

## Thyristor Surge Suppressors (TSS)

P0080SA - P5000SA Series - DO-214AA(SMB)

@10/700µS, 2KV

### Description

P0080SA - P5000SA Series are designed to protect broadband equipment such as modems, line card, CPE and DSL from damaging over-voltage transients.

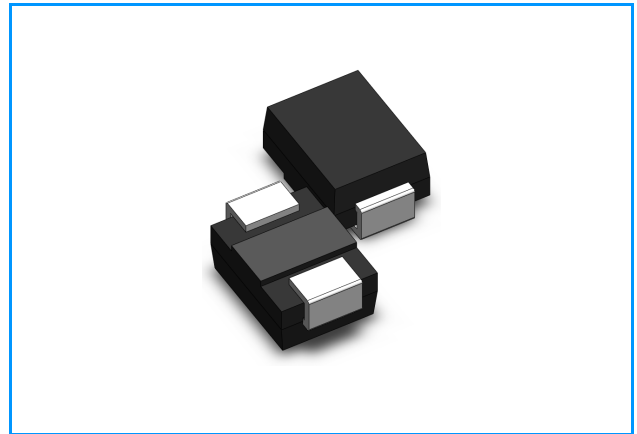
The series provides a surface mount solution that enables equipment to comply with global regulatory standards.

### Features and Benefits

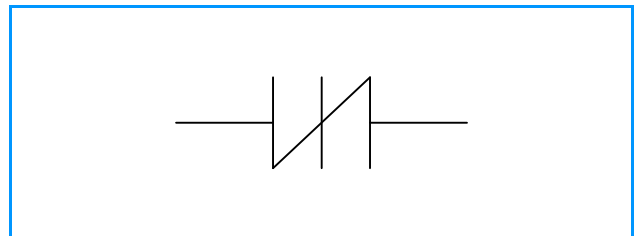
- u Low voltage overshoot
- u Low on-state voltage
- u Does not degrade surge capability after multiple surge events within limit
- u Fails short circuit when surged in excess of ratings
- u Low Capacitance

### Applicable Global Standards

- u TIA-968-A
- u ITU K.20/21 Enhanced level
- u ITU K.20/21 Basic Level
- u GR 1089 Inter building
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- u IEC 6100-4-5
- u YD/T 1082
- u YD/T 993
- u YD/T 950

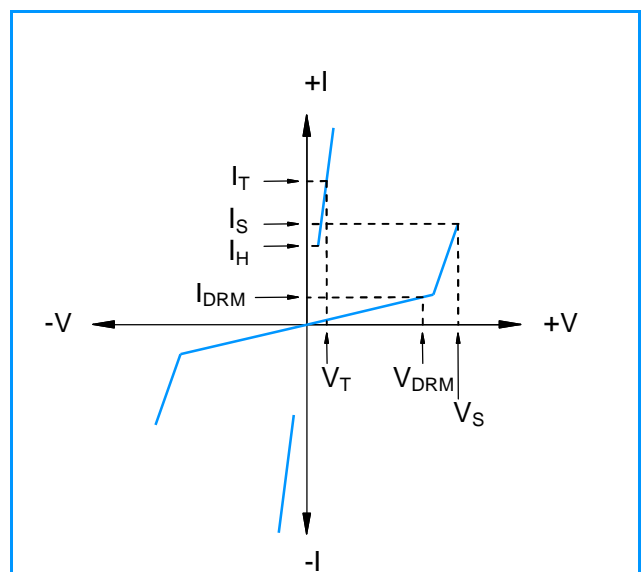


### Schematic Symbol



### 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 stat
$V_{DRM}$	<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



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### Electrical Characteristics

Part Number	Marking	$V_{DRM}$ @ $I_{DRM}=5\mu A$	$V_S$ @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
P0080SA	P008A	6	25	4	800	2.2	50	25	150
P0300SA	P03A	25	40	4	800	2.2	50	15	140
P0640SA	P06A	58	77	4	800	2.2	150	40	60
P0720SA	P07A	65	88	4	800	2.2	150	35	60
P0900SA	P09A	75	98	4	800	2.2	150	25	55
P1100SA	P11A	90	130	4	800	2.2	150	30	50
P1300SA	P13A	120	160	4	800	2.2	150	25	45
P1500SA	P15A	140	180	4	800	2.2	150	25	40
P1800SA	P18A	170	220	4	800	2.2	150	25	35
P2000SA	P20A	180	220	4	800	2.2	150	20	35
P2300SA	P23A	190	260	4	800	2.2	150	25	35
P2600SA	P26A	220	300	4	800	2.2	150	20	35
P3100SA	P31A	275	350	4	800	2.2	150	20	35
P3500SA	P35A	320	400	4	800	2.2	150	20	35
P4000SA	P40A	360	460	4	800	2.2	150	20	35
P4500SA	P45A	400	540	4	800	2.2	150	20	35
P5000SA	P50A	440	600	4	800	2.2	150	20	35

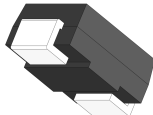
Notes:  
 - Absolute maximum ratings measured at  $T_A=25^\circ C$  (unless otherwise noted).  
 - Devices are bi-directional.

### Surge Ratings

Series	$2/10\mu S^1$	$8/20\mu S^1$	$10/160\mu S^1$	$10/560\mu S^1$	$10/1000\mu S^1$	$5/310\mu S^1$	$I_{RSM}$ 50/60 Hz	di/dt
	$2/10\mu S^2$	$1.2/50\mu S^2$	$10/160\mu S^2$	$10/560\mu S^2$	$10/1000\mu S^2$	$10/700\mu S^2$		
	A min	A min	A min	A min	A min	A min	A min	Amps/µs max
A	150	150	90	50	45	50	20	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  $-40^\circ C$  to  $+85^\circ C$   
 - The device must initially be in thermal equilibrium with  $-40^\circ C < T_J < +150^\circ C$

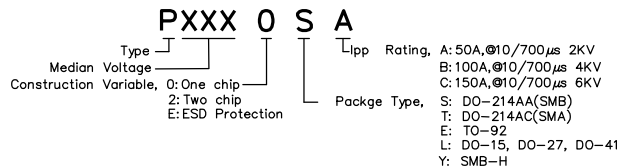
### Thermal Considerations

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

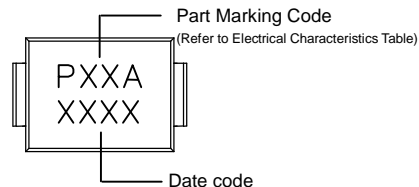
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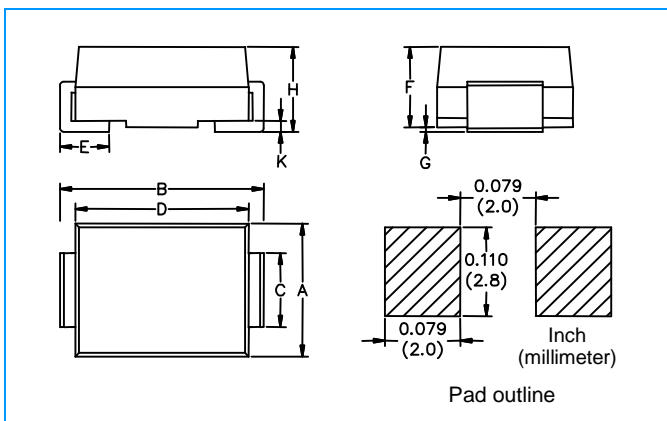
## Part Numbering



## Part Marking



## Dimensions DO-214AA



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.130	0.156	3.30	3.95
B	0.201	0.220	5.10	5.60
C	0.077	0.087	1.95	2.20
D	0.159	0.181	4.05	4.60
E	0.030	0.063	0.76	1.60
F	0.076	0.096	1.90	2.45
G	0.002	0.008	0.05	0.20
H	0.077	0.104	1.95	2.65
K	0.006	0.016	0.15	0.41

## Packaging

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
Pxxx0SA	DO-214AA	2500	Tape & Reel -12mm/13"tape	EIA -481 - D

## Tape and Reel Specifications

