



Micro Commercial Components

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**TSMBJ1006C  
 THRU  
 TSMBJ1024C**

**Transient Voltage  
 Protection Device  
 75 to 320 Volts**

**Features**

- Oxide-Glass passivated Junction
- Bi-Directional protection in a single device
- Surge capabilities up to 100A@10/1000us or 400A@8/20us
- High Off-State impedance and Low On-State voltage
- Plastic material has UL flammability classification 94V-0

**Mechanical Data**

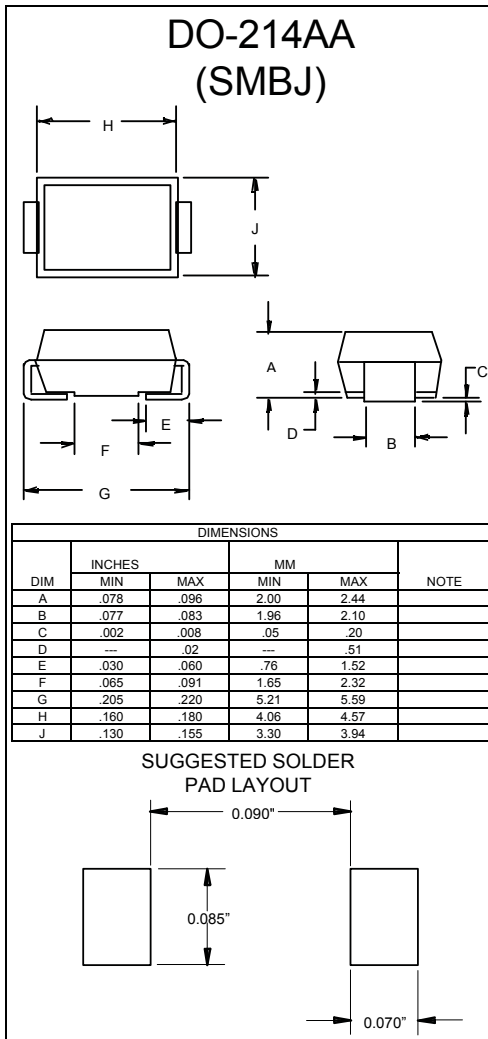
- Case : Molded plastic
- Polarity : None cathode band denotes
- Approx Weight : 0.093grams

**Maximum Rating**

| Characteristic                         | Symbol         | Value     | Unit                  |
|--|----------------|-----------|-----------------------|
| Non-repetitive peak impulse current    | $I_{PP}$       | 100A      | 10/1000us             |
| Non-repetitive peak On-state current   | $I_{TSM}$      | 50A       | 8.3ms, one-half cycle |
| Operating temperature range            | $T_{OP}$       | -40~150°C |                       |
| Junction and storage temperature range | $T_J, T_{STG}$ | -55~150°C |                       |

**Thermal Resistance**

| Characteristic   | Symbol                     | Value   | Unit                      |
|--|----------------------------|---------|---------------------------|
| Thermal Resistance junction to lead                            | $R_{\theta JL}$            | 20°C/W  |                           |
| Thermal Resistance junction to ambient                         | $R_{\theta JA}$            | 100°C/W | On recommended pad layout |
| Typical positive temperature coefficient for breakdown voltage | $\Delta V_{BR}/\Delta T_J$ | 0.1%/°C |                           |



# TSMBJ1006C thru TSMBJ1024C



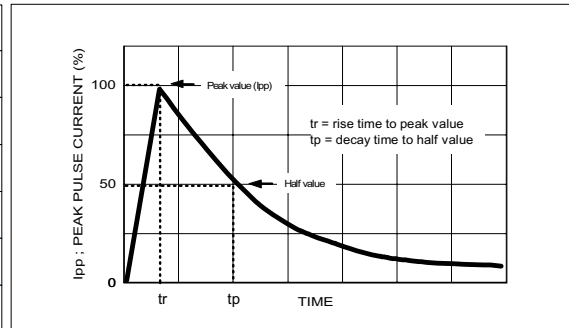
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## ELECTRICAL CHARACTERISTIC @25°C Unless otherwise specified

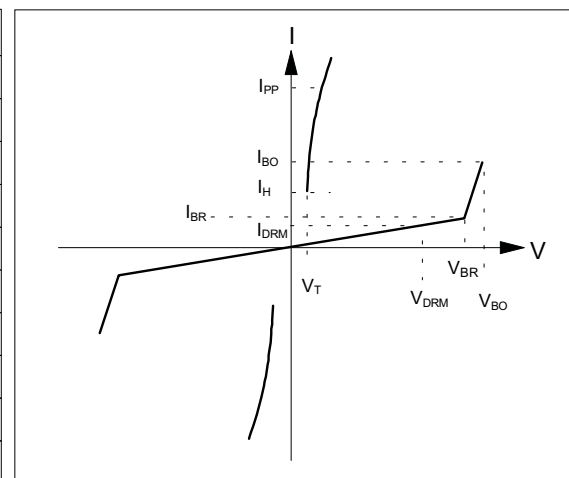
| Parameter  | Rated Repetitive Off-state Voltage | Off-state Leakage Current@V <sub>DRM</sub> | Breakover Voltage | On-State Voltage @I <sub>T</sub> =1.0A | Breakover Current | Holding Current | Off-State      |
|------------|------------------------------------|--|-------------------|--|-------------------|-----------------|----------------|
| Symbol     | V <sub>DRM</sub>                   | I <sub>DRM</sub>                           | V <sub>BO</sub>   | V <sub>T</sub>                         | I <sub>BO+</sub>  | I <sub>H</sub>  | C <sub>J</sub> |
| Units      | Volts                              | uA   | Volts             | Volts                                  | mA                | mA              | pF             |
| Limit      | Max                                | Max  | Max               | Max                                    | Max               | Min             | Typ.           |
| TSMBJ1006C | 75                                 | 5  | 98                | 5                                      | 800               | 150             | 200            |
| TSMBJ1007C | 90                                 | 5  | 130               | 5                                      | 800               | 150             | 120            |
| TSMBJ1010C | 140                                | 5  | 180               | 5                                      | 800               | 150             | 120            |
| TSMBJ1012C | 160                                | 5  | 220               | 5                                      | 800               | 150             | 120            |
| TSMBJ1016C | 190                                | 5  | 265               | 5                                      | 800               | 150             | 80             |
| TSMBJ1018C | 220                                | 5  | 300               | 5                                      | 800               | 150             | 80             |
| TSMBJ1022C | 275                                | 5  | 350               | 5                                      | 800               | 150             | 80             |
| TSMBJ1024C | 320                                | 5  | 400               | 5                                      | 800               | 150             | 80             |

## MAXIMUM RATED SURGE WAVEFORM

| Waveform   | Standard      | I <sub>pp</sub> (A) |
|------------|---------------|---------------------|
| 2/10 us    | GR-1089-CORE  | 500                 |
| 8/20 us    | IEC 61000-4-5 | 400                 |
| 10/160 us  | FCC Part 68   | 200                 |
| 10/700 us  | ITU-T K20/21  | 200                 |
| 10/560 us  | FCC Part 68   | 150                 |
| 10/1000 us | GR-1089-CORE  | 100                 |



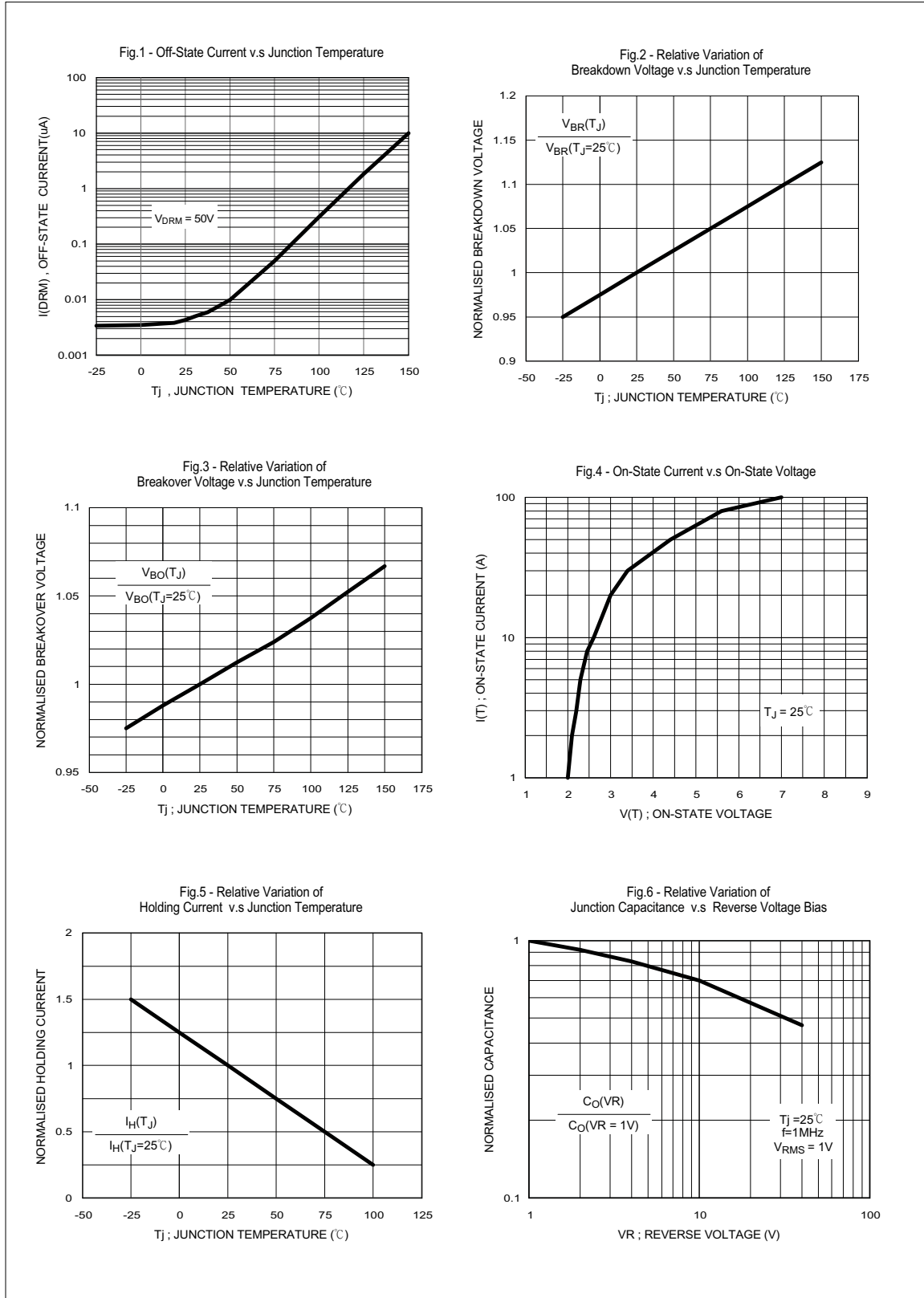
| Symbol           | Parameter                            |         |
|------------------|--------------------------------------|---------|
| V <sub>DRM</sub> | Stand-off voltage                    |         |
| I <sub>DRM</sub> | Leakage current at stand-off voltage |         |
| V <sub>BR</sub>  | Breakdown voltage                    |         |
| I <sub>BR</sub>  | Breakdown current                    |         |
| V <sub>BO</sub>  | Breakover voltage                    |         |
| I <sub>BO</sub>  | Breakover current                    |         |
| I <sub>H</sub>   | Holding current                      | NOTE: 1 |
| V <sub>T</sub>   | On state voltage                     |         |
| I <sub>PP</sub>  | Peak pulse current                   |         |
| C <sub>O</sub>   | Off-state capacitance                | NOTE: 2 |



NOTE :

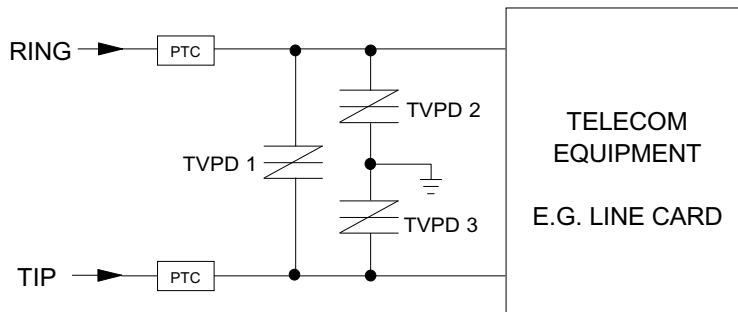
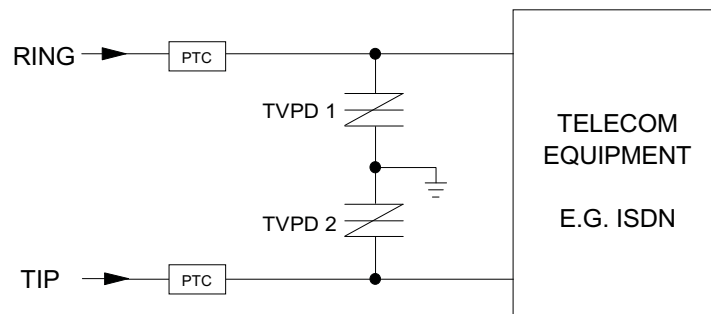
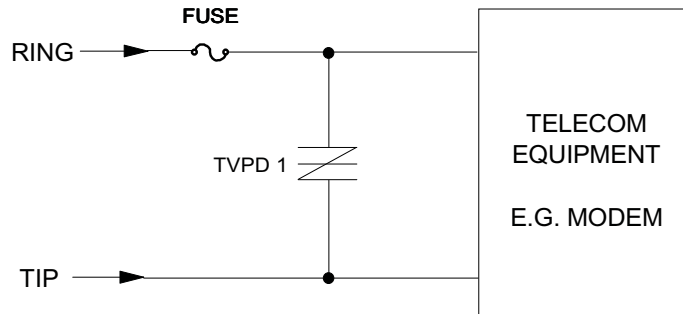
1.  $I_H > (V_L / R_L)$  If this criterion is not obeyed, the TSPD triggers but does not return correctly to high-resistance state. The surge recovery time. It does not exceed 30ms.
2. Off-state capacitance measured at  $f=1.0\text{MHz}$ ,  $1.0\text{Vrms}$  signal,  $V_R=2\text{Vdc}$  bias.

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## TYPICAL APPLICATION CIRCUITS



The PTC (Positive Temperature Coefficient) is an overcurrent protection device.

## MARKING CODE

