

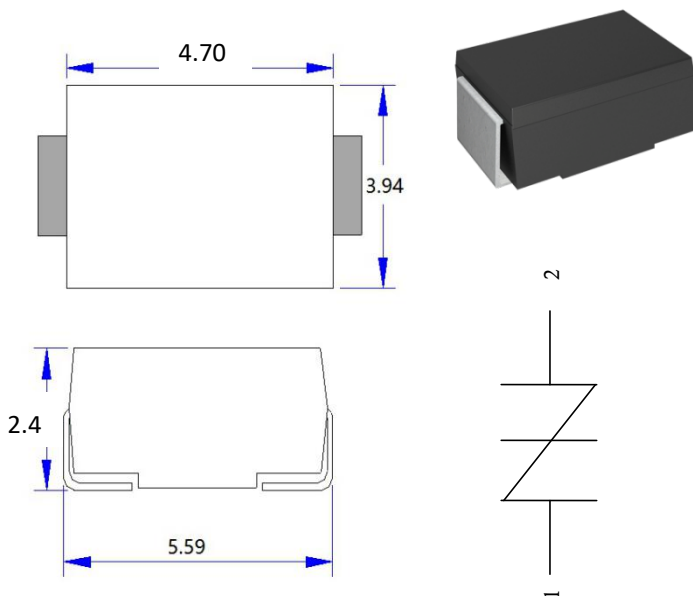
## Description

PxxxxSC series thyristors are a type of semi-conduct component. They are designed in applications, modems, telephones, line cards, answering machines, FAX machines, SLICs, T1/E1, xDSL, PBXs and more.

## Features

- For surface mounted applications to optimize board space
- Low profile package
- Bidirectional crowbar protection
- Low leakage current : I = 5uA max
- Low on-state voltage
- Low Capacitance
- Solid-state silicon technology
  - Eliminates overvoltage caused by fast rising transients

## Dimensions & Symbol (Unit: mm Max)



## Mechanical Characteristics

### Package: SMB/DO-214AA

- Case Material: "Green" Molding Compound.
- Standard Packaging: 12mm tape (EIA STD RS-481)
- Weight: 0.10g
- Terminal Connections: See Diagram Below
- Marking Information: See Below

## Applications Standards

TIA-968-A/B  
ITU K.20/21 Enhanced Level\*  
ITU K.20/21 Basic Level\*  
GR 1089 Inter-building\*  
GR 1089 Intra-building  
IEC 61000-4-5 2nd edition  
YD/T 1082 YD/T 993 YD/T 950

## Marking Information



Details marking code reference customer approval list

## Ordering Information

Outline	Reel (pcs)	Per carton (pcs)	Reel diameters (mm)
Taping	3K	48K	330

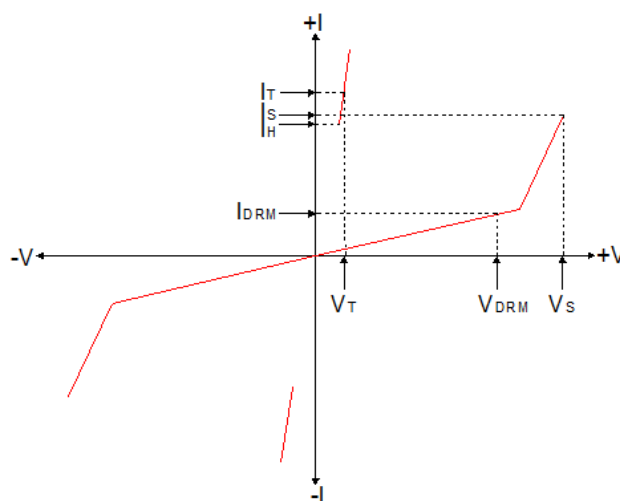
**Absolute Maximum Ratings** ( $T_A=25^{\circ}\text{C}$ , RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	$T_{\text{stg}}$	-60 to +150	$^{\circ}\text{C}$
Operating junction temperature range	$T_j$	-40 to +150	$^{\circ}\text{C}$
Repetitive peak pulse current	$I_{\text{PP}}$	80	A

**Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$ )

Symbol	Parameter
$V_{\text{DRM}}$	Peak off-state voltage
$I_{\text{DRM}}$	Off-state current
$V_S$	Switching voltage
$I_S$	Switching current
$V_T$	On-state voltage
$I_T$	On-state current
$I_H$	Holding current
$C_O$	Off-state capacitance

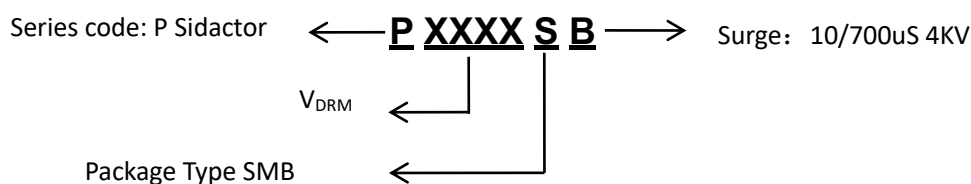
V-I Curve



**Surge Ratings**

Series	$I_{\text{PP}}$ (A) min			
	2×10us	8×20us	10×360us	10×1000us
B	250	250	125	80

**Part Number Code**



**Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$ .)

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_s^{①}@I_s$		$V_T@I_T$		$I_H$	$C_o^{②}$
	$\mu\text{A}$	V	V	mA	V	A	mA	pF
	max	min	max	max	max	max	min	max
P0080SB	5	6	25	800	4	2.2	50	75
P0300SB	5	25	40	800	4	2.2	50	75
P0640SB	5	58	77	800	4	2.2	120	65
P0720SB	5	65	88	800	4	2.2	120	65
P0900SB	5	75	98	800	4	2.2	120	60
P1100SB	5	90	130	800	4	2.2	120	60
P1300SB	5	120	160	800	4	2.2	120	60
P1500SB	5	140	180	800	4	2.2	120	60
P1800SB	5	170	220	800	4	2.2	120	60
P2000SB	5	180	220	800	4	2.2	120	60
P2300SB	5	190	260	800	4	2.2	120	55
P2600SB	5	220	300	800	4	2.2	120	50
P3100SB	5	275	350	800	4	2.2	120	40
P3500SB	5	320	400	800	4	2.2	120	40
P3800SB	5	360	460	800	4	2.2	120	35
P4200SB	5	400	540	800	4	2.2	120	35

①  $V_s$  is measured at 100KV/s

② Off-state capacitance is measured in  $V_{\text{DC}}=2\text{V}$ ,  $V_{\text{RMS}}=1\text{V}$ ,  $f=1\text{MHz}$

**Ratings and V-I characteristics curves** ( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Figure 1 Normalized  $V_s$  Change vs Junction Temp

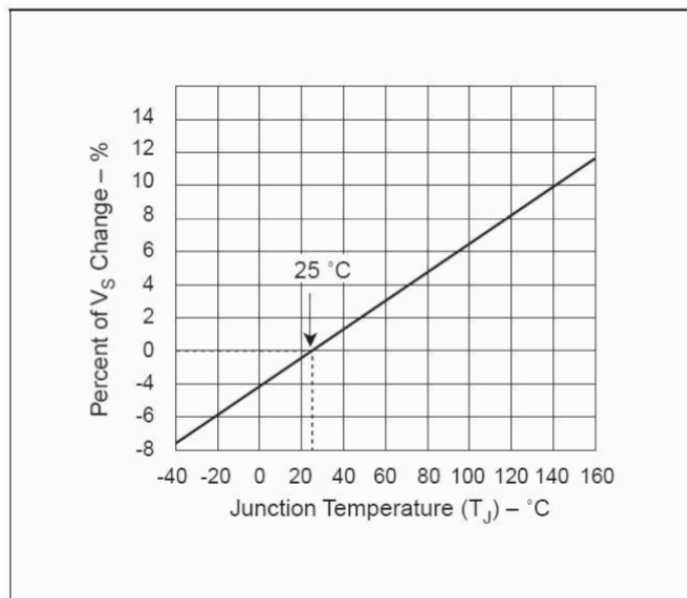
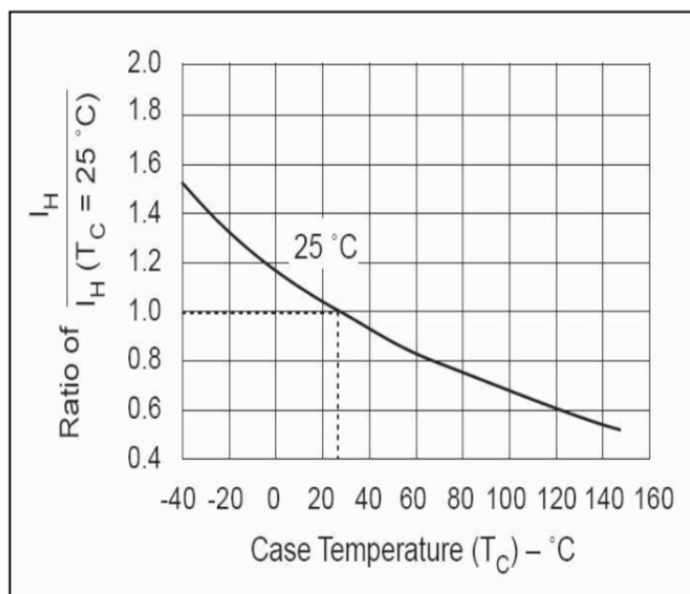
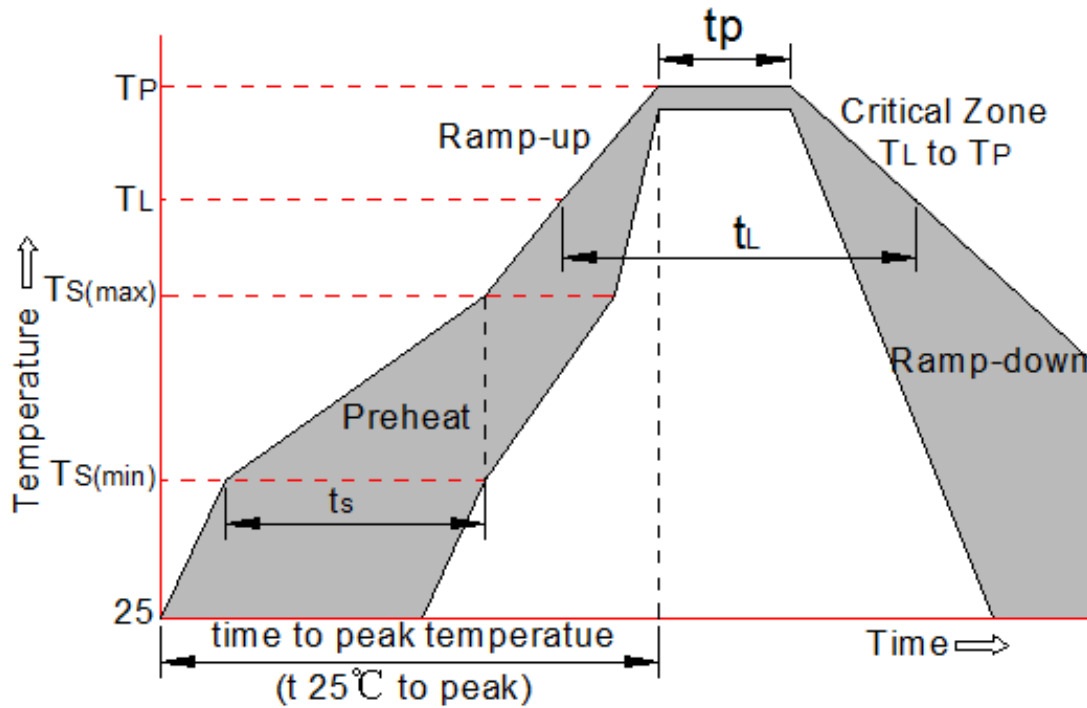


Figure 2 Normalized DC Holding Current



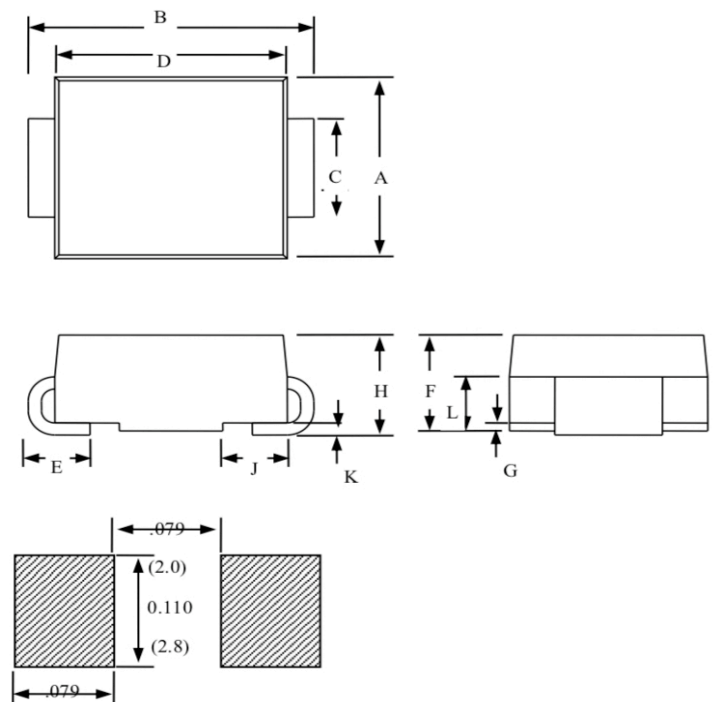
**Soldering Parameters**

Reflow Condition		Pb-Free assembly
Pre Heat	-Temperature Min ( $T_{s(\text{min})}$ )	+150 $^{\circ}\text{C}$
	-Temperature Max ( $T_{s(\text{max})}$ )	+200 $^{\circ}\text{C}$
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3 $^{\circ}\text{C}/\text{sec}$ . Max
$T_{s(\text{max})}$ to $T_L$ - Ramp-up Rate		3 $^{\circ}\text{C}/\text{sec}$ . Max
Reflow	-Temperature ( $T_L$ ) (Liquid us)	+217 $^{\circ}\text{C}$
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5) $^{\circ}\text{C}$
Time within 5 $^{\circ}\text{C}$ of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6 $^{\circ}\text{C}/\text{sec}$ . Max
Time 25 $^{\circ}\text{C}$ to Peak Temp ( $T_p$ )		8 min. Max
Do not exceed		+260 $^{\circ}\text{C}$

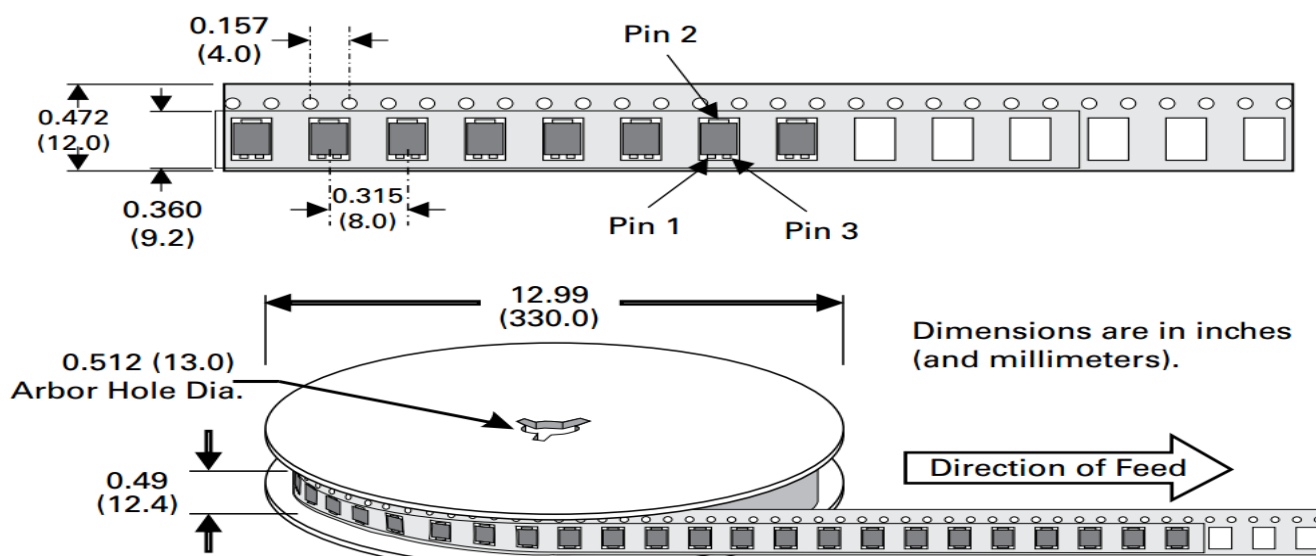


**Package Mechanical Data**

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



### Tape & Reel Specification – SMB



### Contact Information

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