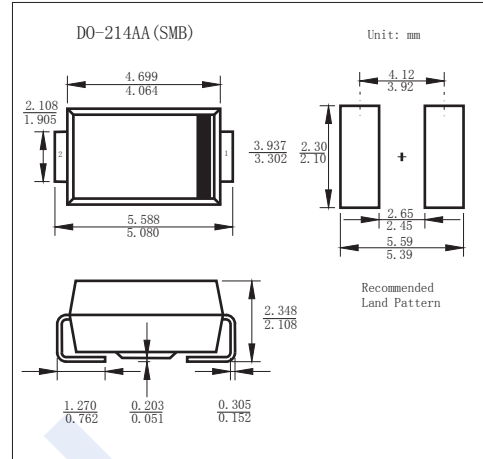
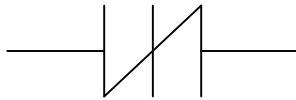


Thyristor Surge Suppressors P0080SB ~ P5000SB

■ Features

- Low voltage overshoot
- Low on-state voltage
- Low Capacitance
- Does not degrade surge capability after multiple surge events within limit
- Fails short circuit when surged in excess of ratings

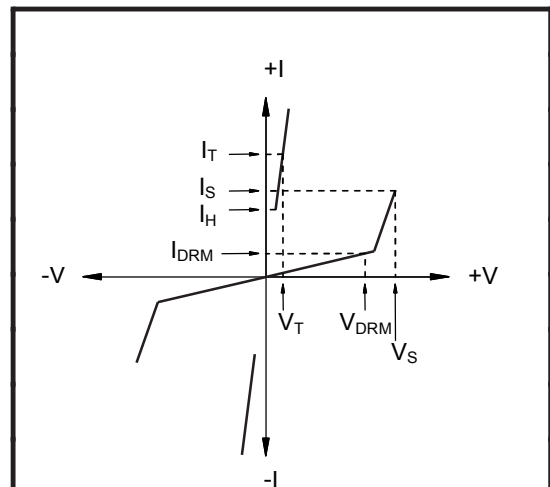


■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit |
|--|------------|------------|---------------------------|
| Non-Repetitive Peak on-state Current @ 50/60Hz | I_{TSM} | 30 | A |
| Critical Rate of rise of off-state Current | di/dt | 500 | A/us |
| Thermal Resistance Junction to Ambient | R_{thJA} | 90 | $^\circ\text{C}/\text{W}$ |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -40 to 150 | |

■ Electrical Parameters

| Parameter | Definition |
|-----------|---|
| I_S | Switching Current - maximum current required to switch to on state |
| I_{DRM} | Leakage Current - maximum peak off-state current measured at V_{DRM} |
| I_H | Holding Current - minimum current required to maintain on state |
| I_T | On-state Current - maximum rated continuous on-state current |
| V_S | Switching Voltage - maximum voltage prior to switching to on state |
| V_{DRM} | Peak Off-state Voltage - maximum voltage that can be applied while maintaining off state |
| V_T | On-state Voltage - maximum voltage measured at rated on-state current |
| C_0 | Off-state Capacitance - typical capacitance measured in off state |



Thyristor Surge Suppressors

P0080SB ~ P5000SB

■ Electrical Characteristics (Ta = 25°C, unless otherwise noted.)

| Part Number | Marking | V _{DRM} @I _{DRM} =5μA | V _S @100V/μS | V _T @I _T =2.2A | I _S | I _T | I _H | C ₀ @1MHz | |
|-------------|---------|--|----------------------------|---|----------------|----------------|----------------|-------------------------|--------|
| | | V min | V max | V max | mA max | A max | mA min | pF min | pF max |
| P0080SB | P008B | 6 | 25 | 4 | 800 | 2.2 | 50 | 25 | 150 |
| P0300SB | P03B | 25 | 40 | 4 | 800 | 2.2 | 50 | 15 | 140 |
| P0640SB | P06B | 58 | 77 | 4 | 800 | 2.2 | 150 | 40 | 60 |
| P0720SB | P07B | 65 | 88 | 4 | 800 | 2.2 | 150 | 35 | 60 |
| P0900SB | P09B | 75 | 98 | 4 | 800 | 2.2 | 150 | 25 | 55 |
| P1100SB | P11B | 90 | 130 | 4 | 800 | 2.2 | 150 | 30 | 50 |
| P1300SB | P13B | 120 | 160 | 4 | 800 | 2.2 | 150 | 25 | 45 |
| P1500SB | P15B | 140 | 180 | 4 | 800 | 2.2 | 150 | 25 | 40 |
| P1800SB | P18B | 170 | 220 | 4 | 800 | 2.2 | 150 | 25 | 35 |
| P2000SB | P20B | 180 | 220 | 4 | 800 | 2.2 | 150 | 20 | 35 |
| P2300SB | P23B | 190 | 260 | 4 | 800 | 2.2 | 150 | 25 | 35 |
| P2600SB | P26B | 220 | 300 | 4 | 800 | 2.2 | 150 | 20 | 35 |
| P3100SB | P31B | 275 | 350 | 4 | 800 | 2.2 | 150 | 20 | 35 |
| P3500SB | P35B | 320 | 400 | 4 | 800 | 2.2 | 150 | 20 | 35 |
| P4000SB | P40B | 360 | 460 | 4 | 800 | 2.2 | 150 | 20 | 35 |
| P4500SB | P45B | 400 | 540 | 4 | 800 | 2.2 | 150 | 20 | 35 |
| P5000SB | P50B | 440 | 600 | 4 | 800 | 2.2 | 150 | 20 | 35 |

Notes:

- Absolute maximum ratings measured at T_A= 25°C (unless otherwise noted).
- Devices are bi-directional.

■ Surge Ratings

| Series | 2/10μS ¹ | 8/20μS ¹ | 10/160μS ¹ | 10/560μS ¹ | 10/1000μS ¹ | 5/310μS ¹ | I _{TSM} 50/60 Hz | di/dt |
|--------|---------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|------------------------------|-------------|
| | 2/10μS ² | 1.2/50μS ² | 10/160μS ² | 10/560μS ² | 10/1000μS | 10/700μS ² | | |
| | A min | A min | A min | A min | A min | A min | A min | Amps/μs max |
| B | 250 | 250 | 150 | 100 | 80 | 100 | 30 | 500 |

Notes:

- Current waveform in μs
 - Voltage waveform in μs
- Peak pulse current rating (I_{PP}) is repetitive and guaranteed for the life of the product.
 - I_{PP} ratings applicable over temperature range of -40°C to +85°C
 - The device must initially be in thermal equilibrium with -40°C < T_J < +150°C

Thyristor Surge Suppressors P0080SB ~ P5000SB

■ Typical Characteristics

Figure 1 - V-I Characteristics

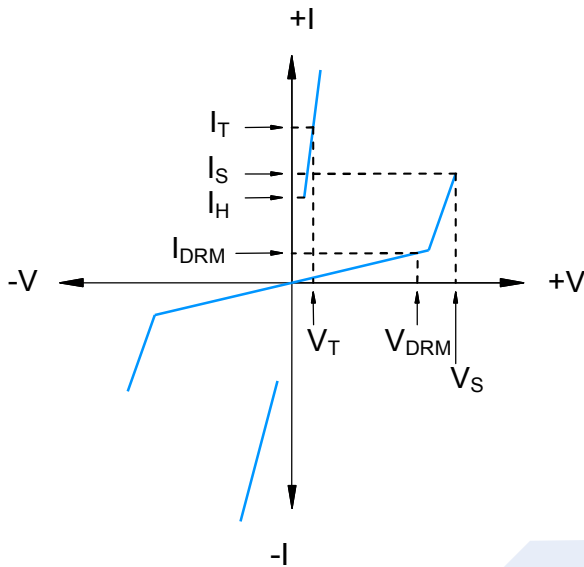


Figure 2 - $t_r \times t_d$ Pulse Waveform

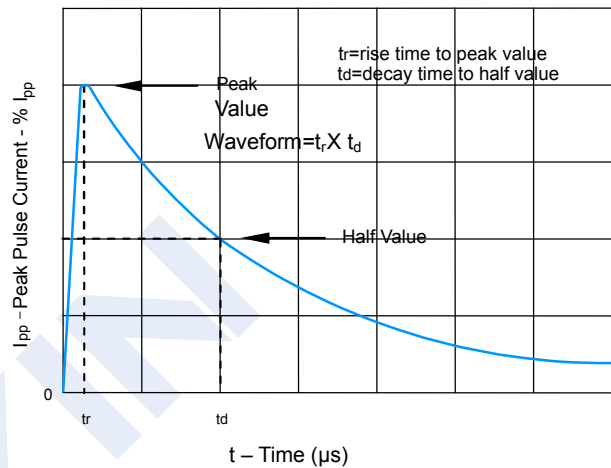


Figure 3 - Normalized V_S Change Versus Junction Temperature

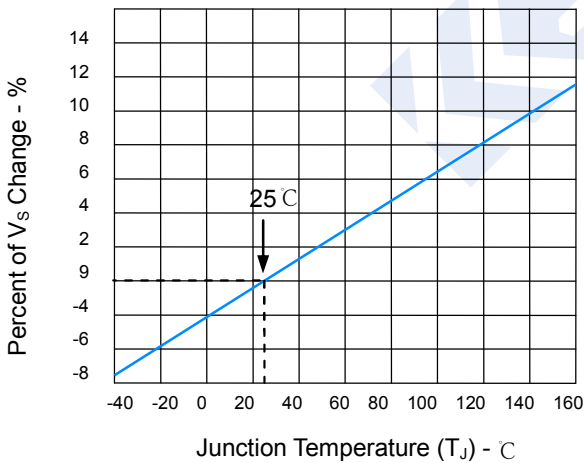


Figure 4 - Normalized DC Holding Current Versus Case Temperature

