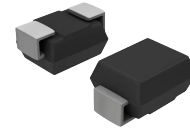


# Over-voltage Protection Thyristor DO-214AA PxxxSx Series

## Description

DO-214AA PxxxxSx series are designed to protect baseband equipment such as modems, line cards, CPE and DSL from damaging overvoltage transients. The PSMB series provides a surface mount solution that enables equipment to comply with global regulatory standards.



DO-214AA/SMB



## Features

- Bi-directional crowbar transient voltage protection
- High surge capability
- High off-state impedance, Low leakage current
- Short-circuit failure mode
- Low on-state voltage



Bi-directional

## Applications

- Central office switching equipment, Analog and digital linecards.
- Customer Premises Equipment (CPE) such as phones, fax machines, modems, POS terminals, PBX systems and caller ID adjunct boxes.
- Primary protection modules including Main Distribution Frames, building entrance equipment and station protection modules.
- Access network equipment such as remote terminals, line repeaters, multiplexers, cross-connects, WAN equipment, Network Interface Devices.
- Data lines and security systems.
- CATV line amplifiers and power inserters.
- Sprinkler systems.

## Electrical Characteristics

Part Number	Marking	$V_{DRM}$ @ $I_{DRM}=5\mu A$ $V_{min}$	$V_{BO}$ @ $100V/\mu s$ $V_{max}$	$I_H$ mA min	$I_{BO}$ mA max	$I_T$ A max	$V_T$ @ $I_T=2.2$ Amps $V_{max}$	Capacitance @1MHz	
								pF min	pF max
P0080SA	P008A	6	25	50	800	2.2	4	25	150
P0300SA	P03A	25	40	50	800	2.2	4	15	140
P0640SA	P06A	58	77	150	800	2.2	4	40	60
P0720SA	P07A	65	88	150	800	2.2	4	35	60
P0900SA	P09A	75	98	150	800	2.2	4	25	55
P1100SA	P11A	90	130	150	800	2.2	4	30	50
P1300SA	P13A	120	160	150	800	2.2	4	25	45
P1500SA	P15A	140	180	150	800	2.2	4	25	40
P1800SA	P18A	170	220	150	800	2.2	4	25	35
P2000SA	P20A	180	240	150	800	2.2	4	20	35
P2300SA	P23A	190	260	150	800	2.2	4	25	35
P2600SA	P26A	220	300	150	800	2.2	4	20	35
P3100SA	P31A	275	350	150	800	2.2	4	20	35
P3500SA	P35A	320	400	150	800	2.2	4	20	35
P4000SA	P40A	360	460	150	800	2.2	4	20	35
P4200SA	P42A	400	540	150	800	2.2	4	20	35

### Electrical Characteristics

Part Number	Marking	$V_{DRM}$ @ $I_{DRM}=5\mu A$ V min	$V_{BO}$ @100V/ $\mu s$ V max	$I_H$ mA min	$I_{BO}$ mA max	$I_T$ A max	$V_T$ @ $I_T=2.2$ Amps V max	Capacitance @1MHz	
								pF min	pF max
P0080SB	P008B	6	25	50	800	2.2	4	25	150
P0300SB	P03B	25	40	50	800	2.2	4	15	140
P0640SB	P06B	58	77	150	800	2.2	4	40	60
P0720SB	P07B	65	88	150	800	2.2	4	35	60
P0900SB	P09B	75	98	150	800	2.2	4	25	55
P1100SB	P11B	90	130	150	800	2.2	4	30	50
P1300SB	P13B	120	160	150	800	2.2	4	25	45
P1500SB	P15B	140	180	150	800	2.2	4	25	40
P1800SB	P18B	170	220	150	800	2.2	4	25	35
P2000SB	P20B	180	240	150	800	2.2	4	20	60
P2300SB	P23B	190	260	150	800	2.2	4	25	35
P2600SB	P26B	220	300	150	800	2.2	4	20	35
P3100SB	P31B	275	350	150	800	2.2	4	20	35
P3500SB	P35B	320	400	150	800	2.2	4	20	35
P4000SB	P40B	360	460	150	800	2.2	4	20	35
P4200SB	P42B	400	540	150	800	2.2	4	20	35
P0080SC	P008C	6	25	150	800	2.2	4	25	150
P0300SC	P03C	25	40	150	800	2.2	4	15	140
P0640SC	P06C	58	77	150	800	2.2	4	40	60
P0720SC	P07C	65	88	150	800	2.2	4	35	60
P0900SC	P09C	75	98	150	800	2.2	4	25	55
P1100SC	P11C	90	130	150	800	2.2	4	30	50
P1300SC	P13C	120	160	150	800	2.2	4	25	45
P1500SC	P15C	140	180	150	800	2.2	4	25	40
P1800SC	P18C	170	220	150	800	2.2	4	25	35
P2000SC	P20C	180	240	150	800	2.2	4	20	35
P2300SC	P23C	190	260	150	800	2.2	4	25	35
P2600SC	P26C	220	300	150	800	2.2	4	20	35
P3100SC	P31C	275	350	150	800	2.2	4	20	35
P3500SC	P35C	320	400	150	800	2.2	4	20	35
P4000SC	P40C	360	460	150	800	2.2	4	20	35
P4200SC	P42C	400	540	150	800	2.2	4	20	40

### Surge Ratings

Series	$I_{PP}$						$I_{TSM}$ 60 Hz A min	di/dt Amps/ $\mu s$ max
	2x10 A min	8x20 A min	10x160 A min	10x560 A min	10x700 A min	10x1000 A min		
A	150	150	90	50	50	45	20	500
B	250	250	150	100	100	80	30	500
C	500	400	200	150	150	100	50	500


Notes:

Peak pulse current rating ( $I_{pp}$ ) is repetitive and guaranteed for the life of the product.

$I_{pp}$  ratings applicable over temperature range of  $-40^{\circ}C$  to  $+85^{\circ}C$

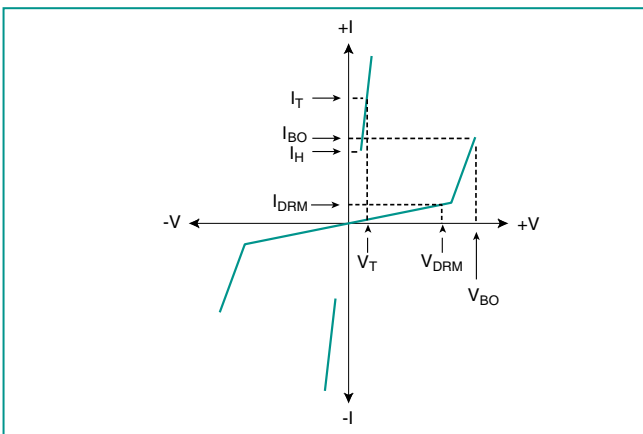
The device must initially be in thermal equilibrium with  $-40^{\circ}C \leq T_j \leq +150^{\circ}C$

## Thermal Considerations

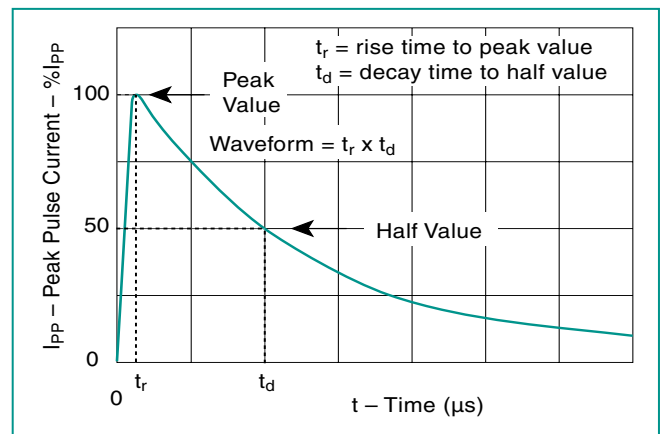
Package	Symbol	Parameter	Value	Unit
 DO-214AA/SMB	$T_J$	Operating Junction Temperature Range	-40 to +150	$^{\circ}\text{C}$
	$T_S$	Storage Temperature Range	-40 to +150	$^{\circ}\text{C}$
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	90	$^{\circ}\text{C}/\text{W}$

## Electrical Characteristics Curves

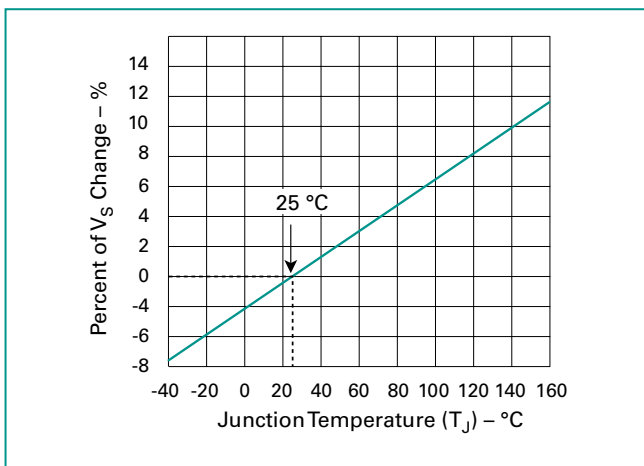
### V-I Characteristics



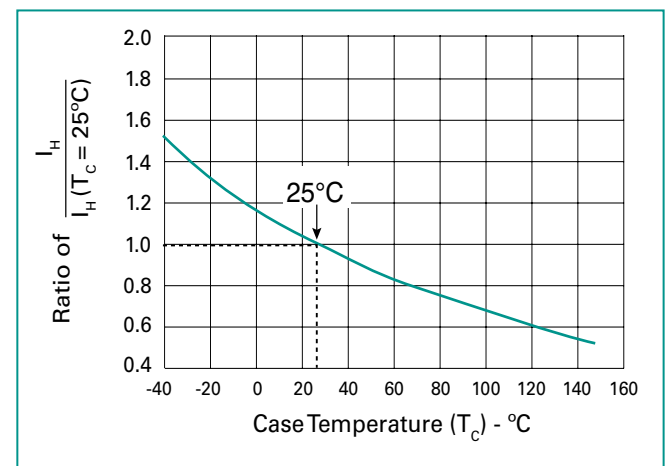
### $t_r \times t_d$ Pulse Waveform



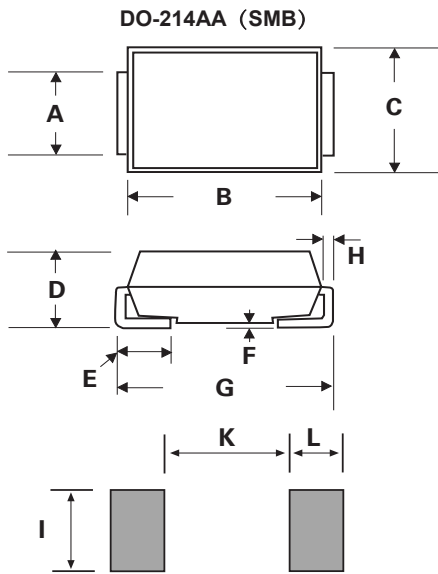
### Normalized $V_{BO}$ Change versus Junction Temperature



### Normalized DC Holding Current versus Case Temperature

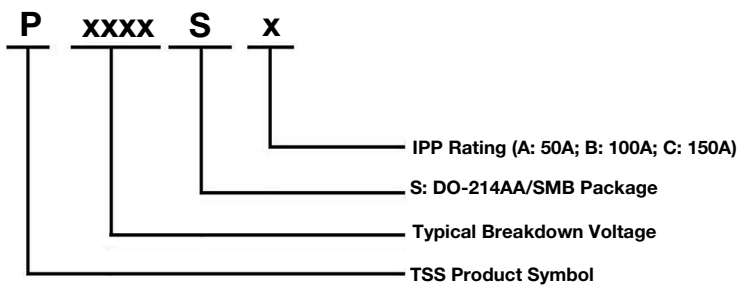


## Dimensions



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.071	0.086	1.800	2.200
B	0.160	0.183	4.050	4.650
C	0.130	0.155	3.300	3.940
D	0.081	0.096	2.050	2.450
E	0.030	0.060	0.760	1.520
F	-	0.008	-	0.203
G	0.200	0.220	5.080	5.590
H	0.006	0.012	0.152	0.305
I	0.089	-	2.260	-
K	-	0.110	-	2.790
L	0.087	-	2.200	-

## Part Numbering System



## Packaging

Series	Description	Quantity	Industry Standard
PxxxxSx Series	DO-214AA	2500	EIA STD RS-481

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