

## Thyristor Surge Suppressors

### Description

Package: DO-214AA

Pxxx0SA,PXXX0SB,PXXX0SC Series Thyristor Surge Suppressors protect telecommunications equipment such as ADSL Modems,Router, , Telephone, CCTV Camera,Digital Video Record,Video Capture Card,Twisted-pair video transmitter,CATV Splitter.....Etc.

Pxxx0SA,PXXX0SB,PXXX0SC Series Thyristor Surge Suppressors are used to enable equipment to meet various regulatory requirements including GR 1089, ITU K.20/21,IEC 61000-4-5, YD/T 1082,YD/T 993,YD/T 950,TIA-968-A ,TIA-968-B



Agency recognition:



### Features

Compared to surge suppression using other technologies, Pxxx0SA,PXXX0SB,PXXX0SC Series devices offer absolute surge protection regardless of the surge current available and the rate of applied voltage (dv/dt). Pxxx0SA,PXXX0SB,PXXX0SC Series devices:

- Cannot be damaged by voltage
- Eliminate hysteresis and heat dissipation typically found with clamping devices
- Eliminate voltage overshoot caused by fast-rising transients
- Are non-degenerative
- Have low capacitance, making them ideal for high-speed transmission equipment

### Electrical Characteristics

Parameter	Definition
$V_{DRM}$	<b>Peak Off-state Voltage</b> — maximum voltage that can be applied while maintaining off state
$V_S$	<b>Switching Voltage</b> — maximum voltage prior to switching to on state
$I_H$	<b>Holding Current</b> — minimum current required to maintain on state
$I_S$	<b>Switching Current</b> — maximum current required to switch to on state
$I_T$	<b>On-state Current</b> — maximum rated continuous on-state current
$V_T$	<b>On-state Voltage</b> — maximum voltage measured at rated on-state current
Capacitance	<b>Off-state Capacitance</b> — typical capacitance measured in off state
$I_{DRM}$	<b>Leakage Current</b> — maximum peak off-state current measured at $V_{DRM}$
$I_{PP}$	<b>Peak Pulse Current</b> — maximum rated peak impulse current
$I_{TSM}$	<b>Peak One-cycle Surge Current</b> — maximum rated one-cycle AC current
di/dt	<b>Rate of Rise of Current</b> — maximum rated value of the acceptable rate of rise in current over time

Electrical Characteristics

Part Number	Marking	V <sub>DRM</sub>	V <sub>s</sub>	I <sub>H</sub>	I <sub>s</sub>	I <sub>T</sub>	Capacitance	Safety	Delivery Time	
		@I <sub>DRM</sub> =5 μA	@100V/μs	Min	Max	Max	@1MHz,2V bias	Certification	in stock	Produce
		V <sub>min</sub>	V <sub>max</sub>	mA	mA	A	pF	UL		
P0080SA	P008A	6	25	50	800	2.2	45	√	4days	7days
P0300SA	P03A	25	40	50	800	2.2	45	√	4days	7days
P0640SA	P06A	58	77	150	800	2.2	35	√	4days	7days
P0720SA	P07A	65	88	150	800	2.2	50	√	4days	20days
P0900SA	P09A	75	98	150	800	2.2	40	√	4days	20days
P1100SA	P11A	90	130	150	800	2.2	35	√	4days	30days
P1300SA	P13A	120	160	150	800	2.2	35	√	1day	12days
P1500SA	P15A	140	180	150	800	2.2	40	√	-	-
P1800SA	P18A	170	220	150	800	2.2	40	√	4days	15days
P2100SA	P21A	180	240	150	800	2.2	40	-	-	-
P2300SA	P23A	190	260	150	800	2.2	45	√	4days	7days
P2600SA	P26A	220	300	150	800	2.2	35	√	4days	15days
P3100SA	P31A	275	350	150	800	2.2	35	√	4days	7days
P3500SA	P35A	320	400	150	800	2.2	30	√	4days	7days
P0080SB	P008B	6	25	50	800	2.2	60	√	1day	4days
P0300SB	P03B	25	40	50	800	2.2	65	√	4days	4days
P0640SB	P06B	58	77	150	800	2.2	45	√	4days	4days
P0720SB	P07B	65	88	150	800	2.2	45	√	4days	20days
P0900SB	P09B	75	98	150	800	2.2	40	√	4days	20days
P1100SB	P11B	90	130	150	800	2.2	40	√	-	-
P1300SB	P13B	120	160	150	800	2.2	40	√	4days	15days
P1500SB	P15B	140	180	150	800	2.2	35	√	4days	25days
P1800SB	P18B	170	220	150	800	2.2	65	√	-	-
P2100SB	P21B	180	240	150	800	2.2	60	-	-	-

Electrical Characteristics

continued

Part Number	Marking	V <sub>DRM</sub>	V <sub>s</sub>	I <sub>H</sub>	I <sub>S</sub>	I <sub>T</sub>	Capacitance	Safety	Delivery Time	
		@I <sub>DRM</sub> =5 μ A	@100V/μs	Min	Max	Max	@1MHz,2V bias	Certification	in stock	Produce
		V <sub>min</sub>	V <sub>max</sub>	mA	mA	A	pF	UL		
P2300SB	P23B	190	260	150	800	2.2	50	√	4days	4days
P2600SB	P26B	220	300	150	800	2.2	45	√	4days	7days
P3100SB	P31B	275	350	150	800	2.2	45	√	4days	4days
P3500SB	P35B	320	400	150	800	2.2	40	√	4days	4days
P0080SC	P008C	6	25	50	800	2.2	75	√	4days	4days
P0300SC	P03C	25	40	50	800	2.2	75	√	4days	4days
P0640SC	P06C	58	77	150	800	2.2	55	√	4days	4days
P0720SC	P07C	65	88	150	800	2.2	60	√	4days	15days
P0900SC	P09C	75	98	150	800	2.2	65	√	4days	20days
P1100SC	P11C	90	130	150	800	2.2	55	√	---	---
P1300SC	P13C	120	160	150	800	2.2	60	√	---	---
P1500SC	P15C	140	180	150	800	2.2	50	√	4days	4days
P1800SC	P18C	170	220	150	800	2.2	55	√	---	---
P2100SC	P21C	180	240	150	800	2.2	85	-	---	---
P2300SC	P23C	190	260	150	800	2.2	65	√	4days	4days
P2600SC	P26C	220	300	150	800	2.2	65	√	4days	12days
P3100SC	P31C	275	350	150	800	2.2	55	√	4days	4days
P3500SC	P35C	320	400	150	800	2.2	50	√	4days	4days
P4500SC	P45C	400	540	150	800	2.2	45	-	4days	12days

Notes:

-All measurements are made at an ambient temperature of 25°C .Ipp applies to -40°C through +85°C temperature range .


-Off-state capacitance(Co) is typical value.

\*For surge ratings,see next page.

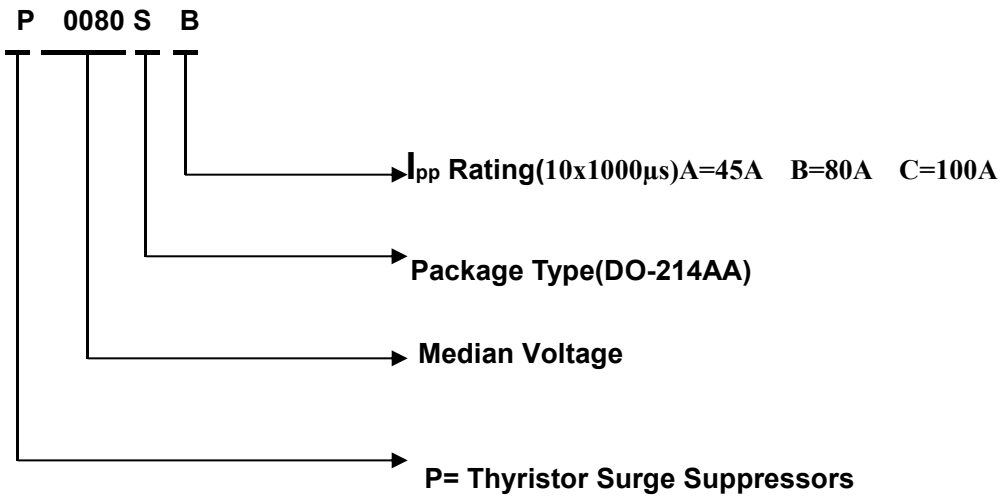
## Surge Ratings

Series	$I_{pp}$ 2x10 $\mu$ s	$I_{pp}$ 8x20 $\mu$ s	$I_{pp}$ 10x160 $\mu$ s	$I_{pp}$ 10x560 $\mu$ s	$I_{pp}$ 10x1000 $\mu$ s	$I_{pp}$ 5x320 $\mu$ s	$I_{pp}$ 5x310 $\mu$ s	$I_{pp}$ 10x360 $\mu$ s	$I_{TSM}$ 50/60Hz	di/dt
	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps/ $\mu$ s
A	150	150	90	50	45	75	75	75	20	500
B	250	250	150	100	80	100	100	125	25	500
C	500	400	200	150	100	200	200	175	30	500

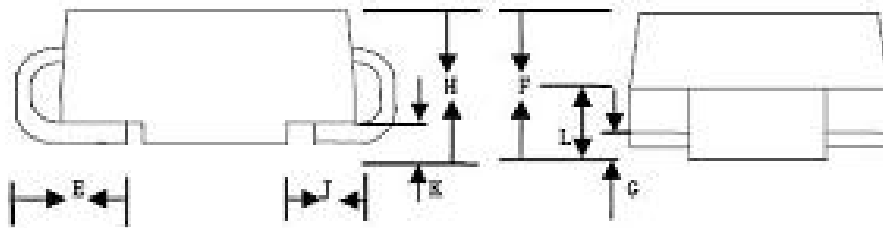
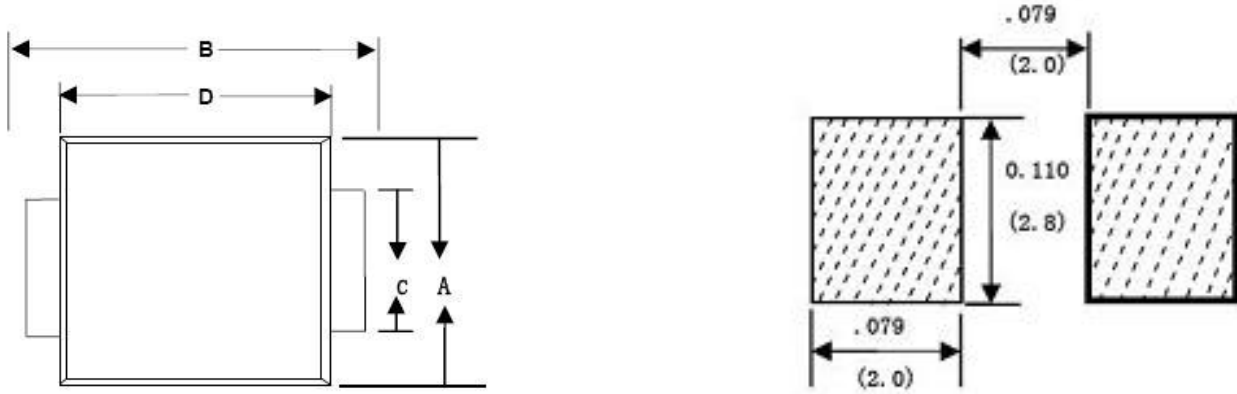
## Thermal Considerations

Package	DO-214AA/SMB	Symbol	Parameter	Value	Unit
		$T_J$	Operating Junction Temperature Range	-40 to +150	$^{\circ}$ C
		$T_S$	Storage Temperature Range	-65 to +150	$^{\circ}$ C
		$R_{\theta JA}$	Junction to Ambient on printed circuit	90	$^{\circ}$ C /W

## Description of Part Number



Dimensions - DO-214AA



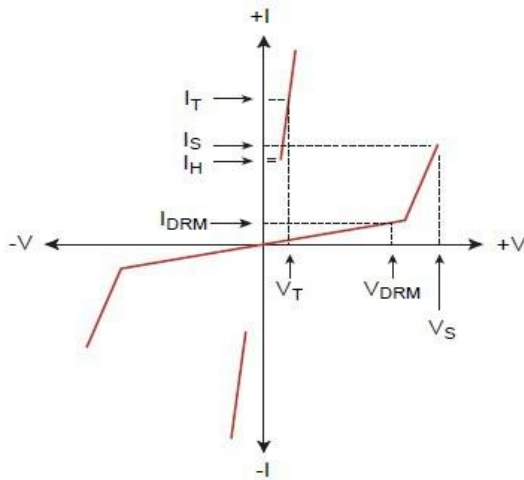
Dimension	Inches		Millimeters	
	Min	Max	Min	Max
A	0.134	0.155	3.40	3.94
B	0.205	0.22	5.21	5.59
C	0.075	0.083	1.90	2.11
D	0.166	0.185	4.22	4.70
E	0.036	0.056	0.91	1.42
F	0.073	0.087	1.85	2.2
G	0.002	0.008	0.05	0.20
H	0.077	0.094	1.95	2.40
J	0.043	0.053	1.09	1.35
K	0.008	0.014	0.20	0.35
L	0.039	0.049	0.99	1.24

## Packing Options

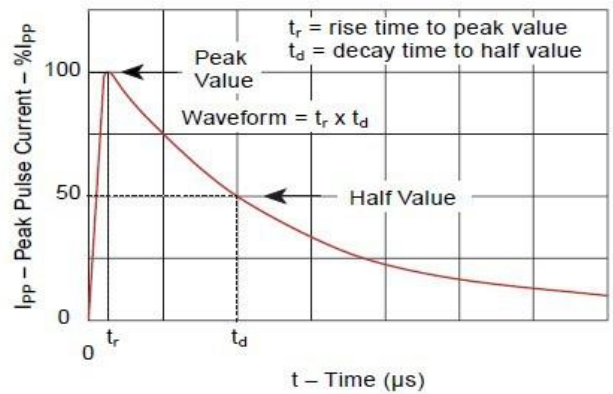
Package Type	Description	Packing Quantity	Industry Standard
S	DO-214AA Reel Pack	2500 PCS	EIA-481-D

## Characteristics Curve

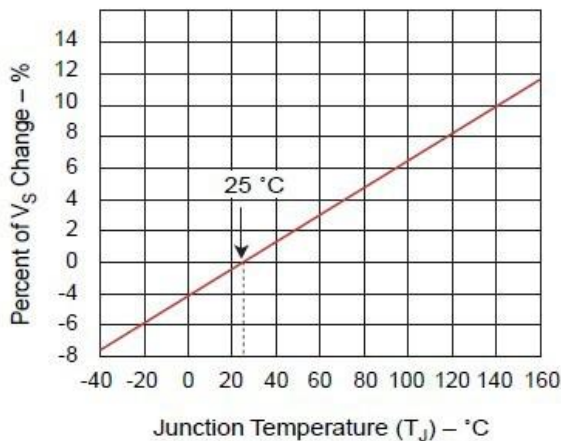
### V-I Characteristics



### Tr x Td Pulse Waveform



### Normalized Vs Change Versus Junction Temperature



### Normalized DC Holding Current Versus Case Temperature

