

Features

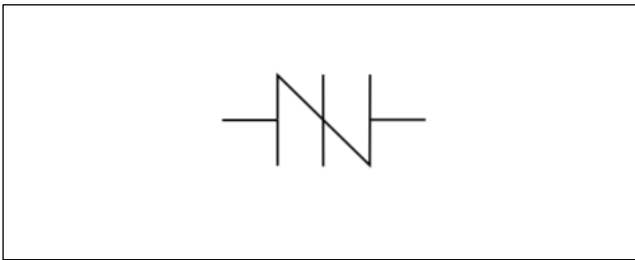
- Low voltage overshoot
- Low on-state voltage
- Fails short circuit when surged in excess of ratings
- RoHS Compliant and Halogen-Free
- 40% lower capacitance than our Baseband Protectors, for applications that demand greater signal integrity
- Does not degrade surge capability after multiple surge events within limit.



Applications

SMB TSS is designed to protect baseband equipment such as phones, faxes, modems, line cards, CPE and DSL from damaging overvoltage transients. Also it is widely used on surveillance CVBS port surge protection.

Function Diagram



Maximum Ratings and Thermal Characteristics (T _A =25°C unless otherwise noted)			
Parameter	Symbol	Value	Unit
Operating Junction Temperature Range	T _J	-40 to +150	°C
Storage Temperature Range	T _S	-65 to +150	°C
Thermal Resistance: Junction to Ambient	R _{θJA}	90	°C/W

AGENCY	AGENCY FILE NUMBER
	Pending

Notes:

1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.
2. 3.5V for single die, 5V for stack die

Characteristics (T =25°C unless otherwise noted)

Part Number	Marking	V _{DRM} @I _{DRM} =5μA	V _S @100V/μs	I _H	I _S	I _T	V _T @I _T =2.2 Amps	Capacitance @1MHz, 2V bias	
		V min	V max	mA min	mA max	A max	V max	pF min	pF max
P0080SAMCLRP	P-8AM	6	25	50	800	2.2	4	10	35
P0220SAMCLRP	P02AM	15	32	50	800	2.2	4	10	35
P0300SAMCLRP	P03AM	25	40	50	800	2.2	4	10	35
P0080SCMCLRP	P-8CM	6	25	50	800	2.2	4	25	60
P0220SCMCLRP	P02CM	15	32	50	800	2.2	4	25	60
P0300SCMCLRP	P03CM	25	40	50	800	2.2	4	15	40
P0640SCMCLRP	P06CM	58	77	150	800	2.2	4	50	80
P0720SCMCLRP	P07CM	65	88	150	800	2.2	4	50	75
P0900SCMCLRP	P09CM	75	98	150	800	2.2	4	40	70
P1100SCMCLRP	P11CM	90	130	150	800	2.2	4	40	70
P1300SCMCLRP	P13CM	120	160	150	800	2.2	4	35	60
P1500SCMCLRP	P15CM	140	180	150	800	2.2	4	30	55
P1800SCMCLRP	P18CM	170	220	150	800	2.2	4	30	50
P2100SCMCLRP	P21CM	180	240	150	800	2.2	4	30	50
P2300SCMCLRP	P23CM	190	260	150	800	2.2	4	30	50
P2600SCMCLRP	P26CM	220	300	150	800	2.2	4	30	45
P3100SCMCLRP	P31CM	275	350	150	800	2.2	4	30	45
P3500SCMCLRP	P35CM	320	400	150	800	2.2	4	25	50
P4500SCMCLRP	P45CM	400	530	50	800	2.2	4	25	45

Surge Ratings

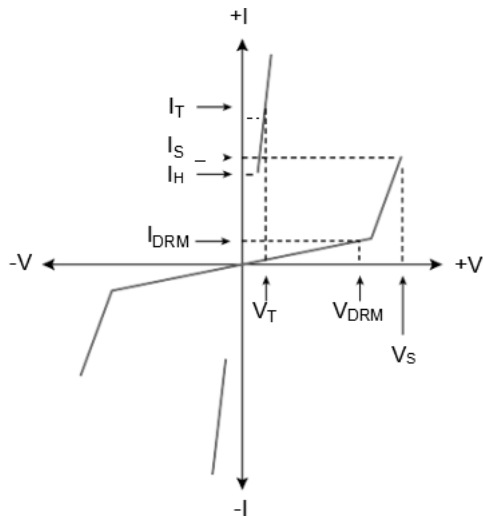
Series	I _{pp}									I _{TSM} 50/60 Hz	di/dt
	0.2/310 ¹	2/10 ¹	8/20 ¹	10/160 ¹	10/560 ¹	5/320 ¹	10/360 ¹	10/1000 ¹	5/310 ¹		
	A min	A min	A min	A min	A min	A min	A min	A min	A min		
A	20	150	150	90	50	75	75	45	75	25	500
C	50	500	400	200	150	200	175	100	200 ³	35	500

Notes:

1 Current waveform in μs

2 Voltage waveform in μs

I-V Curve Characteristics



V_{DRM} Stand-off Voltage -- Maximum voltage that can be applied to the TSS without operation

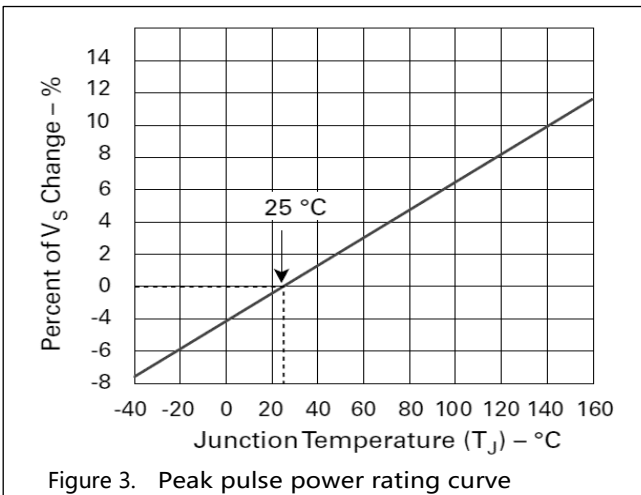
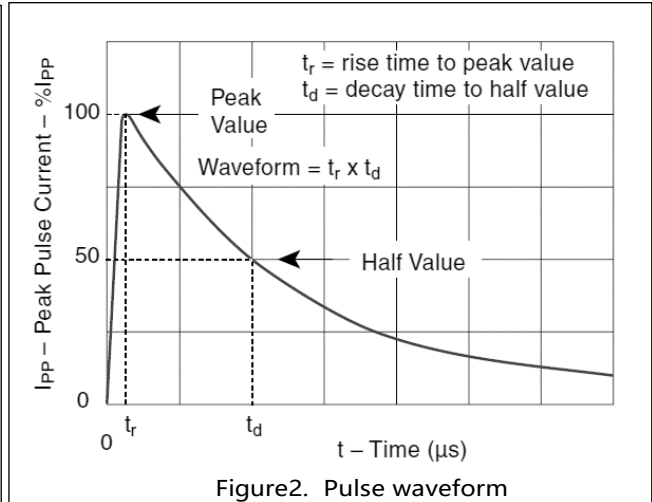
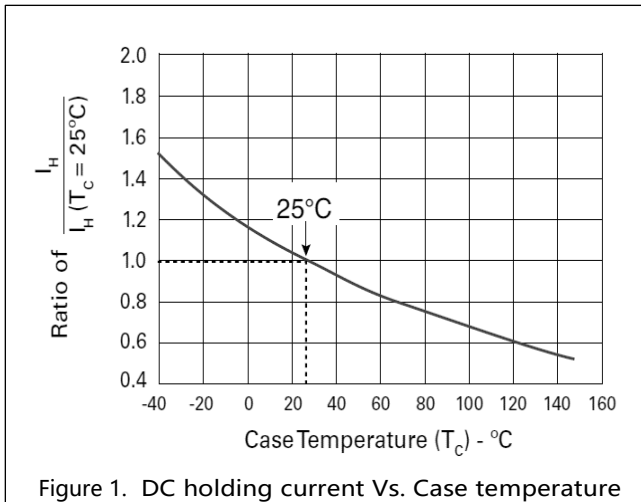
V_S Switch on Voltage -- Maximum voltage that trigger the TSS to on state

V_T Turn on Voltage -- Voltage drop after TSS is triggered on

I_{DRM} Reverse Leakage Current -- Current measured at V_{DRM}

I_S Switch on Current -- Maximum current that trigger the TSS to on state

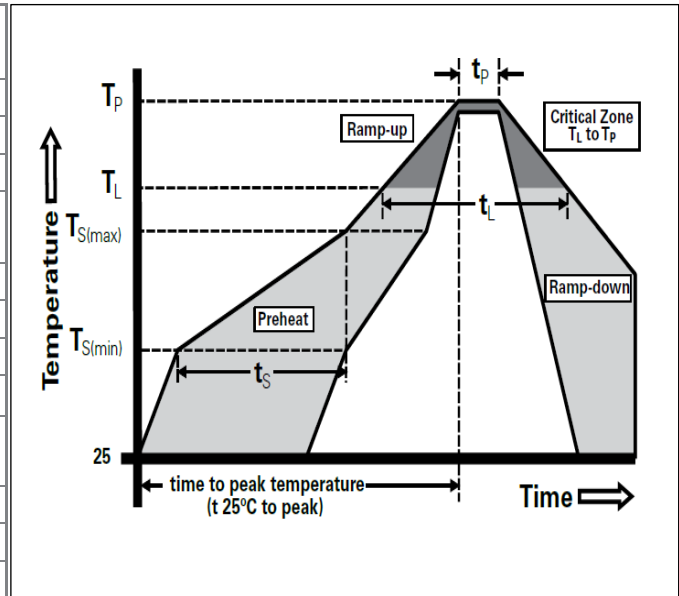
Ratings and Characteristic Curves (T = 25°C unless otherwise noted)



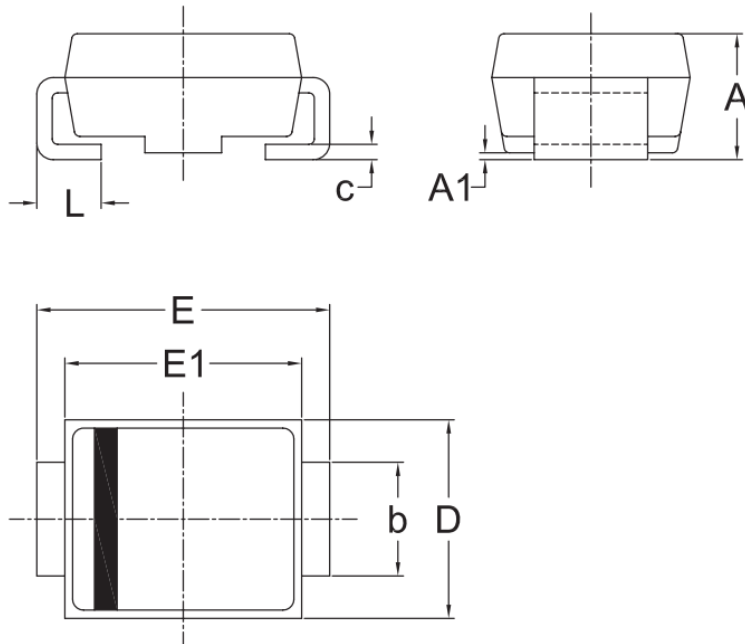
Soldering Parameters

Soldering profile

Reflow Condition		Lead-free assembly
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 (Liquidus Temp (T_A) to peak)		3°C/second max
$T_{S(max)}$ to T_A - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_A) (Liquidus)	217°C
	- Time (min to max) (t_s)	60 – 150 seconds
Peak Temperature (T_p)		260 \pm 0/-5 °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 (T_p)		8 minutes Max.
Do not exceed		260°C



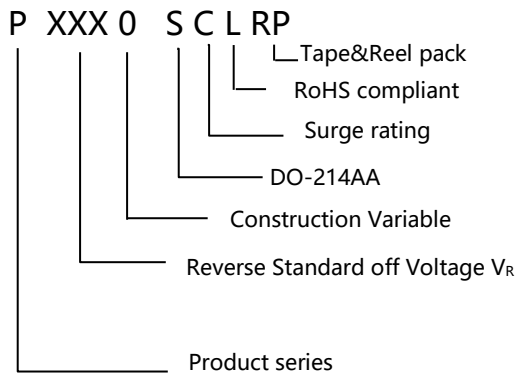
Dimensions



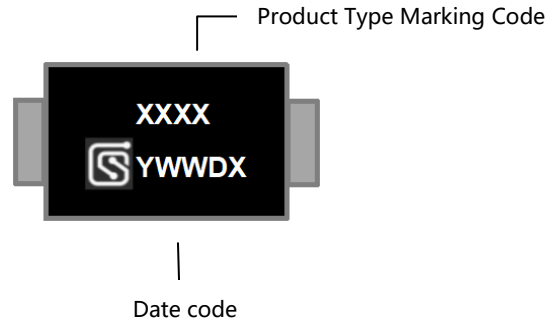
UNIT	A	A1	b	c	D	E	E1	L
mm Max	2.50	0.30	2.15	0.25	3.75	5.54	4.65	1.50
mm Min	2.00	0.00	1.85	0.15	3.45	5.04	4.35	0.80

Remark: Dimensions D and E1 do not include mold flash & gate remain.

Part Numbering



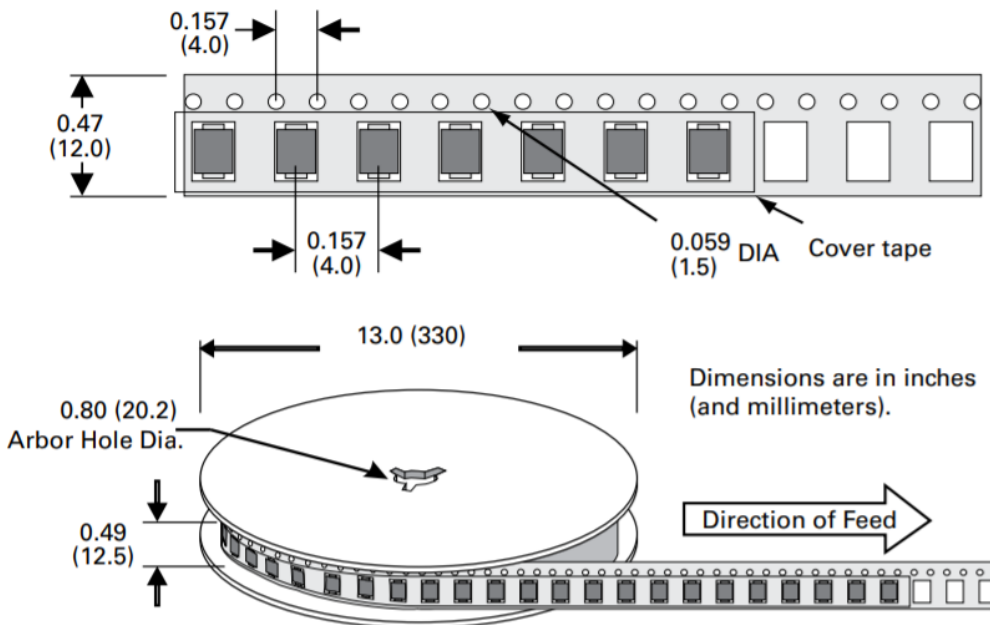
Part Marking



Packing

Part number	Package name	Small packing quantity	Packing method
PXXX0SC	DO-214AA	2500	Tape & Reel

Tape and Reel Specification



Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	14-Oct-2021