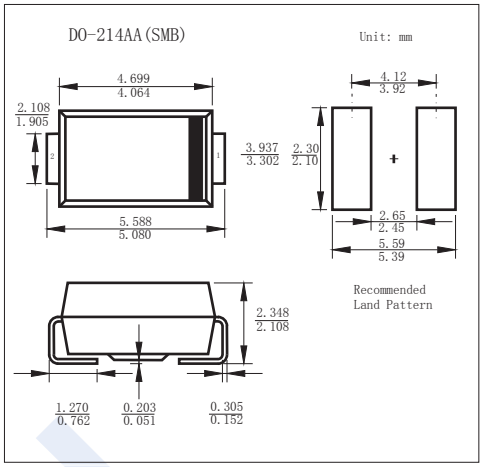
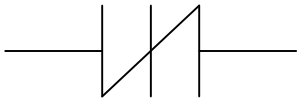
Thyristor Surge Suppressors
P0080SB ~ P5000SB



■ 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

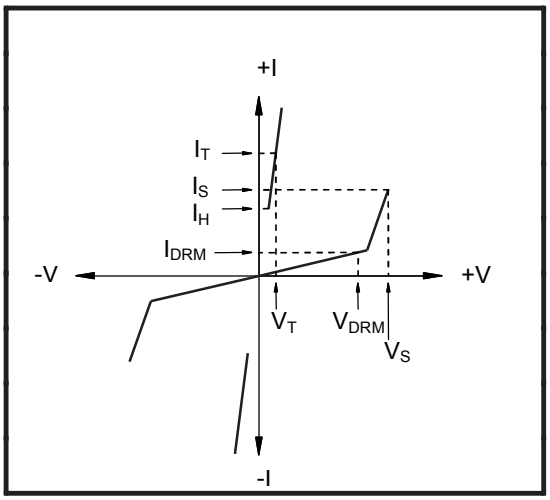


■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Non-Repetitive Peak on-state Current @ 50/60Hz	I_{TSM}	30	A
Critical Rate of rise of off-state Curent	di/dt	500	A/us
Thermal Resistance Junction to Ambient	R_{thJA}	90	℃/W
Junction Temperature	T_J	150	℃
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 VDRM
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 stat
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



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■ Electrical Characteristics (Ta = 25℃, 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:
1. Current waveform in μs
2. 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℃ < T_J < +150℃

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■ Typical Characterisitics

Figure 1 - V-I Characteristics

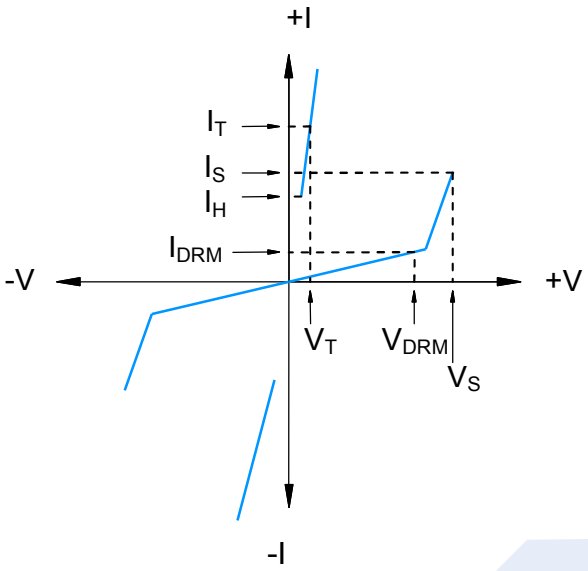

Figure 2 - tr × td Pulse Waveform

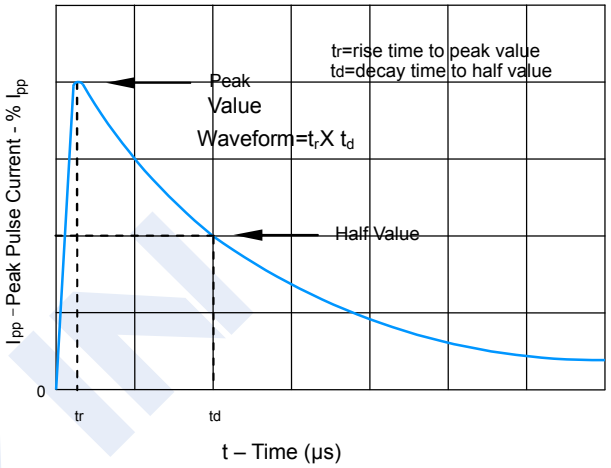

Figure 3 - Normalized VS Change Versus Junction Temperature

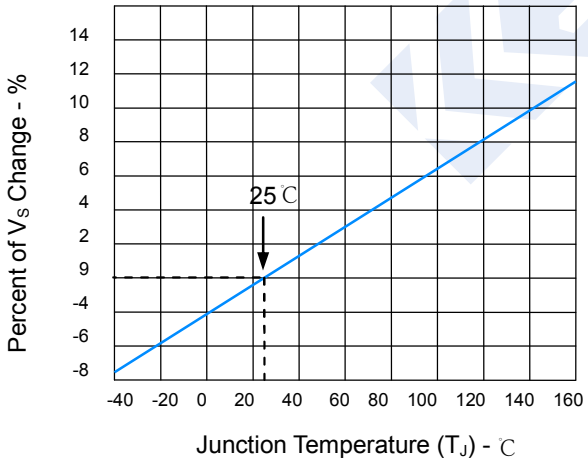

Figure 4 - Normalized DC Holding Current Versus Case Temperature