

PXXXSBL Series TSS

Description

PXXXSBL series thyristors are a type of semiconductor component. They are designed in applications, such as modems, telephones, line cards, answering machines, FAX machines, SLICs, T1/E1, xDSL, PBXs and more.

Features

- Case: DO-214AA(SMB)
- Excellent capability of absorbing transient surge
- Quick response to surge voltage (ns Level)
- Eliminates overvoltage caused by fast rising transients
- Moisture sensitivity level: Level 1
- Fails short circuit when surged in excess of ratings
- Non degenerative
- IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact).

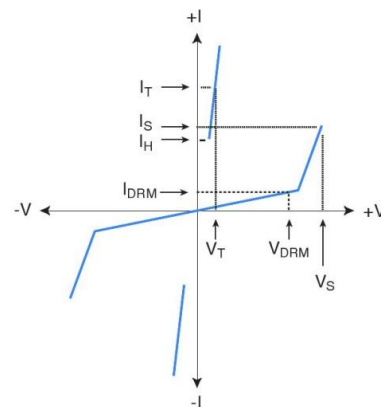


Functional Diagram



Electrical Parameters

Parameter	Definition
V_{DRM}	Peak Off-state Voltage – maximum voltage that can be applied while maintaining off state
V_{S}	Switching Voltage – maximum voltage prior to switching to on state
V_{T}	On-state Voltage – maximum voltage measured at rated on-state current
I_{DRM}	Leakage Current – maximum peak off-state current measured at V_{DRM}
I_{S}	Switching Current – maximum current required to switch to on state
I_{T}	On-state Current – maximum rated continuous on-state current
I_{H}	Holding Current – minimum current required to maintain on state
C_{O}	Off-state Capacitance – typical capacitance measured in off state
I_{PP}	Peak Pulse Current – maximum rated peak impulse current



Thermal Considerations

Parameter	Symbol	Value	Unit
Operating Temperature	T_{J}	-40 to +125	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-60 to +150	$^{\circ}\text{C}$
Junction to free air thermal resistance	$R_{\theta\text{JA}}$	120	$^{\circ}\text{C/W}$

Characteristics (T = 25°C unless otherwise noted)

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{S}}@I_{\text{S}}$		$V_{\text{T}}@I_{\text{T}}$		I_{H}	$C_{\text{O}}^{(2)}$
	μA	V	V	mA	V	A	mA	pF
	MAX.		MAX.	MAX.	MAX.	MAX.	MIN.	MAX.
P0080SBL	1	6	15	800	4	2.2	30	35
P0220SBL	1	18	30	800	4	2.2	25	80
P0300SBL	1	25	40	800	4	2.2	25	80
P0640SBL	1	58	77	800	4	2.2	120	40
P0720SBL	1	65	87	800	4	2.2	120	40
P0900SBL	1	75	98	800	4	2.2	120	40
P1100SBL	1	90	130	800	4	2.2	120	40
P1300SBL	1	120	160	800	4	2.2	120	40

P1500SBL	1	140	180	800	4	2.2	120	35
P1800SBL	1	170	220	800	4	2.2	120	35
P2300SBL	1	190	260	800	4	2.2	120	35
P2600SBL	1	220	300	800	4	2.2	120	30
P3100SBL	1	275	350	800	4	2.2	120	30
P3500SBL	1	320	400	800	4	2.2	120	25
P3800SBL	1	340	450	800	4	2.2	120	25

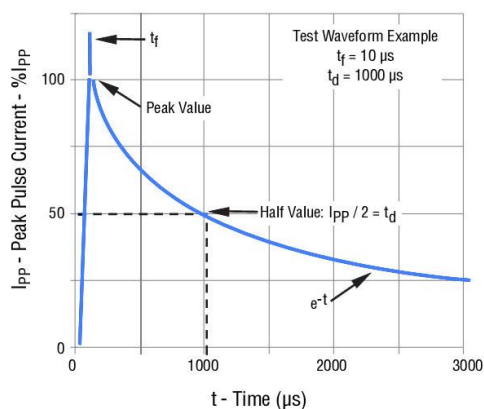
①Vs is measured at 100KV/s

②Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

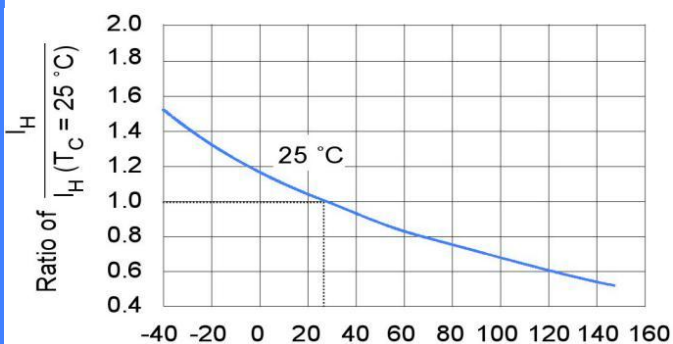
Surge Ratings

Ipp 2/10μS Amps	Ipp 8/20μS Amps	Ipp 10/160μS Amps	Ipp 10/560μS Amps	Ipp 10/1000μS Amps	ITSM 60HZ Amps	Di/Dt Amps /μS
250	250	150	100	80	30	500

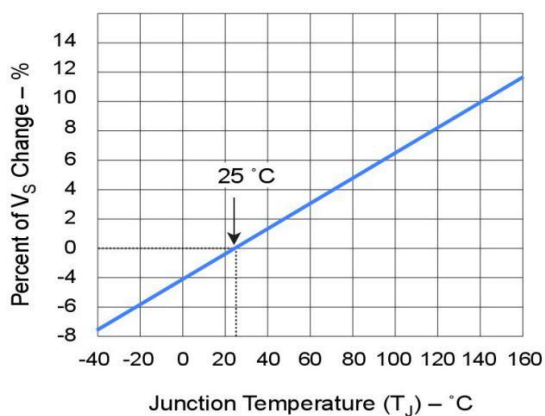
Rating & Characteristic Curves



1. PEAK PULSE CURVE

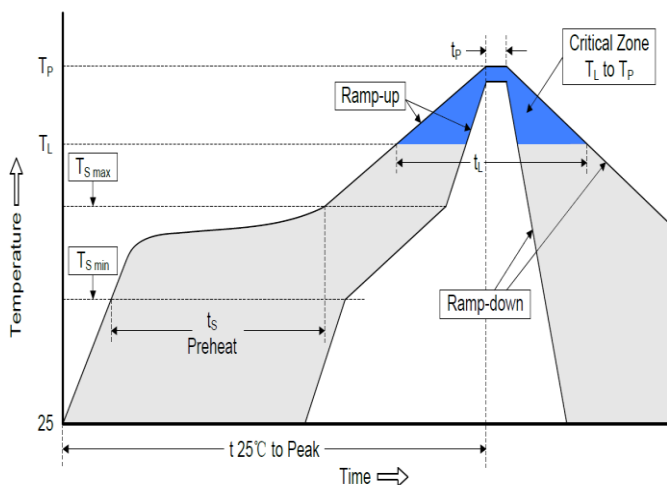


2. Normalized DC Holding Current versus Case Temperature



3. Normalized vs change versus Junction Temp

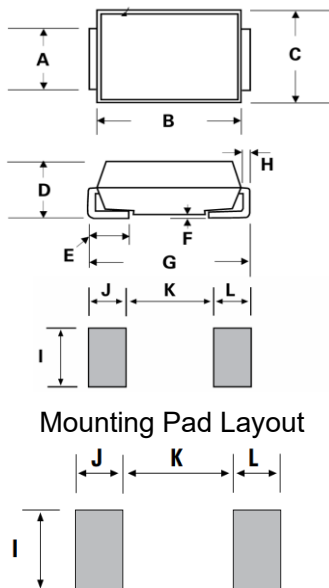
Soldering parameters



Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max)(t_s)	150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C /second max.
Time 25°C to Peak Temperature	8 minutes max.

Package outline dimensions in millimeters

DO-214AA (SMB J-Bend)



Dimensions	Millimeter	
	Min	Max
A	1.930	2.200
B	4.060	4.750
C	3.300	3.940
D	1.990	2.610
E	0.760	1.520
F	-	0.203
G	5.210	5.590
H	0.152	0.305
I	2.260	-
J	2.160	-
K	-	2.740
L	2.160	-

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.