



### DESCRIPTION

DO-214AC/SMA Thyristor solid state protection thyristor protect telecommunications equipment such as modems, line cards, fax machines, and other CPE. This Series devices are used to enable equipment to meet various regulatory requirements including GR1089, ITUK.20, K.21 and K.45, IEC 60950, and TIA-968 (formerly known as FCC Part 68).

### FEATURES

- ◆ Excellent capability of absorbing transient surge
- ◆ Quick response to surge voltage
- ◆ Eliminates overvoltage caused by fast rising transients
- ◆ Solid-state silicon technology, non degenerative

### APPLICATIONS

- ◆ Audio/Video line
- ◆ Network and telecom
- ◆ Data lines and security systems
- ◆ Serial ports

### DO-214AC PACKAGE



### SCHEMATIC SYMBOL



### PART NUMBER AND ELECTRICAL PARAMETER @ T=25°C RH = 45%-75%

| PART NUMBER | V <sub>DRM</sub><br>V | I <sub>DRM</sub><br>uA<br>Max | V <sub>s</sub><br>V<br>Max | I <sub>s</sub><br>mA | V <sub>T</sub><br>V<br>Max | I <sub>T</sub><br>A | I <sub>H</sub><br>mA<br>Min | C <sub>o</sub><br>pF<br>Typ |
|-------------|-----------------------|-------------------------------|----------------------------|----------------------|----------------------------|---------------------|-----------------------------|-----------------------------|
| P0080TA     | 6                     | 5                             | 25                         | 800                  | 4                          | 2.2                 | 50                          | 50                          |
| P0300TA     | 25                    | 5                             | 40                         | 800                  | 4                          | 2.2                 | 50                          | 50                          |
| P0640TA     | 58                    | 5                             | 77                         | 800                  | 4                          | 2.2                 | 50                          | 50                          |
| P1800TA     | 170                   | 5                             | 220                        | 800                  | 4                          | 2.2                 | 50                          | 50                          |
| P2300TA     | 190                   | 5                             | 260                        | 800                  | 4                          | 2.2                 | 50                          | 50                          |
| P2600TA     | 220                   | 5                             | 300                        | 800                  | 4                          | 2.2                 | 50                          | 50                          |
| P3100TA     | 275                   | 5                             | 350                        | 800                  | 4                          | 2.2                 | 50                          | 50                          |
| P3500TA     | 320                   | 5                             | 400                        | 800                  | 4                          | 2.2                 | 50                          | 50                          |
| P4200TA     | 390                   | 5                             | 500                        | 800                  | 4                          | 2.2                 | 50                          | 50                          |

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
3. All measurements are made at an ambient temperature of 25°C

### SURGE RATINGS

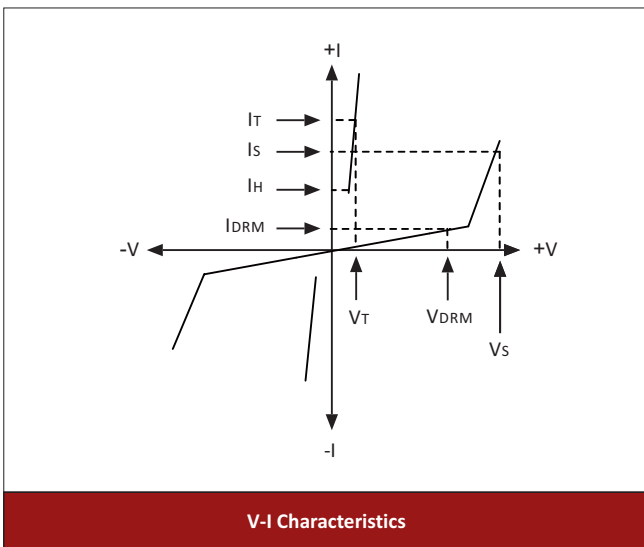
| Series                     | IPP<br>2x10us<br>(A) | IPP<br>8x20us<br>(A) | IPP<br>10x560us<br>(A) | IPP<br>10x1000us<br>(A) | VPP<br>10x700us<br>(V) | I <sub>TSM</sub><br>60Hz<br>(A) | d <sub>i</sub> /d <sub>t</sub><br>(A/us) |
|----------------------------|----------------------|----------------------|------------------------|-------------------------|------------------------|---------------------------------|--|
| P0080TA<br>Thru<br>P4200TA | 150                  | 150                  | 50                     | 45                      | 3000                   | 20                              | 500                                      |



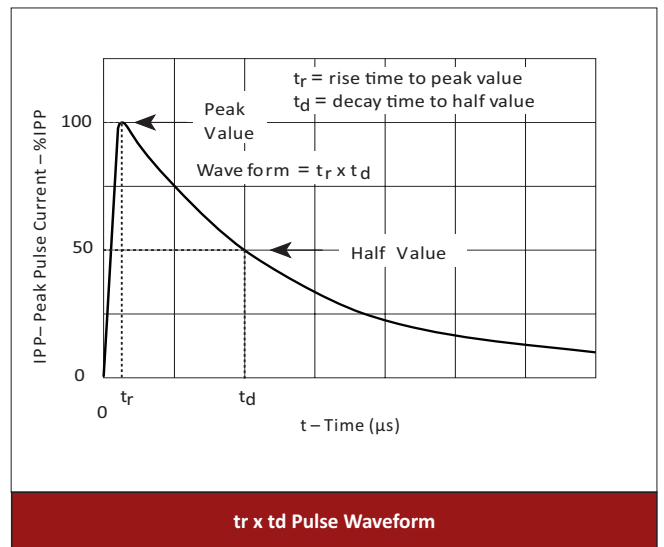
## THERMAL CONSIDERATIONS

| Symbol          | Parameter                              | Value       | Unit                        |
|-----------------|--|-------------|-----------------------------|
| $T_J$           | Operating Junction Temperature         | -40 to +150 | $^{\circ}\text{C}$          |
| $T_s$           | Storage Temperature Range              | -40 to +150 | $^{\circ}\text{C}$          |
| $R_{\theta JA}$ | Junction to Ambient on printed circuit | 90          | $^{\circ}\text{C}/\text{W}$ |

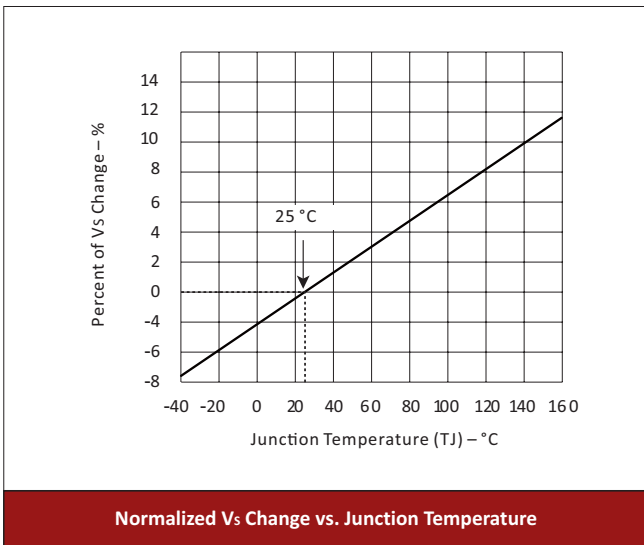
## TYPICAL DEVICE CHARACTERISTICS



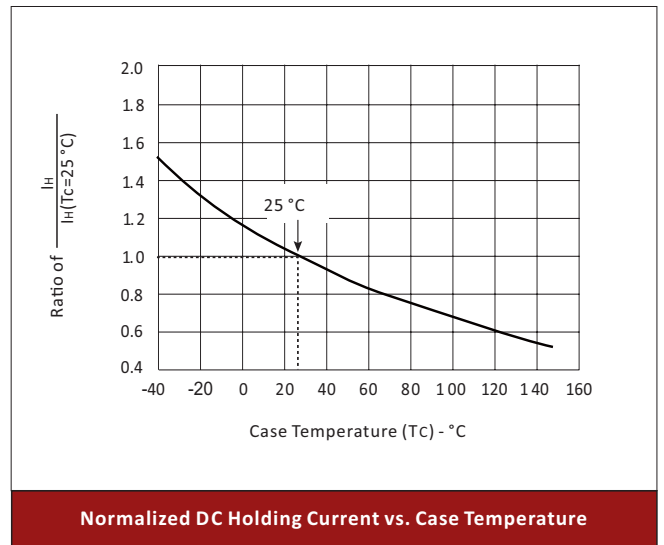
V-I Characteristics



$t_r \times t_d$  Pulse Waveform



Normalized  $V_S$  Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



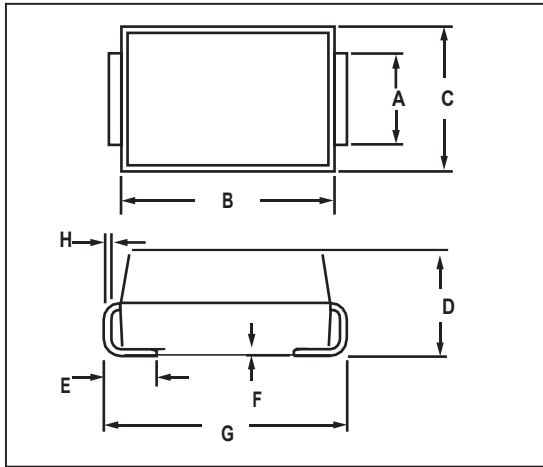
### ENVIRONMENTAL CHARACTERISTICS

| Testing Items                       | Technical Standards   |
|-------------------------------------|---|
| High Temperature Reverse Bias Test  | Temperature:150±3℃,Bias=80%V <sub>DRM</sub> ;Time:168H        |
| High Temperature Life Test          | Temperature:150℃ ;Time:168H                                   |
| High-Low Temperature Cycle Test     | Temperature:From -40℃ to 150℃ ;Dwell Time:30min,10-100 Cycles |
| High Temperature&High Humidity Test | Temperature:85℃.Humidity:85%; Time:168H                       |
| Pressure Cooker Test                | Temperature:121℃,2 atm.Humidity:100%; Time:24H To 168H        |
| Resistance Of Soldering Heat        | Temperature:260±5℃;Time Of Dip Soldering:10s,3 Times          |

### PRODUCT DIMENSIONS

| DIM | OUTLINE DIMENSIONS |      |        |       |
|-----|--------------------|------|--------|-------|
|     | MILLIMETERS        |      | INCHES |       |
|     | MIN                | MAX  | MIN    | MAX   |
| A   | 1.23               | 1.63 | 0.049  | 0.064 |
| B   | 4.10               | 4.55 | 0.162  | 0.179 |
| C   | 2.51               | 2.76 | 0.099  | 0.109 |
| D   | 1.96               | 2.26 | 0.077  | 0.089 |
| E   | 0.75               | 1.51 | 0.030  | 0.060 |
| F   | 0.00               | 0.20 | 0.000  | 0.008 |
| G   | 4.87               | 5.22 | 0.192  | 0.206 |
| H   | 0.15               | 0.30 | 0.006  | 0.012 |

**NOTES**  
1. Dimensions are exclusive of mold flash and metal burrs.



### RECOMMENDED PAD LAYOUT DIMENSIONS

| DIM | PAD LAYOUT DIMENSIONS |      |        |       |
|-----|-----------------------|------|--------|-------|
|     | MILLIMETERS           |      | INCHES |       |
|     | MIN                   | MAX  | MIN    | MAX   |
| A   | 1.57                  | -    | 0.062  | -     |
| B   | 1.55                  | -    | 0.061  | -     |
| C   | -                     | 2.28 | -      | 0.090 |
| D   | 1.55                  | -    | 0.061  | -     |

