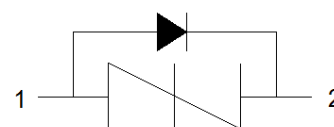
Pxxx1SAP series thyristors are a type of semiconduct component. They are designed for transient surge protection.



SMA

FEATURES:

- ✧ 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.
- ✧ Fails short circuit when surged in excess of ratings.
- ✧ Non degenerative.



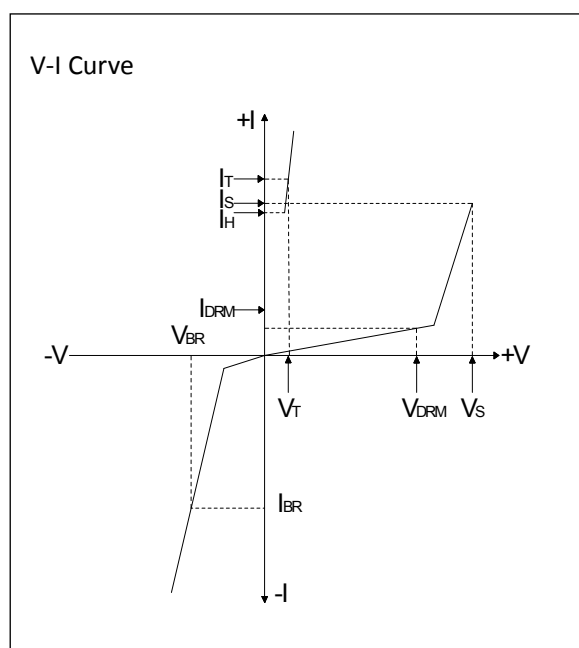
Symbol

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

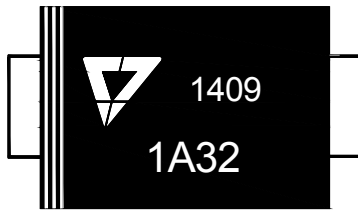
| Parameter | Symbol | Value | Unit |
|--|-----------------|-------------|-----------------------------|
| Storage temperature range | T_{STG} | -60 to +150 | $^{\circ}\text{C}$ |
| Operating junction temperature range | T_J | -40 to +150 | $^{\circ}\text{C}$ |
| Repetitive peak pulse current | I_{PP} | 50 | A |
| Typical thermal resistance junction to ambient | $R_{\theta JA}$ | 120 | $^{\circ}\text{C}/\text{W}$ |

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 |
| V_{BR} | Reverse breakdown voltage |
| I_{BR} | Test current |



MARKING



1A32 : Device Marking Code
1409: In ninth week, 2014

ELECTRICAL CHARACTERISTICS(T_A=25°C, continued)

| Part Number | I _{DRM} @V _{DRM} PIN2-1 | | I _{DRM2} ^① @V _{DRM} PIN2-1 | | V _S ^② @I _S PIN2-1 | | V _T @ I _T PIN2-1 | | I _H PIN2-1 | C _O ^③ PIN2-1 | V _{BR} @I _{BR} PIN1-2 | | Marking |
|-------------|--|-----|---|-----|---|-----|---|-----|--------------------------|---------------------------------------|--|-----|---------|
| | μA | V | μA | V | V | mA | V | A | mA | pF | V | mA | |
| | max | min | max | min | max | max | max | max | max | max | max | max | |
| P0321SAP | 1 | 28 | 50 | 28 | 40 | 200 | 1.8 | 2.2 | 30 | 80 | 18 | 1 | 1A32 |
| P0401SAP | 1 | 33 | 50 | 33 | 48 | 200 | 1.8 | 2.2 | 30 | 80 | 18 | 1 | 1A40 |
| P0501SAP | 1 | 53 | 50 | 53 | 60 | 200 | 1.8 | 2.2 | 30 | 80 | 18 | 1 | 1A50 |
| P0641SAP | 1 | 60 | 50 | 60 | 80 | 200 | 1.8 | 2.2 | 30 | 80 | 18 | 1 | 1A64 |

①I_{DRM2} is measured at T_A=150°C

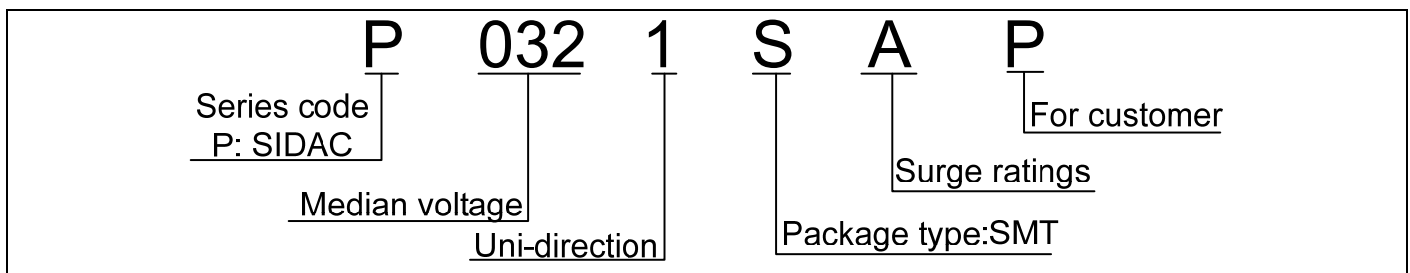
②V_S is measured at 100KV/s

③Off-state capacitance is measured in V_{DC}=2V,V_{RMS}=1V, f=1MHz

SURGE RATINGS

| Series | I _{PP} (A)min | | | |
|--------|------------------------|--------|----------|-----------|
| | 2×10μs | 8×20μs | 10×360μs | 10×1000μs |
| A | 150 | 150 | 70 | 50 |

ORDERING INFORMATION



SOLDERING PARAMETERS

| | | |
|---|-----------------------------------|---------------------------------|
| Reflow Condition | | Pb-Free assembly (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

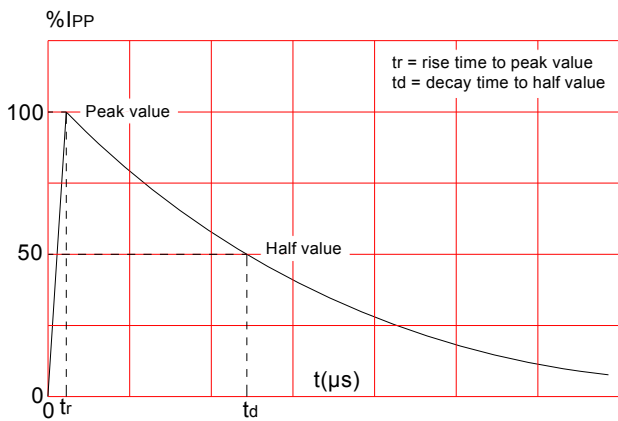


FIG.2: Reflow condition

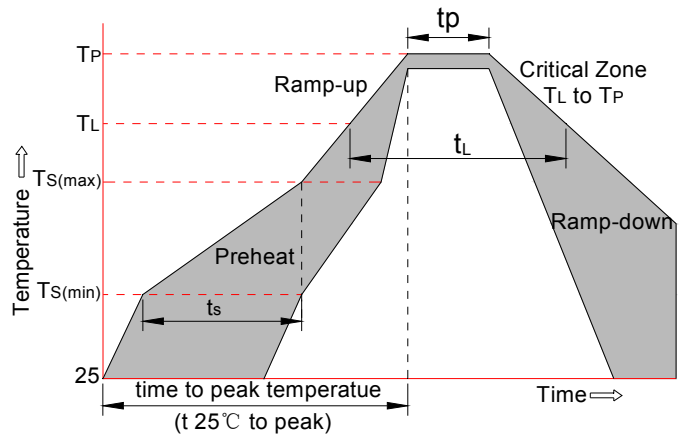


FIG.3: Normalized V_s change vs. junction temperature

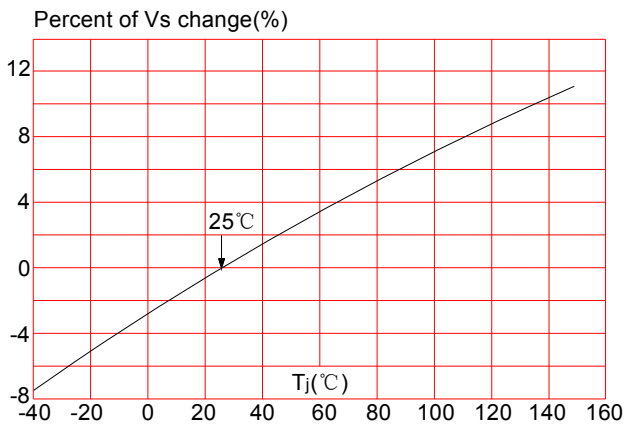
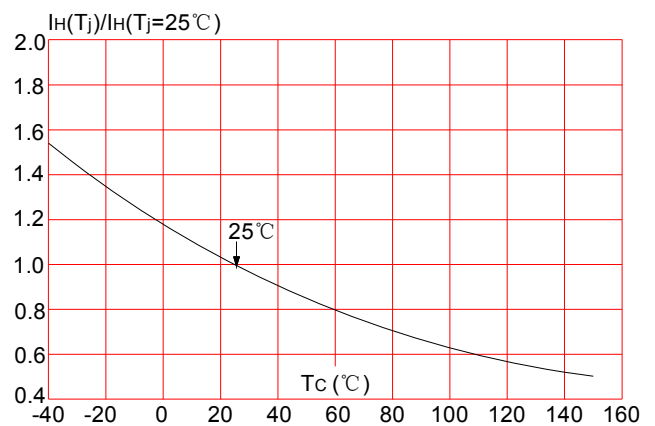
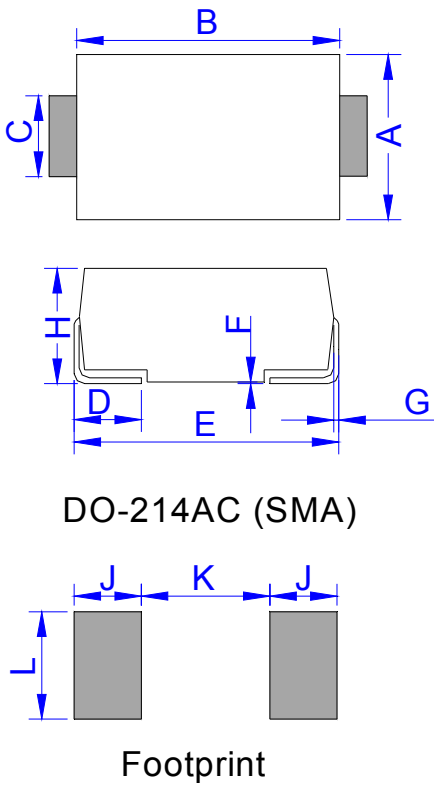


FIG.4: Normalized DC holding current vs. case temperature

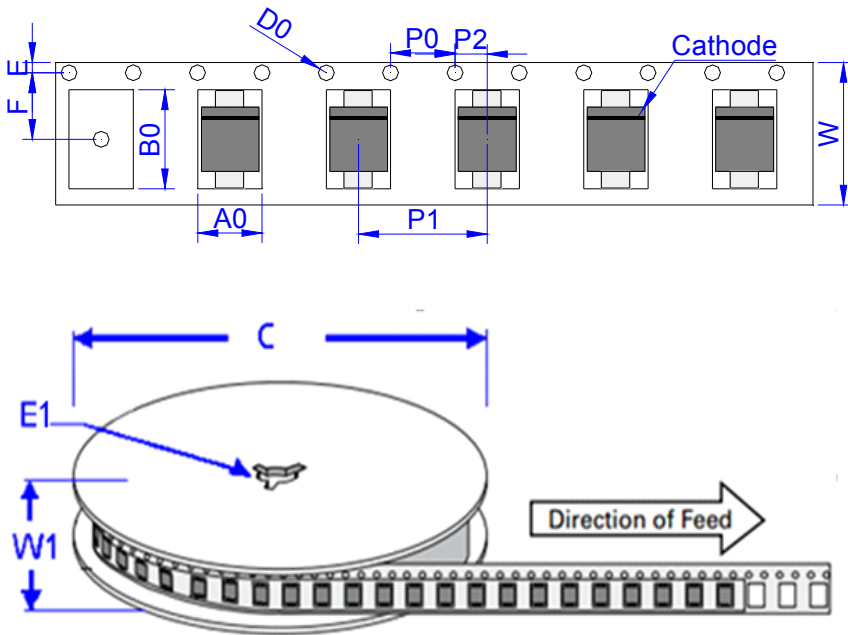


PACKAGE MECHANICAL DATA



| Ref. | Dimensions | | | |
|------|-------------|-------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 2.60 | 3.00 | 0.102 | 0.118 |
| B | 4.15 | 4.65 | 0.163 | 0.183 |
| C | 1.25 | 1.65 | 0.049 | 0.065 |
| D | 0.95 | 1.52 | 0.037 | 0.060 |
| E | 4.90 | 5.30 | 0.193 | 0.209 |
| F | 0.051 | 0.203 | 0.002 | 0.008 |
| G | 0.15 | 0.31 | 0.006 | 0.012 |
| H | 2.00 | 2.44 | 0.079 | 0.096 |
| J | 2.00 | | 0.079 | |
| K | | 2.30 | | 0.091 |
| L | 1.80 | | 0.071 | |

TAPE AND REEL SPECIFICATION-SMA



| Ref. | Dimensions | |
|------|-------------|---------------|
| | Millimeters | Inches |
| A0 | 2.79 ± 0.3 | 0.110 ± 0.012 |
| B0 | 5.33 ± 0.3 | 0.210 ± 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 | 4.00 ± 0.2 | 0.157 ± 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 | 0.062 | 5,000 | 80,000 | 330 |

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.

Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.

This document is the first version which is made in 5-Dec.-2017. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.

Copyright©2017 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.