# P0080SB THRU P5000SB

RoHS COMPLIANT

## Thyristor Surge Suppressors

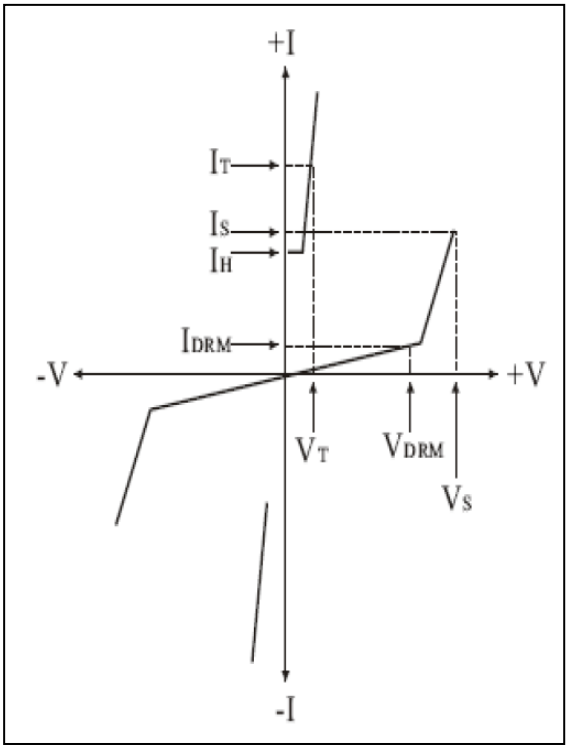
**DO-214AA/SMB**

**Features**

- Low switching voltage
- 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

## ■Electrical Parameters

| Parameter | Definition |
|---|---|
| CO | Off-state Capacitance—typical capacitance measured in off state @ 2 V bias and 1 MHz |
| di/dt | Rate of Rise of Current—maximum rated value of the acceptable rate of rise in current over time |
| IS | Switching Current —maximum current required to switch to on state |
| IDRM | Leakage Current—maximum peak off-state current measured at VDRM |
| IH | Holding Current—minimum current required to maintain on state |
| IPP | Peak Pulse Current—maximum rated peak impulse current |
| IT | On-state Current—maximum rated continuous on-state current |
| ITSM | Peak One-cycle Surge Current—maximum rated one-cycle AC current |
| VS | Switching Voltage—maximum voltage prior to switching to on state during 100V/μs surge |
| VDRM | Peak Off-state Voltage—maximum voltage that can be applied while maintaining off state |
| VF | On-state Forward Voltage—maximum forward voltage measured at rated on-state current |
| VT | On-state Voltage—maximum voltage measured at rated on-state current |



## ■Limiting Values (Absolute Maximum Rating)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Operating Junction Temperature | TJ | -40 to+150 | ℃ |
| Storage Temperature Range | TS | -40 to+150 | ℃ |
| Junction to Ambient on printed circuit | RθJA | 90 | ℃/W |

## ■Electrical Characteristics（$T_a$=25℃ Unless otherwise specified）

| Part Number* | VDRM Volts | VS Volts | VT Volts | IDRM μAmps | IS mAmps | IT Amps | IH mAmps | CO pF |
|---|---|---|---|---|---|---|---|---|
| P0080SB | 6 | 25 | 4 | 5 | 800 | 2.2 | 50 | 60 |
| P0300SB | 25 | 40 | 4 | 5 | 800 | 2.2 | 50 | 65 |
| P0640SB | 58 | 77 | 4 | 5 | 800 | 2.2 | 150 | 45 |
| P0720SB | 65 | 88 | 4 | 5 | 800 | 2.2 | 150 | 45 |
| P0900SB | 75 | 98 | 4 | 5 | 800 | 2.2 | 150 | 40 |
| P1100SB | 90 | 130 | 4 | 5 | 800 | 2.2 | 150 | 40 |
| P1300SB | 120 | 160 | 4 | 5 | 800 | 2.2 | 150 | 40 |
| P1500SB | 140 | 180 | 4 | 5 | 800 | 2.2 | 150 | 35 |
| P1800SB | 170 | 220 | 4 | 5 | 800 | 2.2 | 150 | 65 |
| P2000SB | 180 | 220 | 4 | 5 | 800 | 2.2 | 150 | 60 |
| P2300SB | 190 | 260 | 4 | 5 | 800 | 2.2 | 150 | 60 |
| P2600SB | 220 | 300 | 4 | 5 | 800 | 2.2 | 150 | 45 |
| P3100SB | 275 | 350 | 4 | 5 | 800 | 2.2 | 150 | 45 |
| P3500SB | 320 | 400 | 4 | 5 | 800 | 2.2 | 150 | 40 |
| P4000SB | 360 | 460 | 4 | 5 | 800 | 2.2 | 150 | 40 |
| P4500SB | 400 | 540 | 4 | 5 | 800 | 2.2 | 150 | 40 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| P5000SB | 440 | 600 | 4 | 5 | 800 | 2.2 | 150 | 40 |

## Notes:

*For surge ratings, see table below.

Notes:

•All measurements are made at an ambient temperature of 25℃. IPP applies to -40℃ through +85℃ temperature range.

•Off-state capacitance (CO) is measured at 1 MHz with a 2V bias and is typical value.

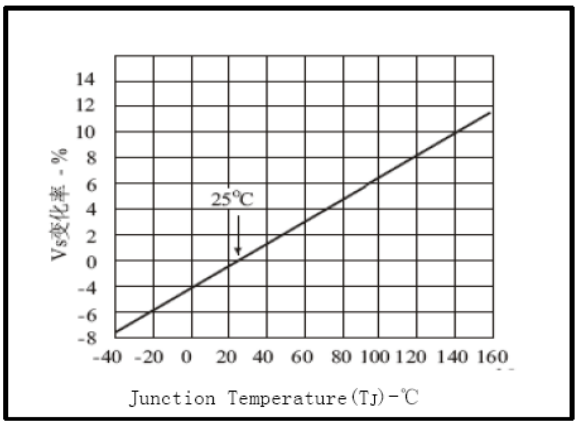
## ■Surge Ratings

| Series | IPP 2x10μs | IPP 8x20μs | IPP 10x160μs | IPP 10x560μs | IPP 10x1000μs | ITSM 60Hz | di/dt |
|---|---|---|---|---|---|---|---|
| B | Amps 250 | Amps 250 | Amps 150 | Amps 100 | Amps 80 | Amps 20 | Amps/μs 500 |

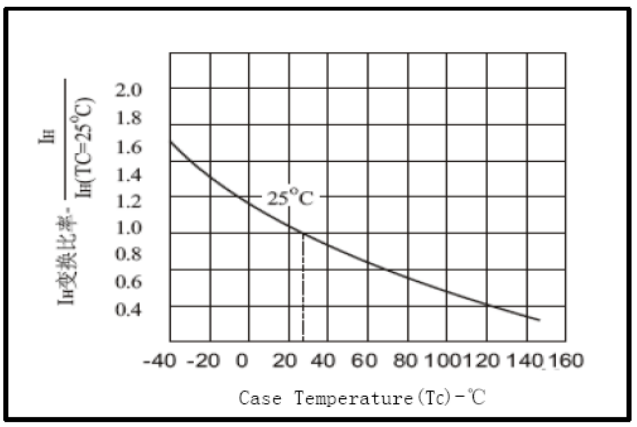
## ■Ordering Information (Example)

| PREFERED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| P0080SB THRU P5000SB | F1 | Approximate 0.065 | 5000 | 10000 | 100000 | 13” reel |

## ■Characteristics(Typical)

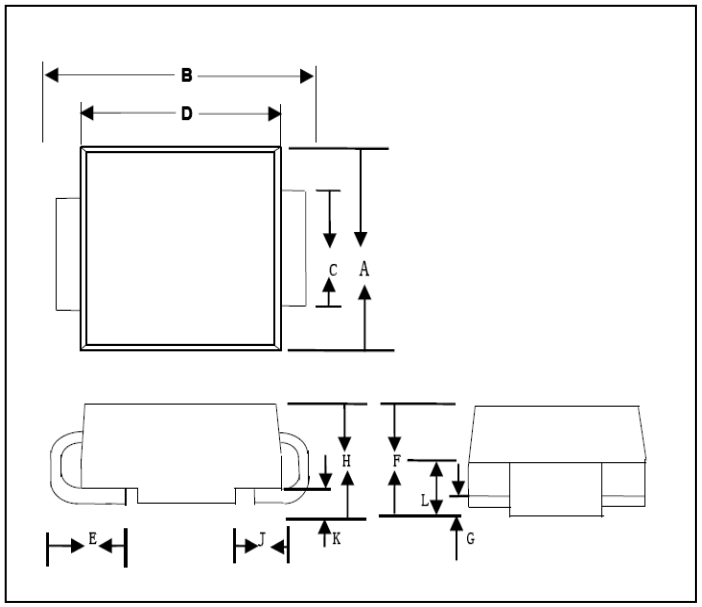



Normalized VS Change versus Junction Temperature




Normalized DC Holding Current versus Case Temperature

## ■Dimensions




| Dim | Millimeters | | Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 3.40 | 3.94 | 0.134 | 0.155 |
| B | 5.21 | 5.59 | 0.205 | 0.22 |
| C | 1.90 | 2.11 | 0.075 | 0.083 |
| D | 4.22 | 4.70 | 0.166 | 0.185 |
| E | 0.91 | 1.42 | 0.036 | 0.056 |
| F | 1.85 | 2.2 | 0.073 | 0.087 |
| G | 0.05 | 0.20 | 0.002 | 0.008 |
| H | 1.95 | 2.40 | 0.077 | 0.094 |
| J | 1.09 | 1.35 | 0.043 | 0.053 |
| K | 0.20 | 0.35 | 0.008 | 0.014 |
| L | 0.99 | 1.24 | 0.039 | 0.049 |

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