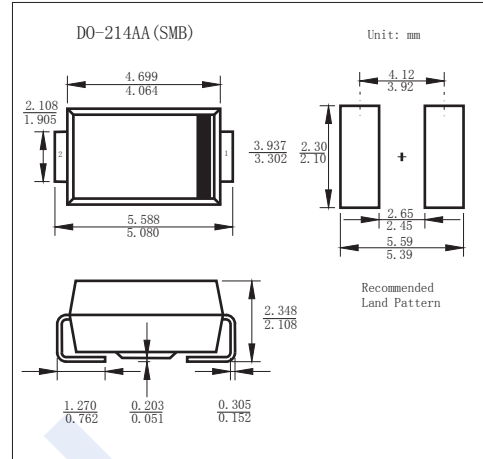
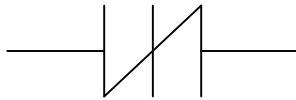


## Thyristor Surge Suppressors P0080SB ~ P5000SB

### ■ 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

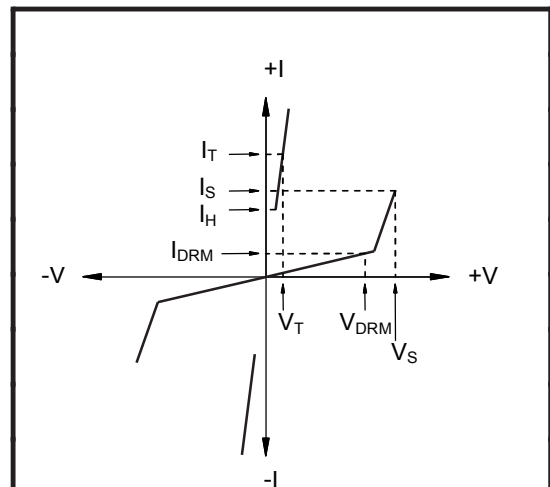


### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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



## Thyristor Surge Suppressors

### P0080SB ~ P5000SB

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

Part Number	Marking	V <sub>DRM</sub> @I <sub>DRM</sub> =5μA	V <sub>S</sub> @100V/μS	V <sub>T</sub> @I <sub>T</sub> =2.2A	I <sub>S</sub>	I <sub>T</sub>	I <sub>H</sub>	C <sub>0</sub> @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<sub>A</sub>= 25°C (unless otherwise noted).
- Devices are bi-directional.

#### ■ Surge Ratings

Series	2/10μS <sup>1</sup>	8/20μS <sup>1</sup>	10/160μS <sup>1</sup>	10/560μS <sup>1</sup>	10/1000μS <sup>1</sup>	5/310μS <sup>1</sup>	I <sub>TSM</sub> 50/60 Hz	di/dt
	2/10μS <sup>2</sup>	1.2/50μS <sup>2</sup>	10/160μS <sup>2</sup>	10/560μS <sup>2</sup>	10/1000μS	10/700μS <sup>2</sup>		
	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<sub>PP</sub>) is repetitive and guaranteed for the life of the product.
  - I<sub>PP</sub> ratings applicable over temperature range of -40°C to +85°C
  - The device must initially be in thermal equilibrium with -40°C < T<sub>J</sub> < +150°C

## Thyristor Surge Suppressors P0080SB ~ P5000SB

■ Typical Characteristics

Figure 1 - V-I Characteristics

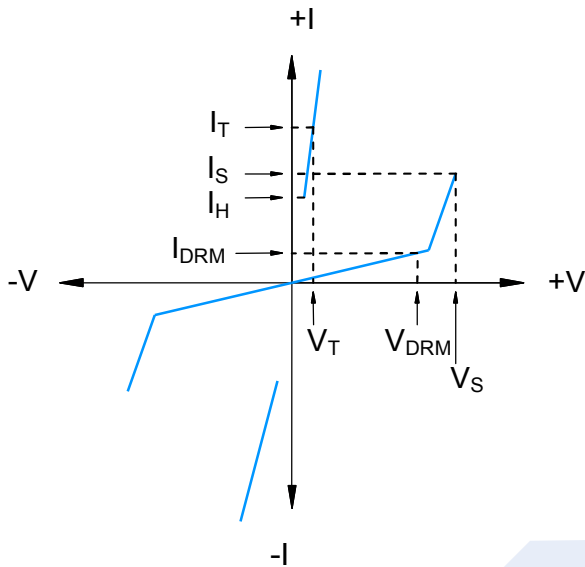


Figure 2 -  $t_r \times t_d$  Pulse Waveform

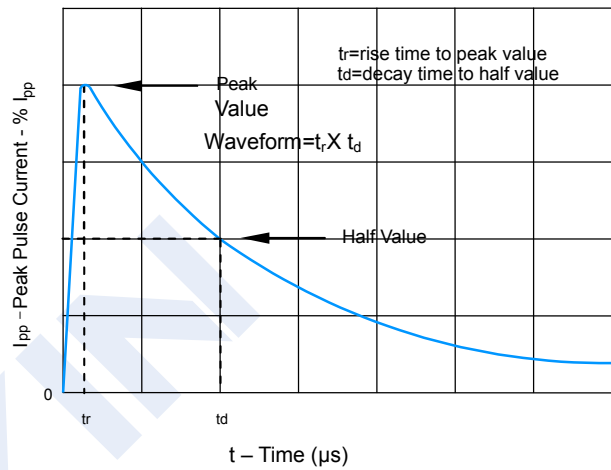


Figure 3 - Normalized  $V_S$  Change Versus Junction Temperature

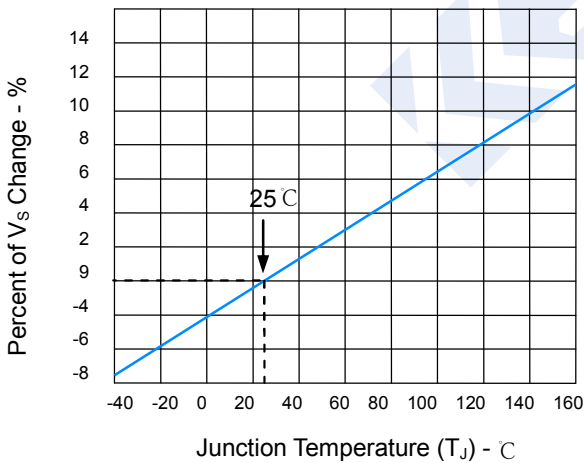


Figure 4 - Normalized DC Holding Current Versus Case Temperature

