P2300SA-C15

Thyristor Surge Suppressors

Descriptions

Thyristors protect telecommunications equipment such as modems, line cards,fax machines, and other CPE.

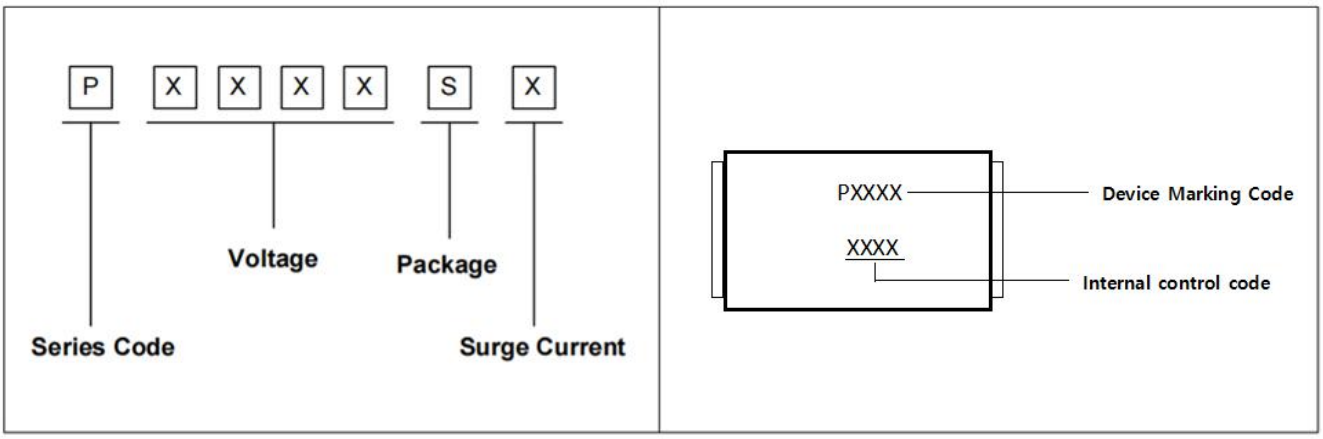
P Series devices are used to enable equipment to meet various regulatory requirements including GR 1089,ITUK.20, K.21 and K.45, IEC 60950, UL 60950, and TIA-968(Formerly known as FCC Part 68).

Features

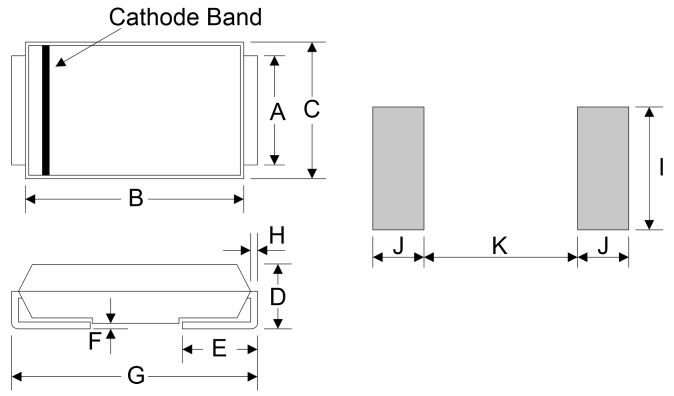
Compared to surge suppression using other technologies, P Series devices offer absolute surge protection regardless of the surge current available and the rate of applied voltage (dv/dt). P Series devices:

- 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
- Meets MSL level 1, per J-STD-020

Part Number Code and Marking



Dimensions (SMA/DO-214AC)



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.250	1.650	0.049	0.065
B	3.990	4.550	0.157	0.178
C	2.540	2.790	0.100	0.110
D	1.980	2.290	0.078	0.090
E	0.780	1.550	0.030	0.061
F	-	0.203	-	0.008
G	4.75	5.280	0.194	0.208
H	0.152	0.305	0.006	0.012
I	1.800	-	0.070	-
J	2.100	-	0.082	-
K	-	2.300	-	0.090

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** – typical 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

Electrical Characteristics (T_A=25℃ Unless otherwise specified)

Part Number	V_{DRM} (V)	V_S (V)	V_T (V)	I_{DRM} (μA)	I_S (mA)	I_T (A)	I_H (mA)	C_O (pF)
P2300SA-C15	190	290	4	5	800	2.2	150	15

Notes:

1. All measurements are made at an ambient temperature of 25℃. I_{PP} applies to -40℃ through +85℃ temperature range.
2. Off-state capacitance(C_O) is measured at 1 MHz with a 2V bias and is typical value.
3. For surge ratings, see table below.

Surge Ratings

Series	I_{PP} 2×10μs (A)	I_{PP} 8×20μs (A)	I_{PP} 10×160μs (A)	I_{PP} 10×560μs (A)	I_{PP} 10×1000μs (A)	VPP 10×700μs (V)	I_{TSM} 60Hz (A)	di/dt (A/μs)
A	150	150	90	50	45	2000	20	500

Thermal Considerations

Package DO-214AA/SMB	Symbol	Parameter	Value	Unit
	T_J	Operating Junction Temperature	40 to +125	℃
	T_S	Storage Temperature Range	-40 to +150	℃
	$R_{\theta JA}$	Junction to Ambient on printed circuit	90	℃/W

Characteristics Curves

Figure 1. V-I Characteristics

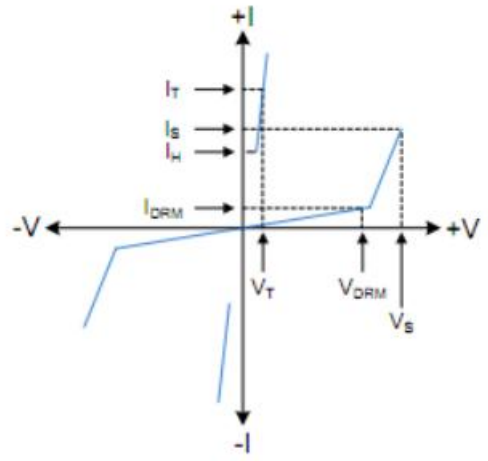


Figure 2. tr ×td Pulse Wave-form

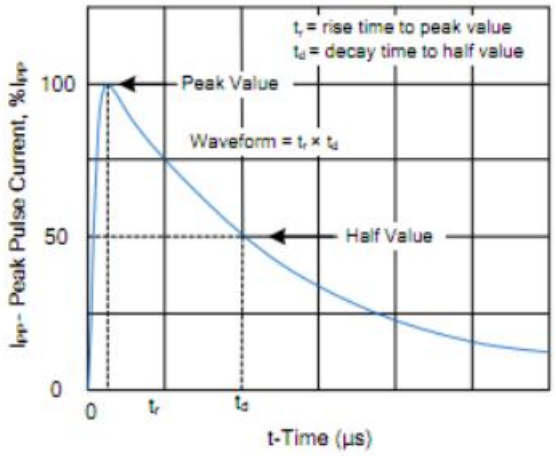


Figure 3. Normalized Vs Change versus Junction Temperature

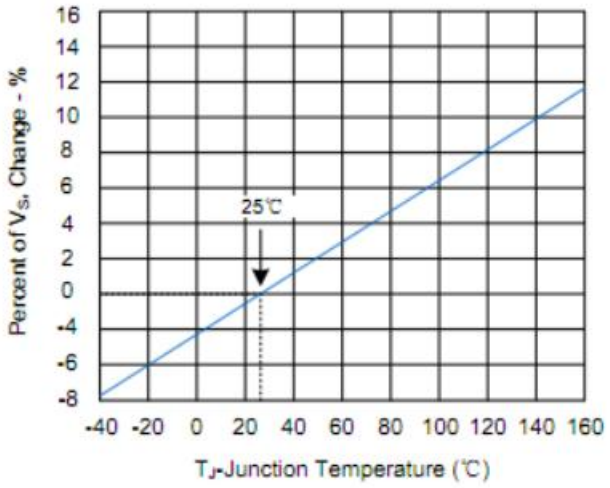
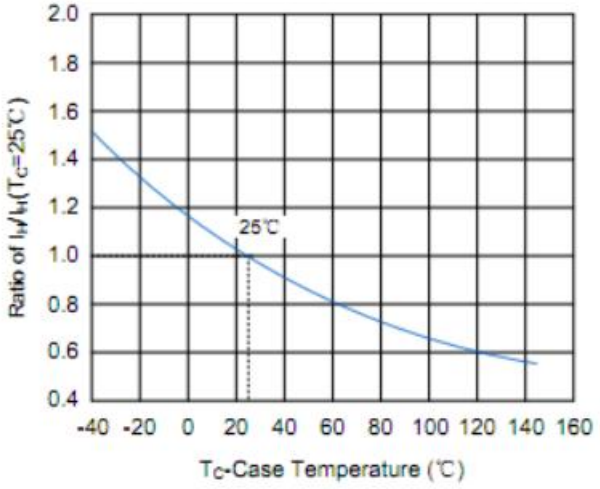
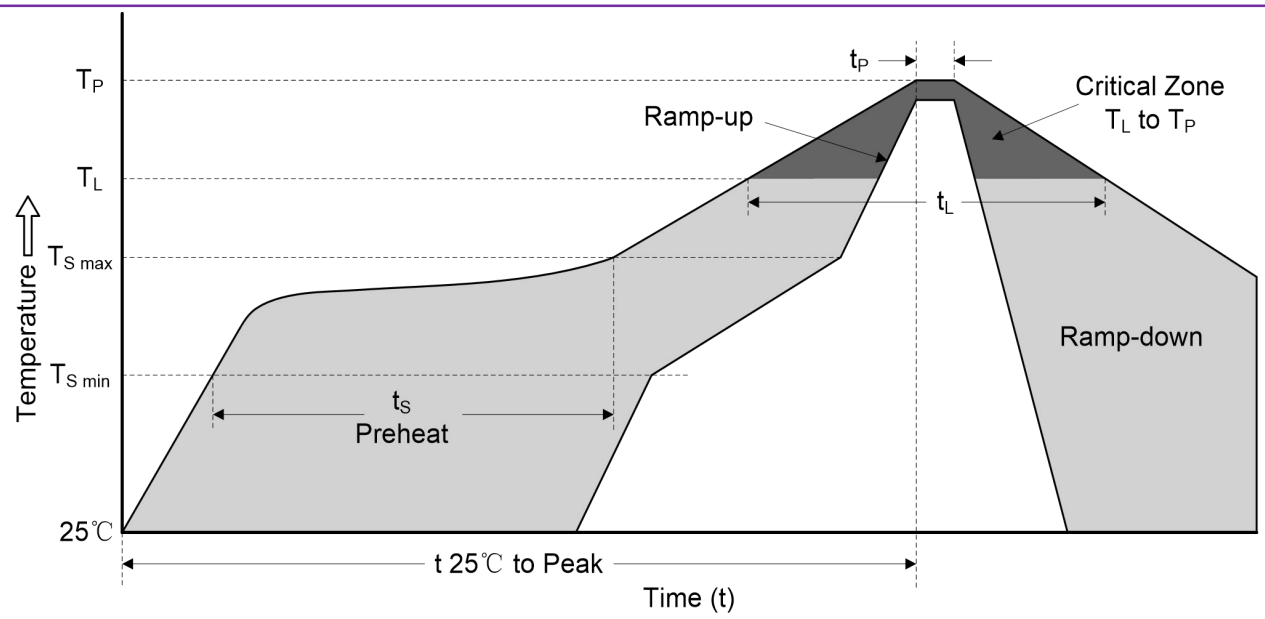


Figure 4. Normalized DC Holding Current versus Case Temperature



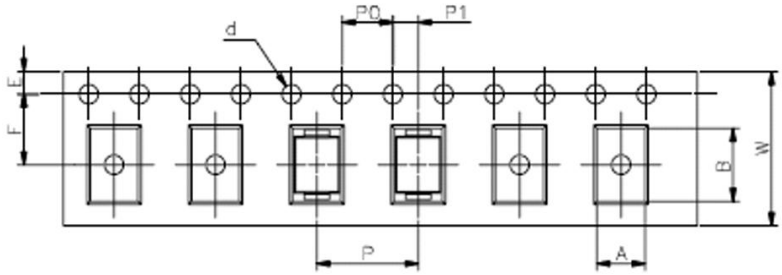
Recommended Soldering Conditions



Reflow Condition		Lead-free Assembly
Pre heat	-Temperature Min ($T_{S\ min}$)	150℃
	-Temperature Max ($T_{S\ max}$)	200℃
	-Time (min to max) (t_S)	60-180 seconds
Average ramp-up rate (T_L to T_P)		3℃/second max.
$T_{S\ max}$ to T_L -Ramp-up Rate		3℃/second max.
Reflow	-Temperature (T_L) (Liquidus)	217℃
	-Time (min to max) (t_S)	60-150 seconds
Peak Temperature (T_P)		260(+0/-5)℃
Time within 5℃ of actual Peak Temperature (t_P)		20-40 seconds
Ramp-down Rate		6℃/second max.
Time 25℃ to Peak Temperature(T_p)		8 minutes max.
Do not exceed		260℃

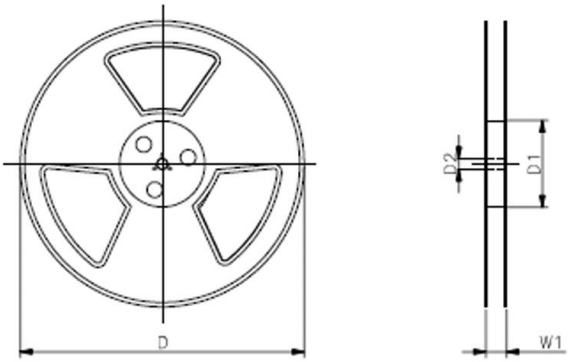
Packaging

Tape



Symbol	Dimension (mm)
W	12.00±0.20
P	8.00±0.20
P0	4.00±0.20
P1	2.00±0.20
d	Φ1.50±0.1
E	1.5±0.20
F	5.65±0.2
A	3.65±0.30
B	5.69±0.30

13〃Reel



D	Φ330.0
D1	100±3
D2	13.0±0.5
W1	16.8±2.0
Quantity: 5000PCS	