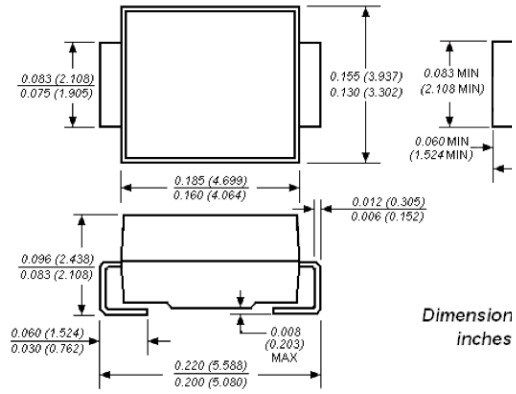
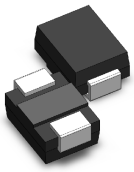
## Surface Mount
## Thyristor Surge Protective Devices
## TSP0080SB-TSP4200SB

TSP0080SB – TSP4200SB Series are designed to protect broadband equipment such as modems, line card, CPE and DSL from damaging over-voltage transients.

The series provides a surface mount solution that enables equipment to comply with global regulatory standards.



### FEATURES

Low voltage overshoot

Low on-state voltage

Does not degrade surge capability after multiple surge events within limit

Fails short circuit when surged in excess of ratings

Low Capacitance

### MECHANICAL DATA

Case:  SMB Molded plastic

## Main applications

TIA-968-A

ITU K.20/21 Enhanced level

ITU K.20/21 Basic Level

GR 1089 Inter building

GR 1089 Inter building

IEC 6100-4-5

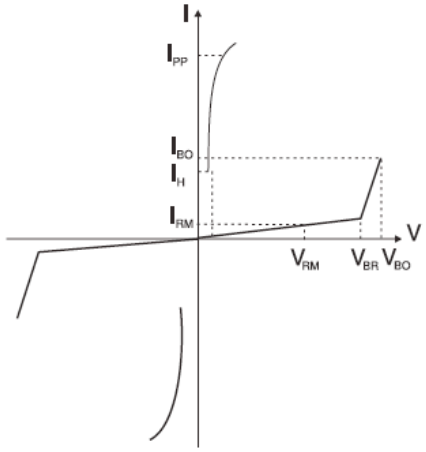
YD/T 1082 YD/T 993 YD/T 950

## Absolute Ratings (Tamb=25℃)

| Symbol | Parameter | | Value | Unit |
|---|---|---|---|---|
| Ts | Storage temperature range | | -55 to +150 | ℃ |
| Tj | Maximum junction temperature | | 150 | ℃ |
| $I_{PP}$ | Repetitive peak pulse current | 10/1000μs<br>10/560μs<br>10/160μs<br>8/20μs<br>2/10μs | 75<br>100<br>150<br>250<br>250 | A |
| $I_{TSM}$ | Non repetitive surge peak on-state current (sinusoidal) | t=1s | 8 | A |

**Electrical Parameters**

| Symbol | Parameter |
|---|---|
| $V_{RM}$ | Stand-off voltage |
| $V_{BR}$ | Breakdown voltage |
| $V_{BO}$ | Breakover voltage |
| $I_{RM}$ | Leakage current |
| $I_{PP}$ | Peak pulse current |
| $I_{BO}$ | Breakover current |
| $I_H$ | Holding current |
| $V_R$ | Continuous reverse voltage |
| $I_R$ | Leakage current at $V_R$ |
| C0 | Capacitance |




**Electrical Characteristics (25C)**

| | VRM | IRM | VBO | IBO | VT | IT | Co | IH |
|---|---|---|---|---|---|---|---|---|
| | Min | | Max. | Max. | Max. | | Max. | Min. |
| **TSP0080SB** | V | uA | V | mA | V | A | pF | mA |
| | 6 | 2 | 15 | 800 | 2 | 1 | 80 | 50 |
| **TSP4200SB** | 390 | 5 | 500 | 800 | 2.2 | 1 | 25 | 150 |

- **Characteristic Curves**

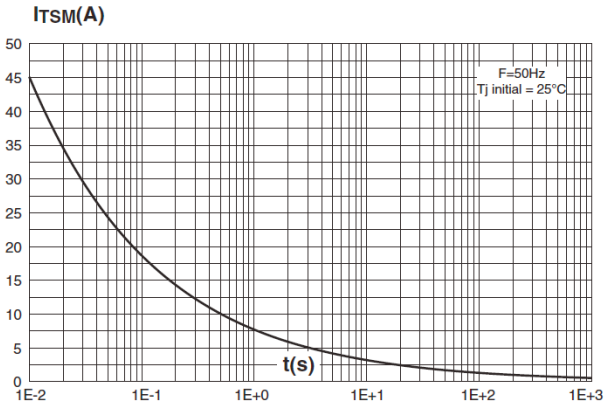



**Figure 1. Non repetitive surge peak on-state current versus overload duration**

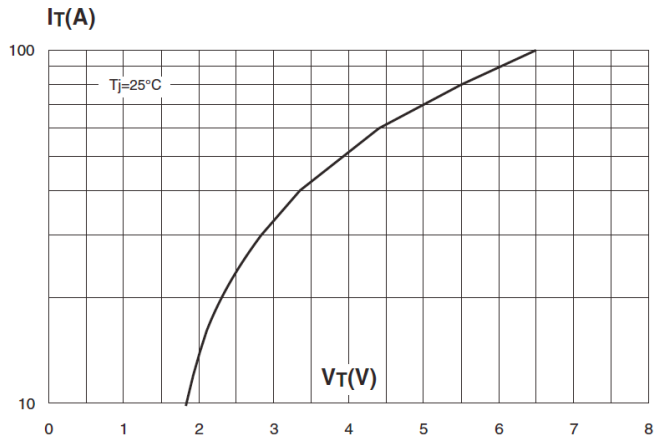



**Figure 2. On-state voltage versus on-state current (typical values)**

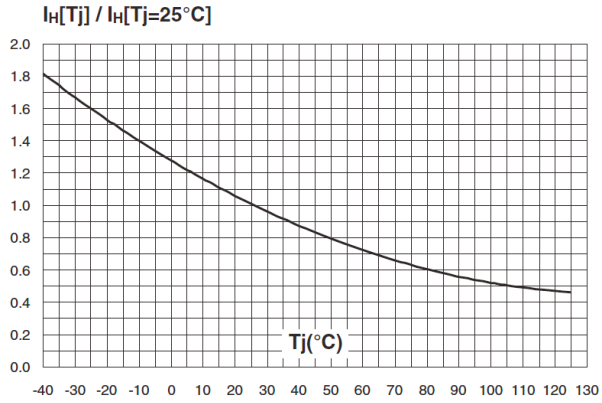



**Figure 3. Relative variation of holding current versus junction temperature**

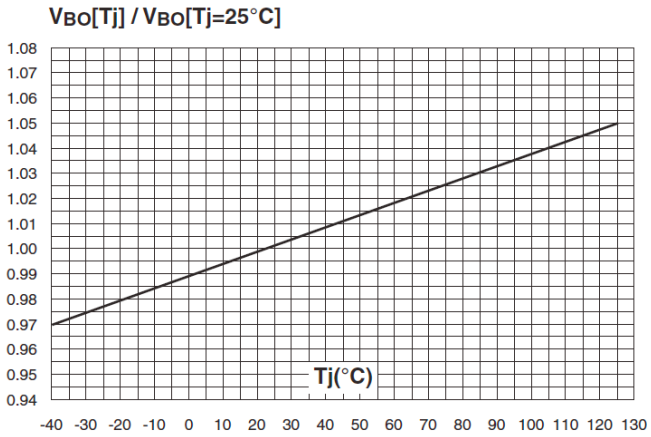



**Figure 4. Relative variation of break over voltage versus junction temperature**

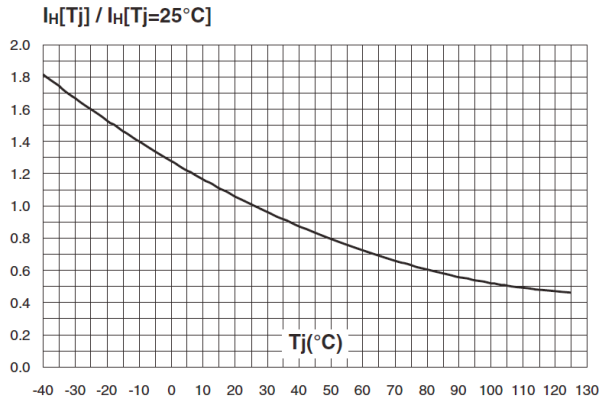



**Figure 5. Relative variation of holding current versus junction temperature**

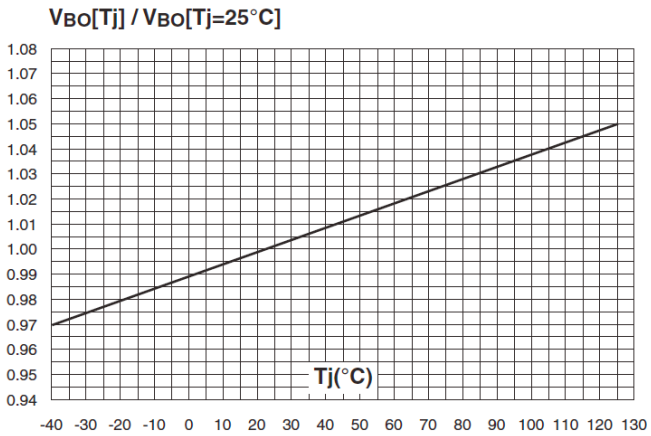



**Figure 6. Relative variation of break over voltage versus junction temperature**

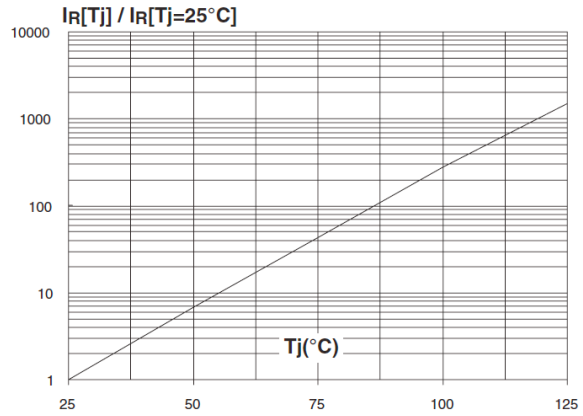



**Figure 7. Relative variation of leakage current versus reverse voltage applied (typical values)**

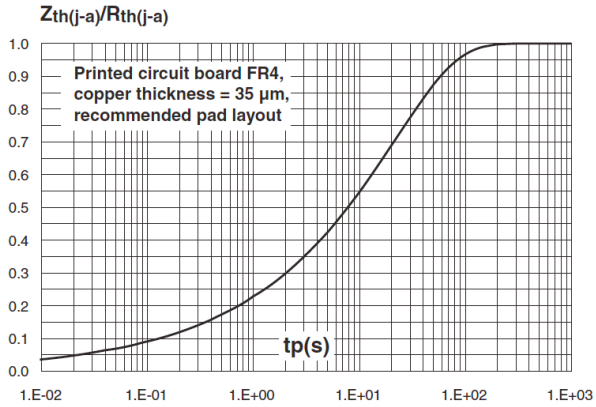



**Figure 8. Variation of thermal impedance junction to ambient versus pulse duration**