PXXXSCL Series TSS

Description

PXXXSCL 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.

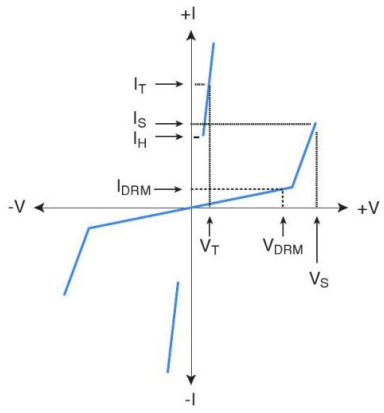
Features

- 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) ±30kV (air), ±30kV (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 VDRM
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	°C
Storage Temperature	T_{STG}	-60 to +150	°C
Junction to free air thermal resistance	$R_{\Theta JA}$	120	°C/ W

Characteristics (T =25°C unless otherwise noted)

Part Number	I_{DRM}@V_{DRM}		V_S①@I_S		V_T@I_T		I_H	C_O②
	μA	V	V	mA	V	A	mA	pF
	MAX.		MAX.	MAX.	MAX.	MAX.	MIN.	MAX.
P0080SCL	1	6	15	800	4	2.2	30	60
P0220SCL	1	18	30	800	4	2.2	30	120
P0300SCL	1	25	40	800	4	2.2	30	60
P0640SCL	1	58	77	800	4	2.2	120	60
P0720SCL	1	65	87	800	4	2.2	120	60
P0900SCL	1	75	98	800	4	2.2	120	60
P1100SCL	1	90	130	800	4	2.2	120	50
P1300SCL	1	120	160	800	4	2.2	120	50

P1500SCL	1	140	180	800	4	2.2	120	50
P1800SCL	1	170	220	800	4	2.2	120	50
P2300SCL	1	190	260	800	4	2.2	120	45
P2600SCL	1	220	300	800	4	2.2	120	45
P3100SCL	1	275	350	800	4	2.2	120	40
P3500SCL	1	320	400	800	4	2.2	120	40
P3800SCL	1	340	450	800	4	2.2	120	40

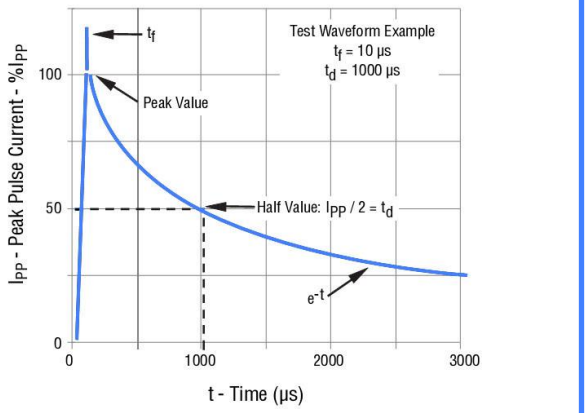
①Vs is measured at 100KV/s

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

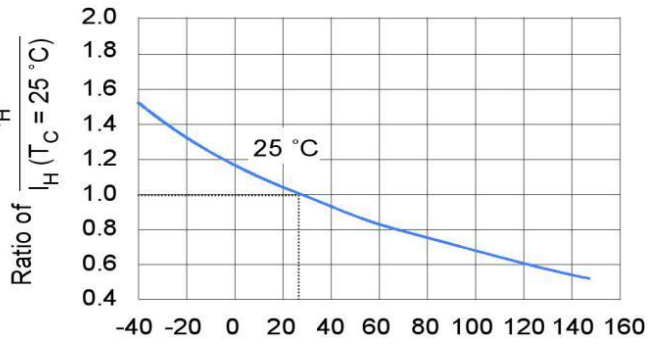
Surge Ratings

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
500	400	200	150	100	50	500

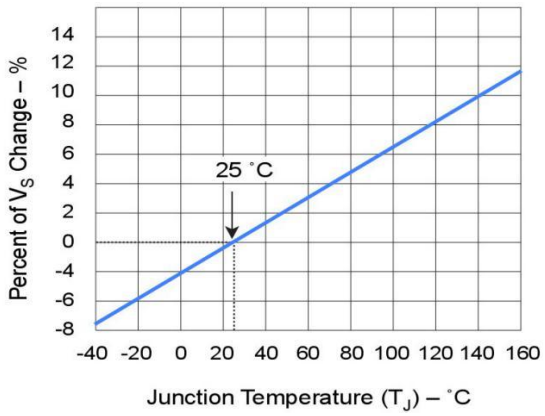
Rating & Characteristic Curves



1. PEAK PULSE CURVE

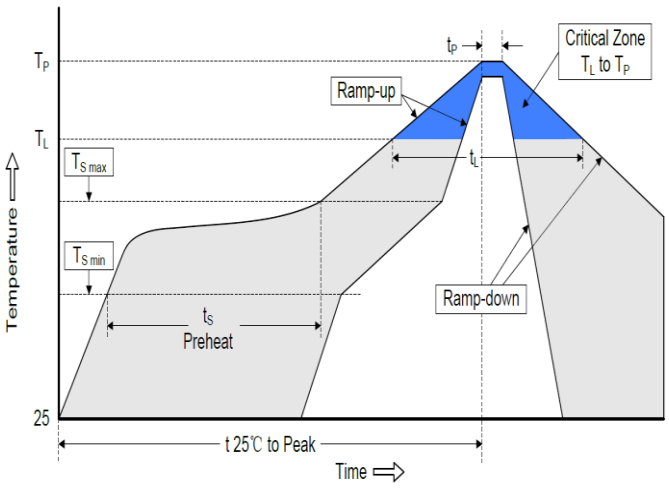


2. Normalized DC Holding Current versus Case Temperature



3. Normalized vs chang versus Junction Temp

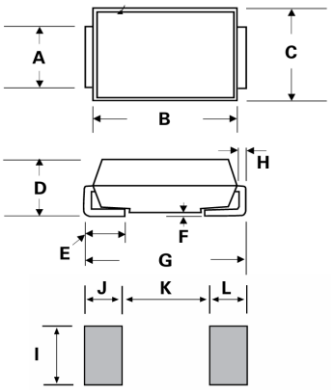
Soldering parameters



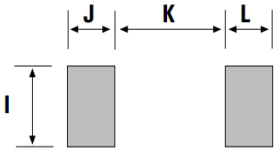
Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max)(t_S)	 150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3°C/second max.
Time maintained above: - Temperature (T_L) - 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)



Mounting Pad Layout



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.