

Thyristor Surge Suppressors -PxxxxSX Series

Description

DO-214AA/SMB Series are low capacitance devices designed to protect broadband equipment such as VOIP, DSL modems and DSLAMs from damaging overvoltage transients.

The series provides a surface mount solution that enables equipment to comply with global regulatory standards while limiting the impact to broadband signals.



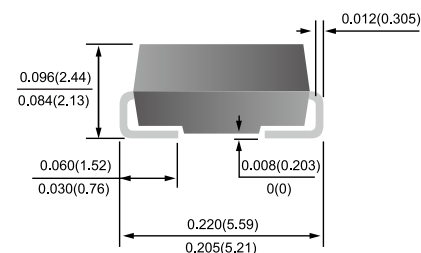
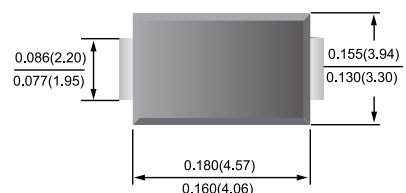
Features

Compared to surge suppression using other technologies, P Series devices offer absolute surge protection regardless of the surge current available and the rate of applied voltage (dv/dt). P Series devices:

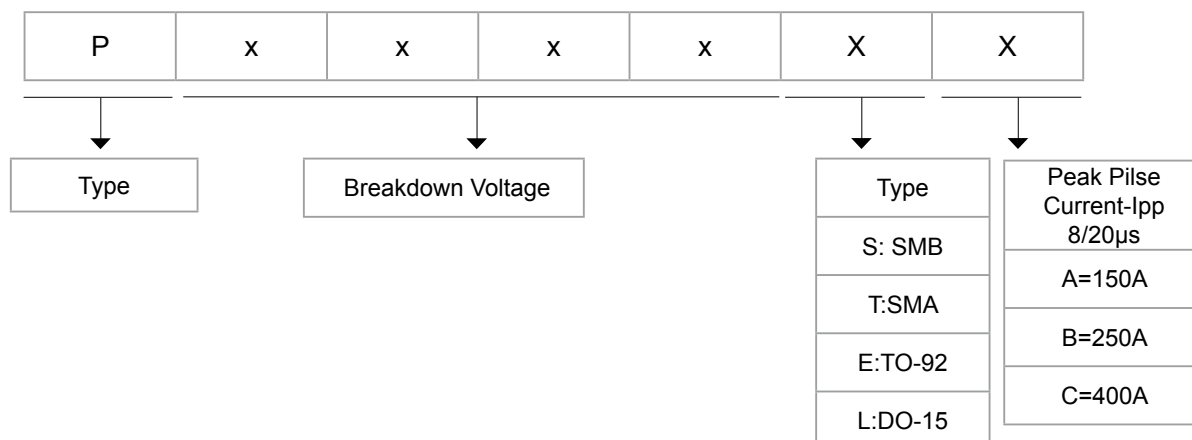
- Cannot be damaged by voltage
- Eliminate hysteresis and heat dissipation typically found with clamping devices
- Eliminate voltage overshoot caused by fast-rising transients
- Are non-degenerative
- Will not fatigue
- Have low capacitance, making them ideal for high-speed transmission equipment

Dimensions

(mm)
(inches)



Part Number Code



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Electrical Characteristics

Type Number	V _{DRM}	I _{DRM}	V _S	I _H	I _S	I _T	V _T	C _J	
	V	μA	V	MA	MA	A	V	pF _{Min}	pF _{Max}
P0080SA	6	5	25	50	800	2.2	4	25	150
P0080SB	6	5	25	50	800	2.2	4	25	150
P0080SC	6	5	25	50	800	2.2	4	35	260
P0300SA	25	5	40	50	800	2.2	4	15	140
P0300SB	25	5	40	50	800	2.2	4	15	140
P0300SC	25	5	40	50	800	2.2	4	25	250
P0640SA	58	5	77	150	800	2.2	4	40	60
P0640SB	58	5	77	150	800	2.2	4	40	60
P0640SC	58	5	77	150	800	2.2	4	28	80
P0720SA	65	5	88	150	800	2.2	4	35	60
P0720SB	65	5	88	150	800	2.2	4	35	75
P0720SC	65	5	88	150	800	2.2	4	50	150
P0900SA	75	5	98	150	800	2.2	4	35	55
P0900SB	75	5	98	150	800	2.2	4	35	70
P0900SC	75	5	98	150	800	2.2	4	45	140
P1100SA	90	5	130	150	800	2.2	4	30	50
P1100SB	90	5	130	150	800	2.2	4	30	70
P1100SC	90	5	130	150	800	2.2	4	45	115
P1300SA	120	5	160	150	800	2.2	4	25	45
P1300SB	120	5	160	150	800	2.2	4	25	60
P1300SC	120	5	160	150	800	2.2	4	40	105
P1500SA	140	5	180	150	800	2.2	4	25	40
P1500SB	140	5	180	150	800	2.2	4	25	55
P1500SC	140	5	180	150	800	2.2	4	35	95
P1800SA	170	5	220	150	800	2.2	4	25	35
P1800SB	170	5	220	150	800	2.2	4	25	50
P1800SC	170	5	220	150	800	2.2	4	35	90
P2300SA	190	5	260	150	800	2.2	4	25	35
P2300SB	190	5	260	150	800	2.2	4	25	50
P2300SC	190	5	260	150	800	2.2	4	30	80
P2600SA	220	5	300	150	800	2.2	4	20	35
P2600SB	220	5	300	150	800	2.2	4	20	45
P2600SC	220	5	300	150	800	2.2	4	30	80
P3100SA	275	5	350	150	800	2.2	4	20	35
P3100SB	275	5	350	150	800	2.2	4	20	45
P3100SC	275	5	350	150	800	2.2	4	30	70
P3500SA	320	5	400	150	800	2.2	4	20	35
P3500SB	320	5	400	150	800	2.2	4	20	40
P3500SC	320	5	400	150	800	2.2	4	25	65

Notes:

I_S: Switching Current – maximum current required to switch to on state
 I_{DRM}: Leakage Current – maximum peak off-state current measured at V_{DRM}
 I_H: Holding Current – minimum current required to maintain on state
 I_{PP}: Peak Pulse Current – maximum rated peak impulse current
 I_T: On-state Current – maximum rated continuous on-state current
 V_{DRM}: Peak Off-state Voltage – maximum voltage that can be applied while maintaining off state
 V_T: On-state Voltage – maximum voltage measured at rated on-state current
 V_S: Switching Voltage – maximum voltage prior to switching to on state

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Surge Ratings

Series	Peak Pilse Current-Ipp(A)				
	2/10μs	8/20μs	10/160μs	10/560μs	10/1000μs
A	200	150	100	60	50
B	250	250	150	100	80
C	500	400	200	120	100

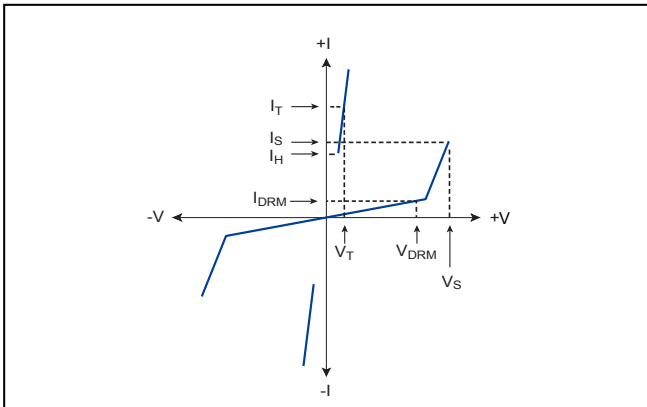
Thermal Considerations

Package	Symbol	Parameter	Value	Unit
 DO-214AA	TJ	Operating Junction Temperature	-40 to +150	°C
	TS	Storage Temperature Range	-40 to +150	°C
	RθJA	Junction to Ambient on printed circuit	90	°C/W

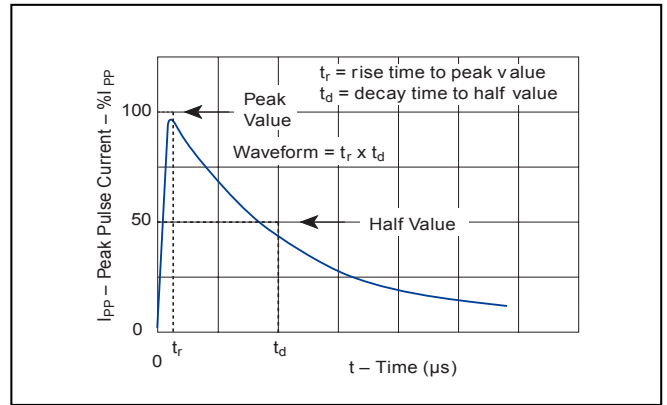
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Characteristics Curves

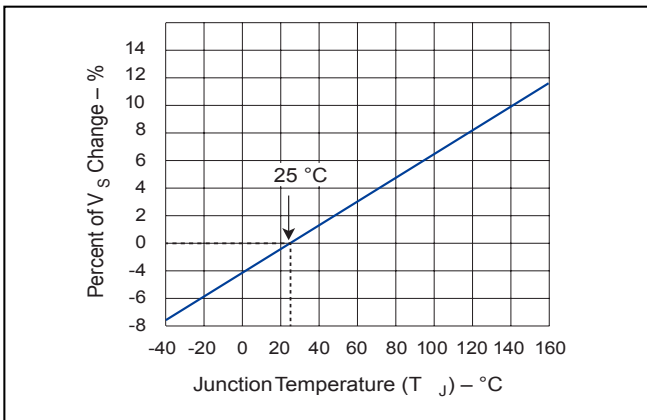
V-I Characteristics



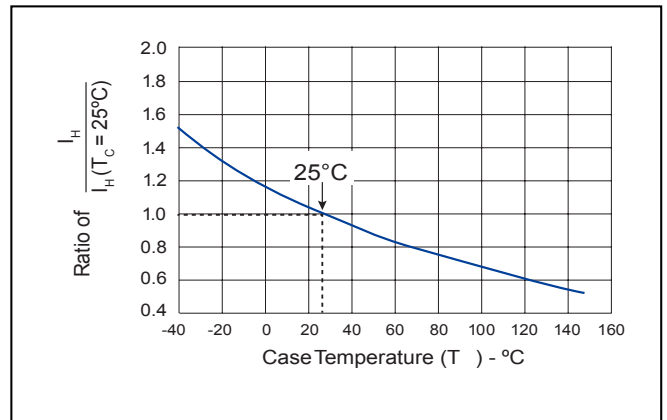
$t_r \times t_d$ Pulse Waveform



Normalized V_S Change vs. Junction Temperature



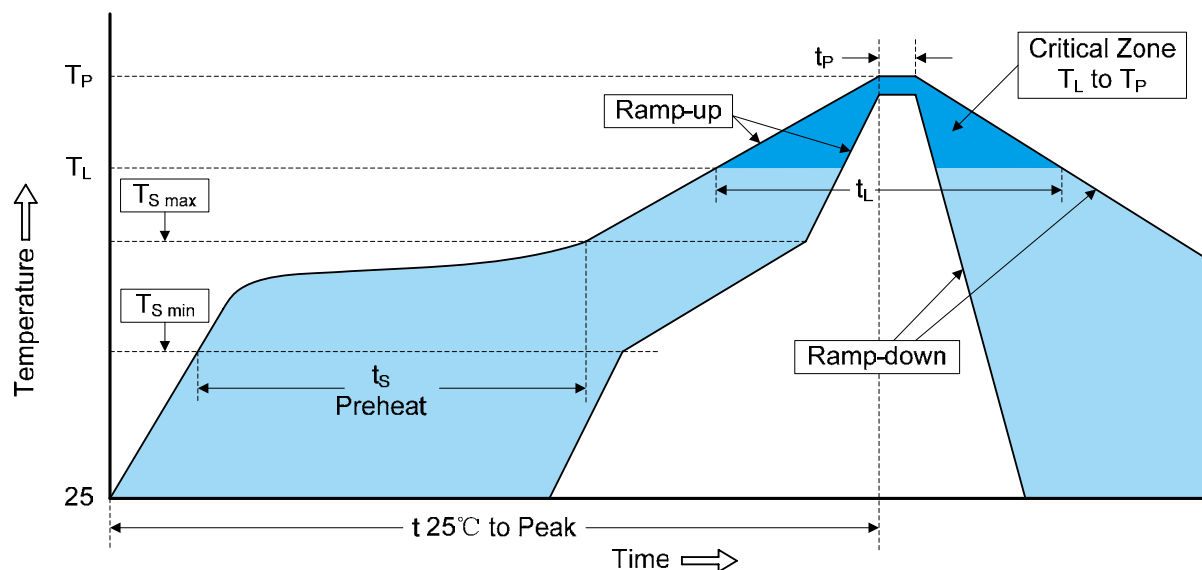
Normalized DC Holding Current vs. Case Temperature



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Recommended Soldering Conditions

Reflow Soldering

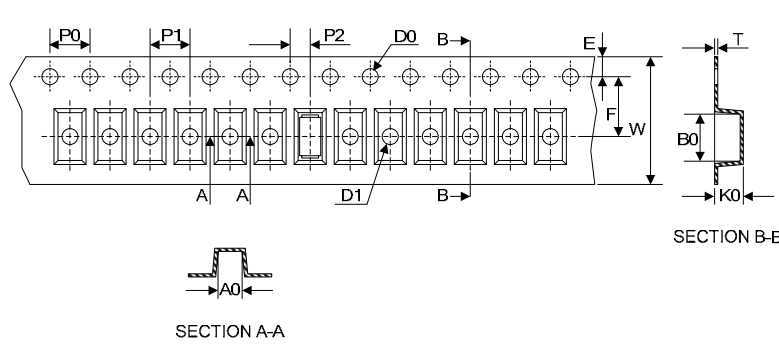
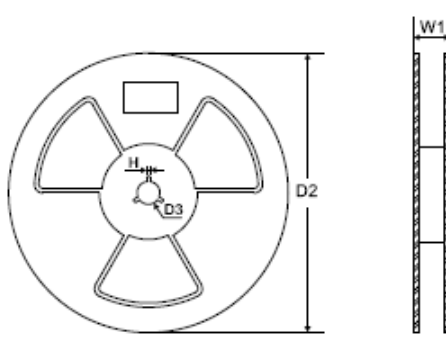


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max) (t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	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.

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Packaging

Tape 	Symbol	Dimension (mm)
	W	12.00±0.30
	P0	4.00±0.10
	P1	8.00±0.10
	P2	2.00±0.10
	D0	Φ1.55±0.05
	D1	Φ1.55±0.05
	E	1.75±0.10
	F	5.50±0.10
	A0	3.76±0.10
	B0	5.69±0.10
	K0	2.70±0.10
	T	0.25±0.10
Reel 	D2	Φ330.0±2.0
	D3	Φ13.5±0.5
	H	2.5±0.5
	W1	16.0±1.0
	Quantity: 2500PCS	