

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.

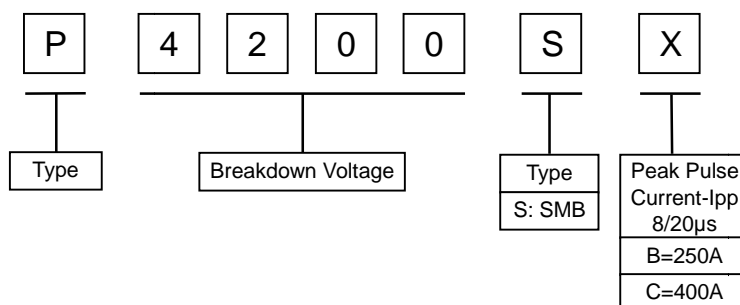


Features

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:

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


Part Number Code



Surge Ratings

Series	Peak Pulse Current-Ipp(A)		VPP(V)	I _{TSM} (A)	di/dt
	8/20μs	10/1000μs	10/700μs	60Hz	(A/us)
B	250	80	4000	25	500
C	400	100	6000	30	500

Thermal Considerations

Package	Symbol	Parameter	Value	Unit
 DO-214AA	T _J	Operating Junction Temperature	-55 to +125	°C
	T _S	Storage Temperature Range	-55 to +150	°C
	R _{θJA}	Junction to Ambient on printed circuit	90	°C/W

Electrical Characteristics

Type Number	V_{DRM}	V_S	V_T	I_{DRM}	I_S	I_T	I_H	C_J
	Min (V)	Max (V)	Max (V)	Max (μA)	mA	A	mA	pF
P4200SB	400	520	4	5	800	2.2	≤ 50	40
P4200SC	400	520	4	5	800	2.2	≤ 50	70

Notes:

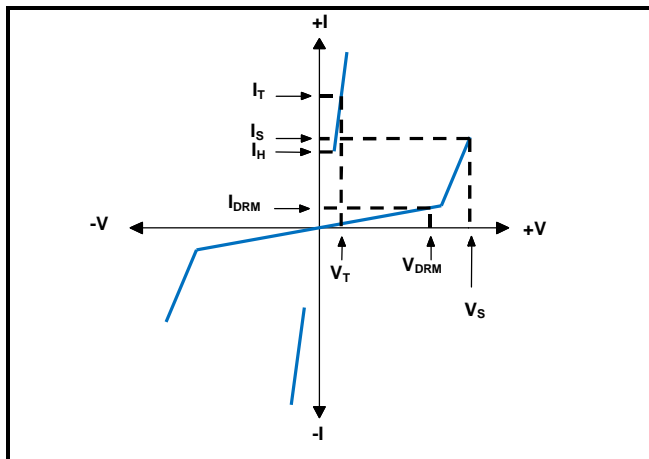
1. V_S is measured at 100KV/S

2. Off-state capacitance is measured in $V_{DC}=2V, V_{RMS}=1V, F=1MHz$

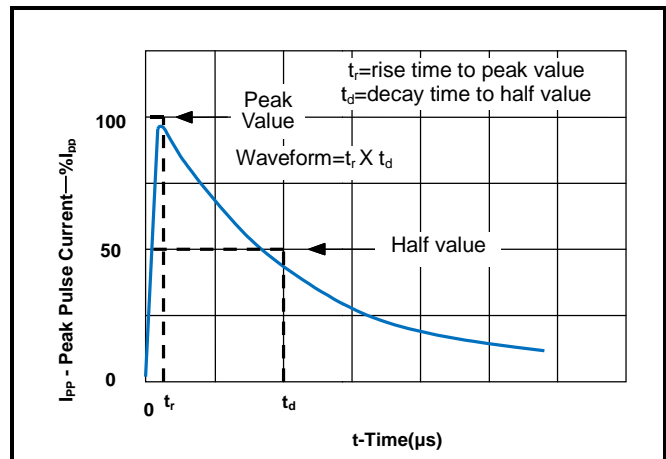
3. All measurements are made at an ambient temperature of 25°C

Characteristics Curves

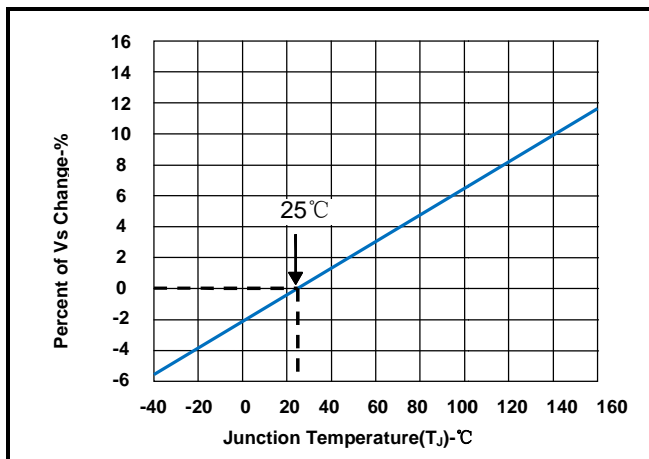
V-1 Characteristics



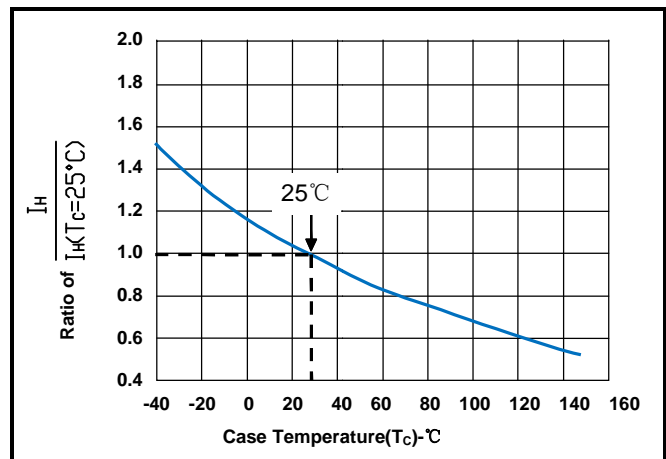
$t_r \times t_d$ Pulse Waveform

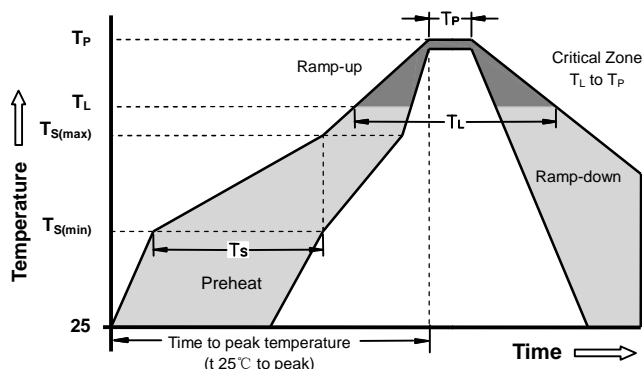


Normalized V_S Change vs. Junction Temperature

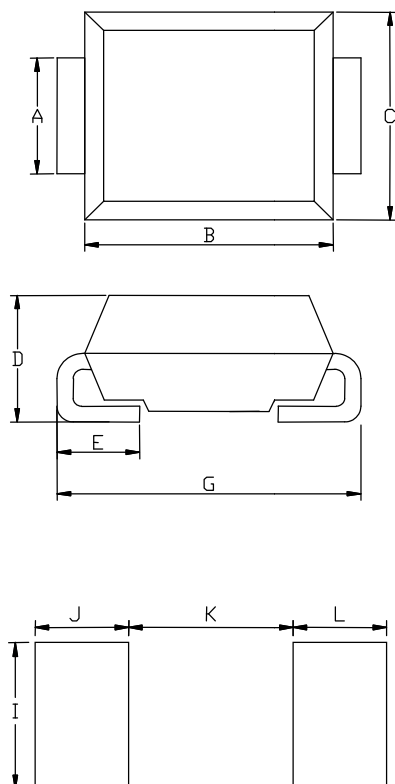


Normalized DC Holding Current vs. Case Temperature



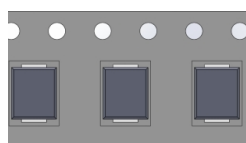
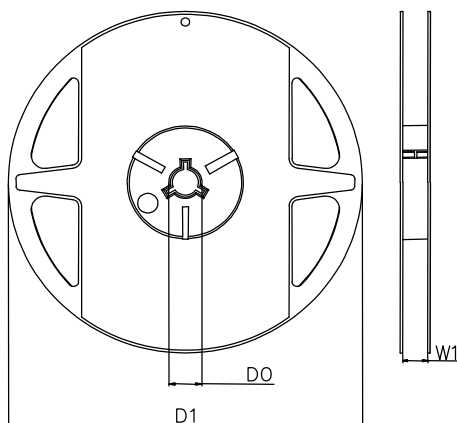
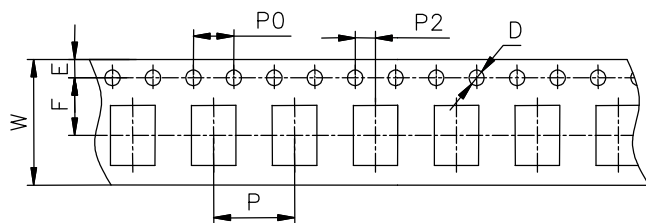
Soldering Parameters - Reflow Soldering (Surface Mount Devices)


Reflow Condition		Pb - 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 Seconds
Average ramp up rate (Liquids Temp T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquids)	217°C
	- Time (min to max) (t_s)	60 -150 Seconds
Peak Temperature (T_P)		260 +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


DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.96	2.20	0.077	0.087
B	4.35	4.85	0.171	0.191
C	3.30	3.94	0.130	0.155
D	2.20	2.50	0.087	0.098
E	0.76	1.52	0.030	0.060
G	5.08	5.59	0.200	0.220
I	2.20	-	0.087	-
J	1.45	-	0.057	-
K	-	2.55	-	-0.100
L	1.45	-	0.057	-

Taping and Reel Specifications



Symbol	Millimeters	Inches
W	12±0.3	0.472±0.012
P	8±0.1	0.315±0.004
F	5.5±0.1	0.217±0.004
E	1.75±0.1	0.069±0.004
D	1.55±0.05	0.061±0.002
P0	4±0.1	0.157±0.004
P2	2±0.1	0.079±0.004
D0	20.2±0.5	0.800±0.02
D1	Φ330±2.0	12.99±0.079
W1	12.5±1.0	0.49±0.039

Part Number	Component package	Quantity	Packaging option	Industry Standard
P4200SX	DO-214AA/SMB	2500	Tape&Reel-12mm tape/13"reel	EIA-481-1