

Thyristors surge protection device

Description

TSS Series are designed to protect baseband equipment such as modems, line cards, CPE and DSL equipments from damaging overvoltage transients. The series provide a robust peak surge current capability which enables equipments to comply with global regulatory standards.

Features

- Low voltage overshoot
- Low on-state voltage
- Low capacitance
- Low leakage current
- High reliability
- Quick response to surge voltage (ns Level)
- Does not degrade in capability after multiple surge events within limit.
- Low capacitance
- Fails short circuit when surged in excess of ratings

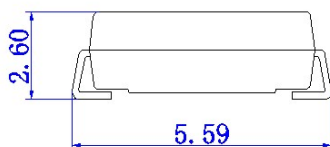
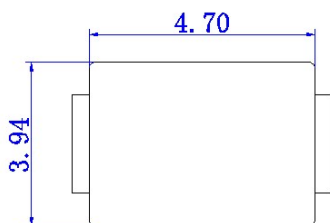
Applications

- Audio/Video line
- Network and telecom
- Data lines and security systems
- Serial ports

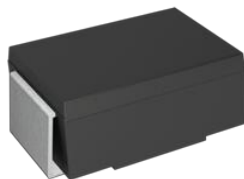
Mechanical Characteristics

- Package: SMB/DO-214AA
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 .RoHS compliant
- Moisture Sensitivity: Meet MSL 1
- Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode except bi-directional models
- Weight: 0.09g(approximate)

Dimensions & Symbol (Unit: mm Max)



Bi-directional



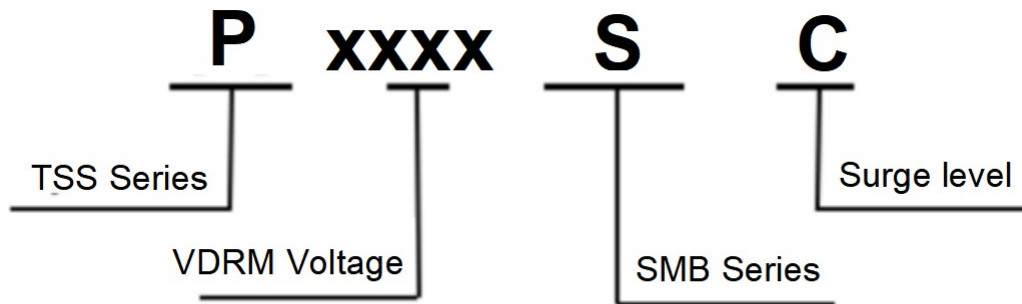
Electrical Characteristics (T=25°C)

Part Number	Marking Code	I _{DRM} @V _{DRM}		V _s @I _s		V _T @ I _T		I _H	C _o
		μA	V	V	mA	V	A	mA	pF
		max	min	max	max	max	max	min	max
P0080SC	P008C	5	6	25	800	4	2.2	50	100
P0150SC	P01C	5	14	20	800	4	2.2	50	100
P0220SC	P02C	5	18	30	800	4	2.2	50	100
P0300SC	P03C	5	25	40	800	4	2.2	50	100
P0640SC	P06C	5	58	77	800	4	2.2	100	80
P0720SC	P07C	5	65	88	800	4	2.2	100	75
P0900SC	P09C	5	75	98	800	4	2.2	100	70
P1100SC	P11C	5	90	130	800	4	2.2	100	70
P1300SC	P13C	5	120	160	800	4	2.2	100	70
P1500SC	P15C	5	140	180	800	4	2.2	100	70
P1800SC	P18C	5	170	220	800	4	2.2	100	70
P2000SC	P20C	5	180	220	800	4	2.2	100	70
P2300SC	P23C	5	190	260	800	4	2.2	100	70
P2600SC	P26C	5	220	300	800	4	2.2	100	70
P3100SC	P31C	5	275	350	800	4	2.2	100	60
P3500SC	P35C	5	320	400	800	4	2.2	100	60
P4000SC	P40C	5	360	460	800	4	2.2	100	80
P4200SC	P42C	5	400	540	800	4	2.2	100	80

Notes:

- All measurements are made at an ambient temperature of 25°C. I_{PP} applies to -40°C through +85°C temperature
- Off-state capacitance (C_o) is measured at 1 MHz with a 2 V bias and is typical val

Part number code



Absolute Maximum Ratings (T=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating junction temperature range	T _j	-40 to +125	°C
Storage temperature range	T _{stg}	-65 to +150	°C
Repetitive peak pulse Voltage(10/700uS)	V _{PP}	6000	V

Typical Characteristics

FIG1: V-I cure characteristics

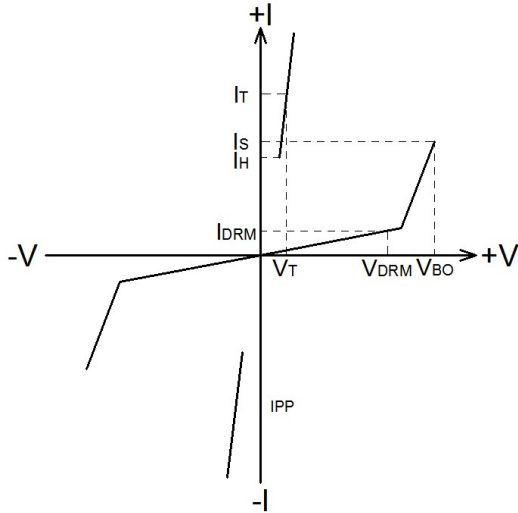


FIG2: Pulse Waveform

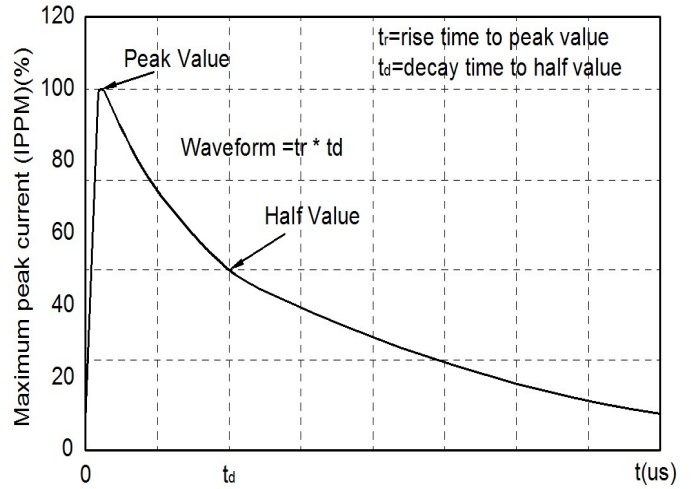


FIG3: Normalized V_s change vs.junction temperature

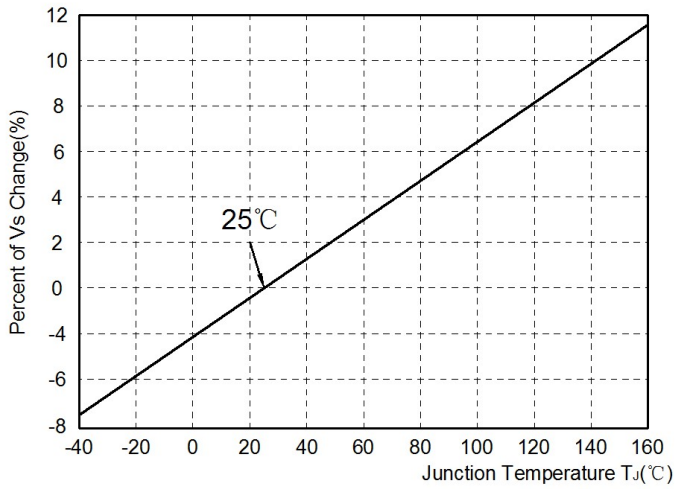
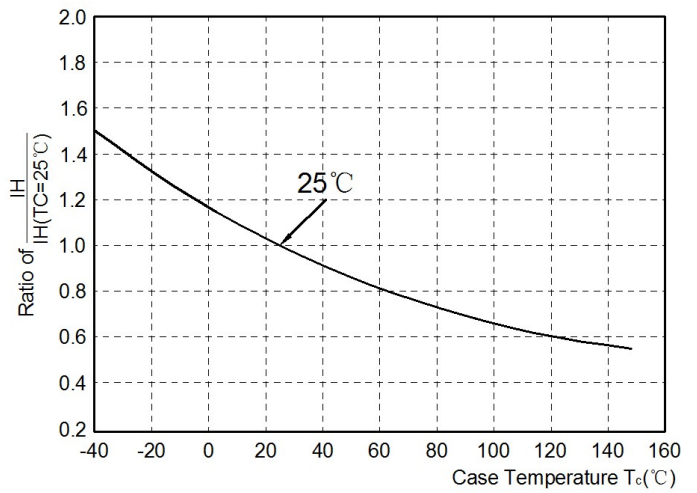
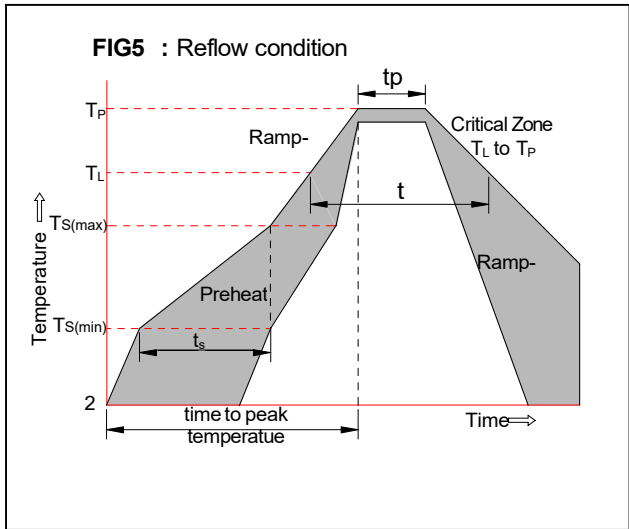


FIG4: Normalized DC holding current vs.case temperature

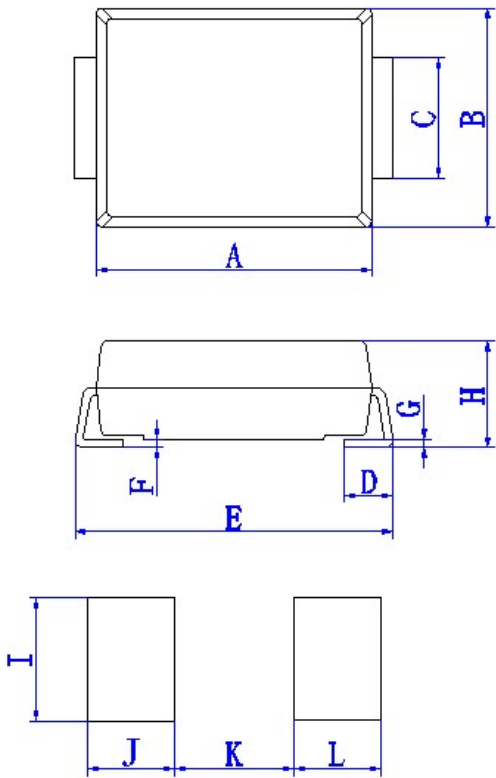


Soldering parameters

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

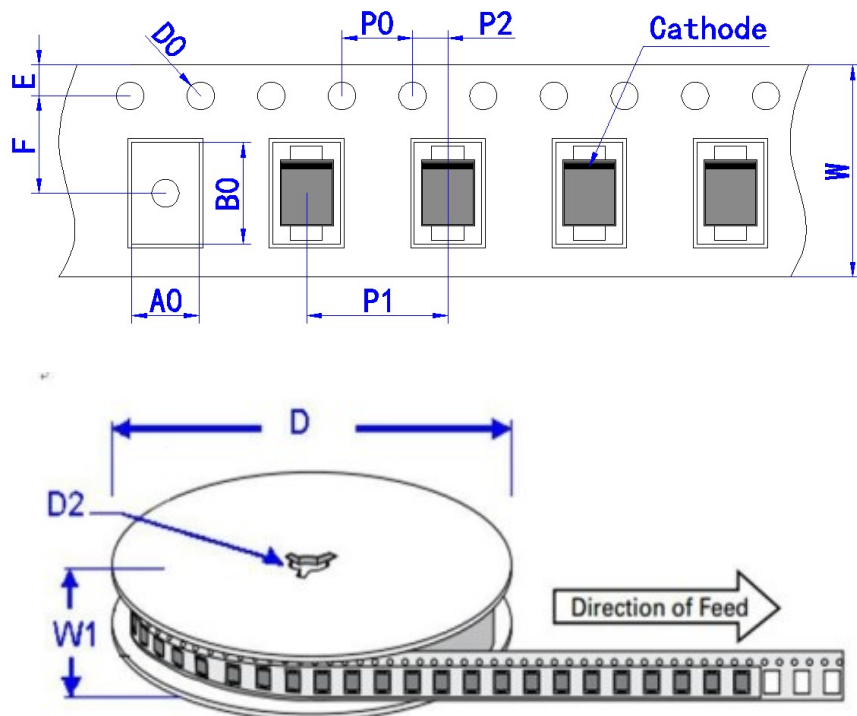


Package mechanical data



Ref.(mm)	Millimeters	
	Min.	Max.
A	4.22	4.70
B	3.4	3.94
C	1.9	2.1
D	0.90	1.42
E	5.21	5.59
F	0	0.23
G	0.15	0.25
H	1.95	2.60
I	2.2	/
J	2.1	/
K	/	2.74
L	2.1	/

Tape & reel specification - SMB



Ref.	Millimeters
A0	3.81±0.20
B0	5.74±0.20
C	330.00
D0	1.55±0.10
E	1.75±0.20
E1	13.50±1.00
F	5.50±0.10
P0	4.00±0.20
P1	8.00±0.20
P2	2.00±0.20
W	12.00±0.30
W1	16.00±4.00