

P0080SC - P8000SC Series

ROHS

DO-214AA(SMB) @10/700μS, 6KV
Thyristor Surge Suppressors (TSS)

Description

P0080SC- P8000SC Series are designed to protect broadband equipment such as modems, line card, CPE and DSL from damaging over-voltage transients.
The series provides a surface mount solution that enables equipment to comply with global regulatory standards.

Features and Benefits

- ◆ Low voltage overshoot
- ◆ Low on-state voltage
- ◆ Does not degrade surge capability after multiple surge events within limit
- ◆ Fails short circuit when surged in excess of ratings
- ◆ Low Capacitance

Applicable Global Standards

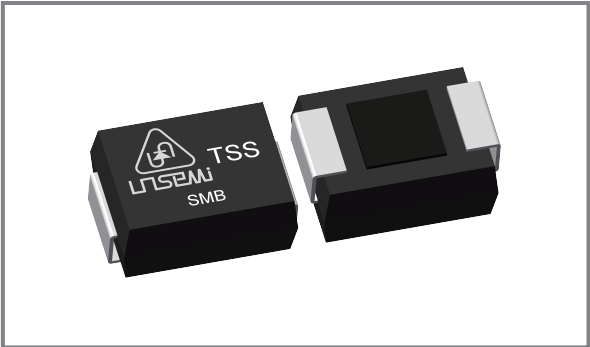
- ◆ TIA-968-A
- ◆ ITU K.20/21 Enhanced level
- ◆ ITU K.20/21 Basic Level
- ◆ GR 1089 Inter building
- ◆ IEC 61000-4-5
- ◆ YD/T 1082
- ◆ YD/T 993
- ◆ YD/T 950

Electrical Parameters

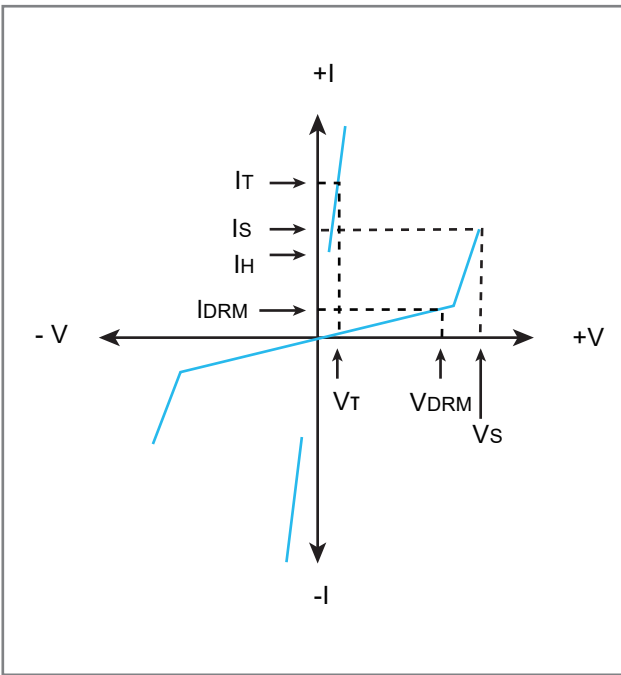
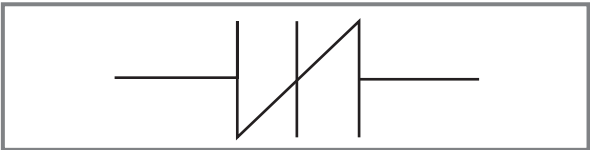
Parameter	Definition
IS	Switching Current - maximum current required to switch to on state
IDRM	Leakage Current - maximum peak off-state current measured at VDRM
IH	Holding Current - minimum current required to maintain on state
IT	On-state Current - maximum rated continuous on-state bcurrent
VS	Switching Voltage - maximum voltage prior to switching to on stat
VDRM	Peak Off-state Voltage - maximum voltage that can be applied while maintaining off state
VT	On-state Voltage - maximum voltage measured at rated on-state current
C0	Off-state Capacitance - typical capacitance measured in off state



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Schematic Symbol



Electrical Characteristics

Part Number	Marking	V_{DRM} @ $I_{DRM}=5\mu A$	I_{DRM}	V_s @100V/ μ S	I_s	V_T @ $I_T=2.2A$	I_T	I_H	C_o @1MHz
		V Min.	μA Max.	V Max.	mA Max.	V Max.	A Max.	mA Min.	pF Typ.
P0080SC	P008C	6	5	25	800	4	2.2	50	100
P0300SC	P03C	25	5	40	800	4	2.2	50	100
P0640SC	P06C	58	5	77	800	4	2.2	150	100
P0720SC	P07C	65	5	88	800	4	2.2	150	100
P0900SC	P09C	75	5	98	800	4	2.2	150	90
P1100SC	P11C	90	5	130	800	4	2.2	150	90
P1300SC	P13C	120	5	160	800	4	2.2	150	90
P1500SC	P15C	140	5	180	800	4	2.2	150	85
P1800SC	P18C	170	5	220	800	4	2.2	150	85
P2000SC	P20C	180	5	220	800	4	2.2	150	85
P2300SC	P23C	190	5	260	800	4	2.2	150	80
P2600SC	P26C	220	5	300	800	4	2.2	150	80
P3100SC	P31C	275	5	350	800	4	2.2	150	65
P3500SC	P35C	320	5	400	800	4	2.2	150	40
P3800SC	P38C	360	5	460	800	4	2.2	150	30
P4200SC	P42C	400	5	520	800	4	2.2	150	30
P4500SC	P45C	420	5	540	800	4	2.2	150	30
P5000SC	P50C	440	5	600	800	4	2.2	150	30
P8000SC	P80C	800	5	900	1350	4	2.2	55	40

Notes:

- Absolute maximum ratings measured at $T_A = 25^\circ C$ (unless otherwise noted).
- Devices are bi-directional.


Surge Ratings

Series	2/10 μ S ¹	8/20 μ S ¹	10/160 μ S ¹	10/560 μ S ¹	10/1000 μ S ¹	5/320 μ S ¹	I_{TSM} 50/60Hz	di/dt
	2/10 μ S ²	1.2/50 μ S ²	10/160 μ S ²	10/560 μ S ²	10/1000 μ S ²	10/700 μ S ²		
	A min	A min	A min	A min	A min	A min	A min	Amps/ μ S max
C	500	400	200	150	100	150	50	500

Notes:

- Current waveform in μ S
 - Voltage waveform in μ S
- Peak pulse current rating (IPP) is repetitive and guaranteed for the life of the product.
 - IPP ratings applicable over temperature range of $-40^\circ C$ to $+85^\circ C$
 - The device must initially be in thermal equilibrium with $-40^\circ C < T_J < +150^\circ C$

Thermal Considerations

Package	Symbol	Parameter	Value	Unit
	TJ	Operating Junction Temperature Range	- 40 to +150	°C
	Ts	Storage Temperature Range	- 40 to +150	°C
	RθJA	Thermal Resistance: Junction to Ambient	90	°C/W

Characteristic Curves

Figure 1 - V - I Characteristics

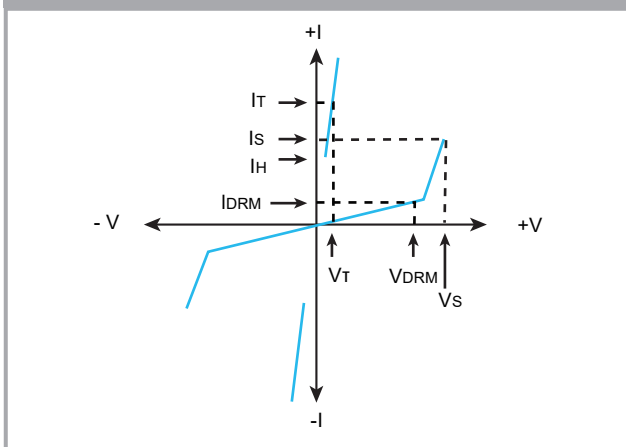


Figure 2 - tr × td Pulse Waveform

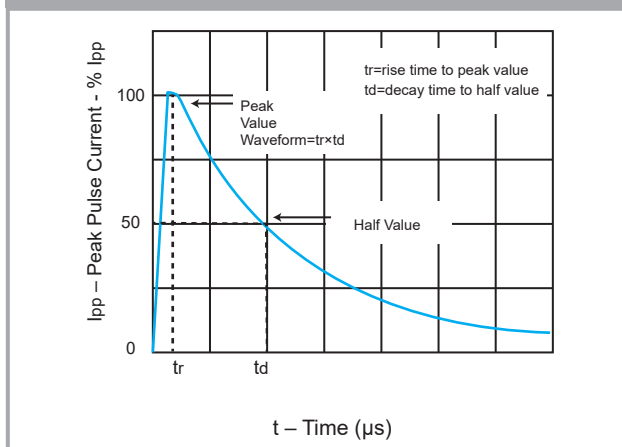


Figure 3 - Normalized VS Change Versus Junction Temperature

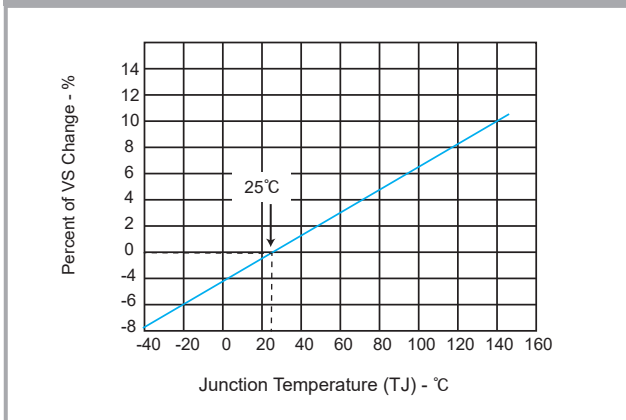
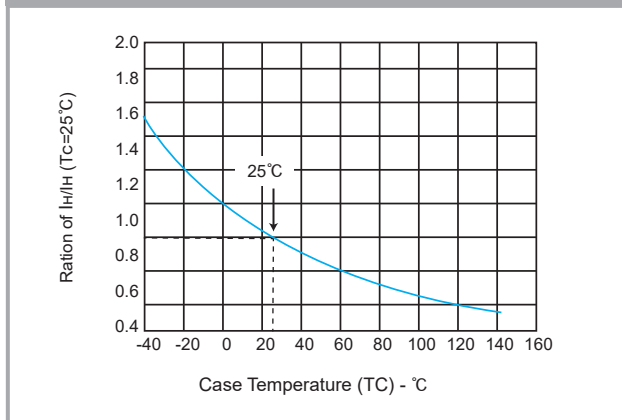
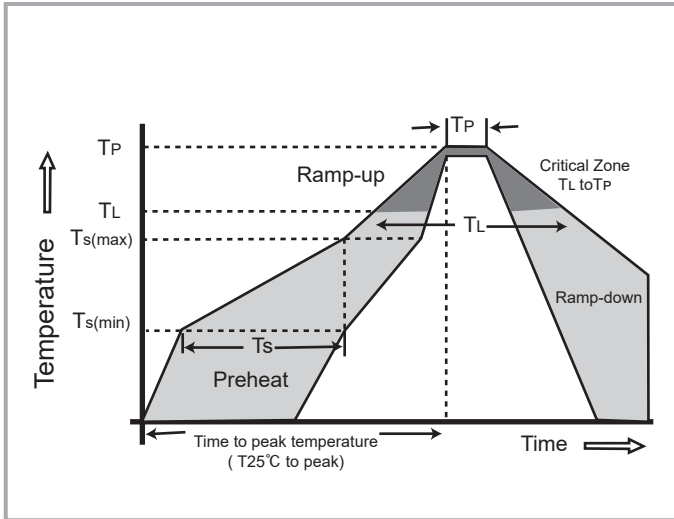


Figure 4 - Normalized DC Holding Current Versus Case Temperature



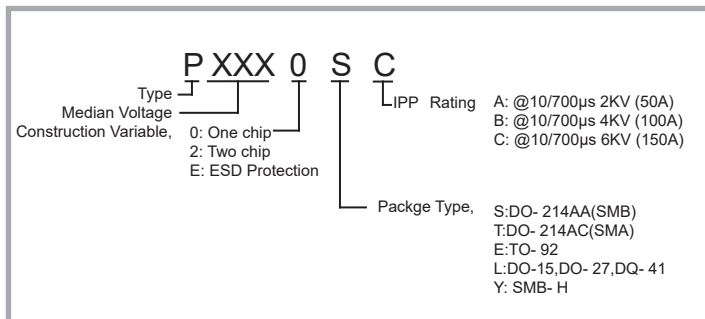


Soldering Parameters

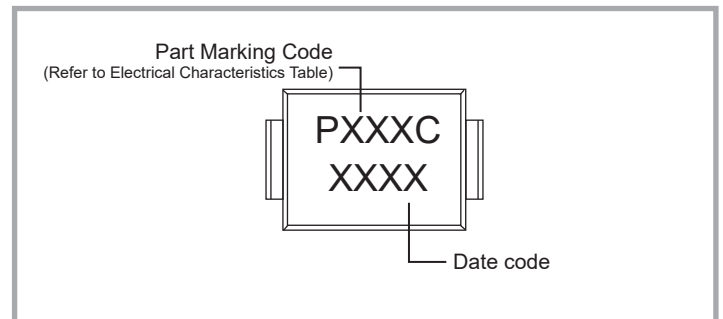


Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min (Ts(min))	+150°C
	-Temperature Max (Ts(max))	+200°C
	- Time (min to max) (Ts)	60 -180 Seconds
Average ramp up rate (Liquidus Temp TL) to peak		3°C/Second max
Ts(max) to TL - Ramp-up Rate		5°C/Second max
Reflow	- Temperature (TL) (Liquidus)	217°C
	- Time (min to max) (Ts)	60 -150 Seconds
Peak Temperature (TP)		260 +0/-5°C
Time within 5°C of actual peak Temperature (TP)		30 Seconds Max
Ramp-down Rate		6°C/Second Max
Time 25°C to peak Temperature (TP)		8 minutes Max
Do not exceed		+260°C

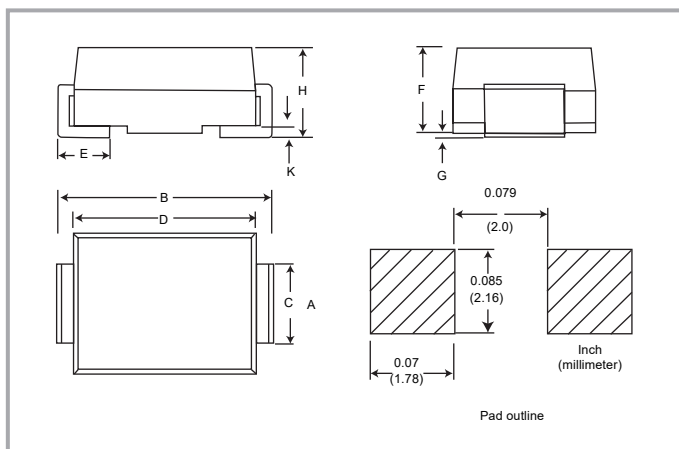
Part Numbering



Part Marking



Dimensions DO-214AA

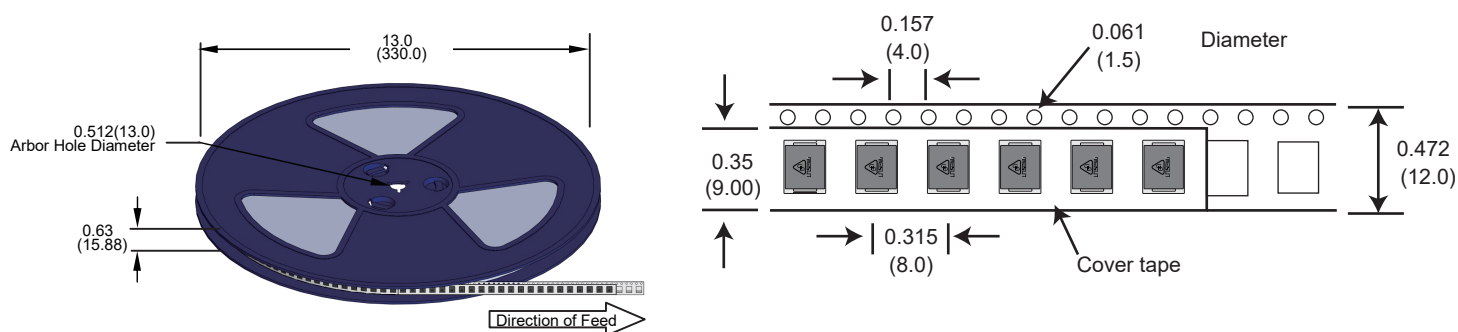


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.130	0.156	3.30	3.95
B	0.201	0.220	5.10	5.60
C	0.077	0.087	1.95	2.20
D	0.159	0.181	4.05	4.60
E	0.030	0.063	0.76	1.60
F	0.076	0.096	1.90	2.45
G	0.002	0.008	0.05	0.20
H	0.077	0.104	1.95	2.65
K	0.006	0.016	0.15	0.41

Packaging

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
Pxxx0SC	DO-214AA	2500	Tape & Reel -12mm/13"tape	EIA -481 - D

Tape and Reel Specifications



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