

DATA SHEET

THYRISTOR SURGE SUPPRESSORS MODEMS/LINE CARD

P2300SD

RoHS compliant & Halogen free



Product specification— March 18, 2021 V.2



Thyristor Surge Suppressors (TSS) Data Sheet

Description

DO-214AA Thyristor solid state protection thyristor protect telecommunications equipment such as modems, line cards, fax machines, and other CPE.

It is used to enable equipment to meet various regulatory requirements including GR 1089, ITU K.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, This device offer absolute surge protection regardless of the surge current available and the rate of applied voltage (dv/dt).

- 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

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 V_{DRM}
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

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)	I _{PP} 10/1000μs (A)	V _{PP} 10/700μs (V)	Marking Code
P2300SD	190	260	4	5	800	2.2	50	100	200	8000	P23D

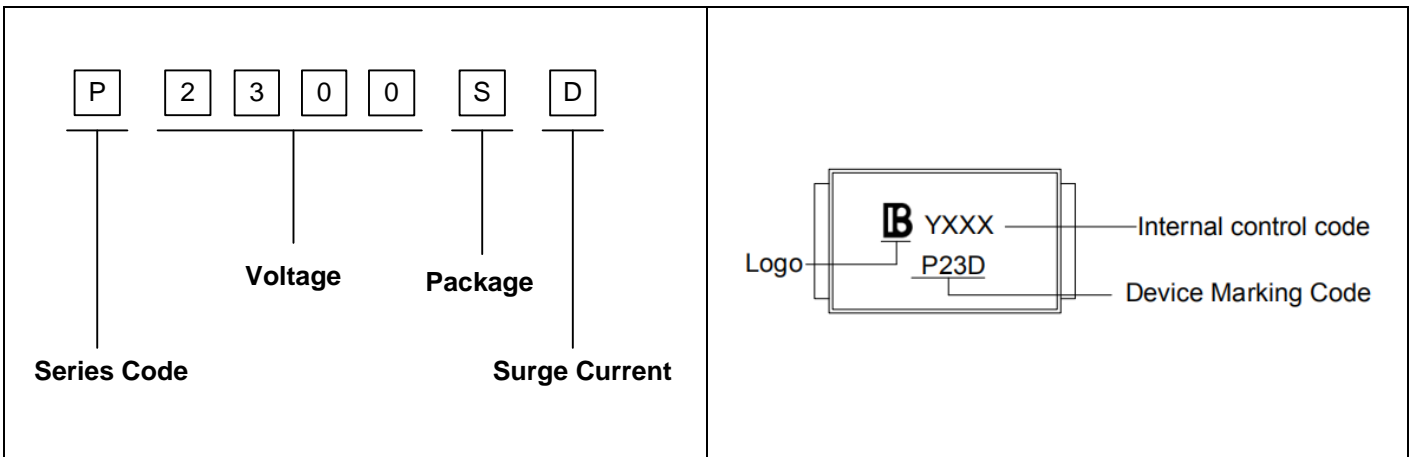
Notes:

- All measurements are made at an ambient temperature of 25°C. I_{PP} applies to -40°C through +85°C temperature range.
- Off-state capacitance(C_o) is measured at 1 MHz with a 2V bias and is typical value.

Thermal Considerations

Package DO-214AA/SMB	Symbol	Parameter	Value	Unit
	T _J	Operating Junction Temperature	-40 to +125	°C
	T _S	Storage Temperature Range	-40 to +150	°C
	R _{θJA}	Junction to Ambient on printed circuit	90	°C/W

Part Number Code and Marking



Characteristics Curves

Figure 1. V-I Characteristics

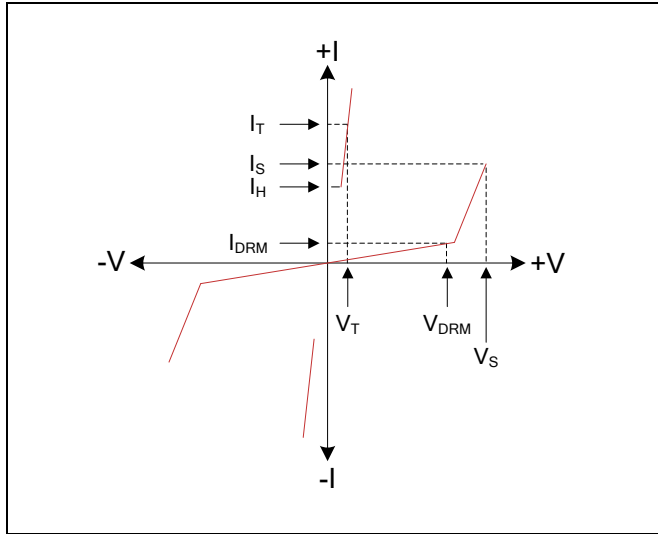


Figure 2. $t_r \times t_d$ Pulse Wave-form

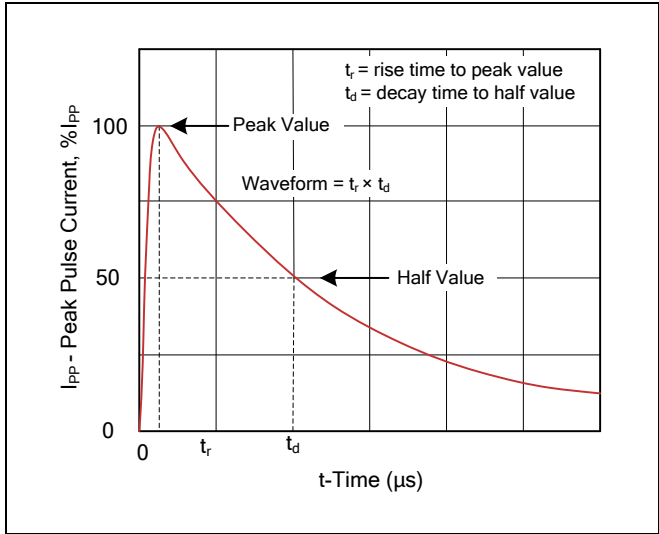


Figure 3. Normalized V_s Change versus Junction Temperature

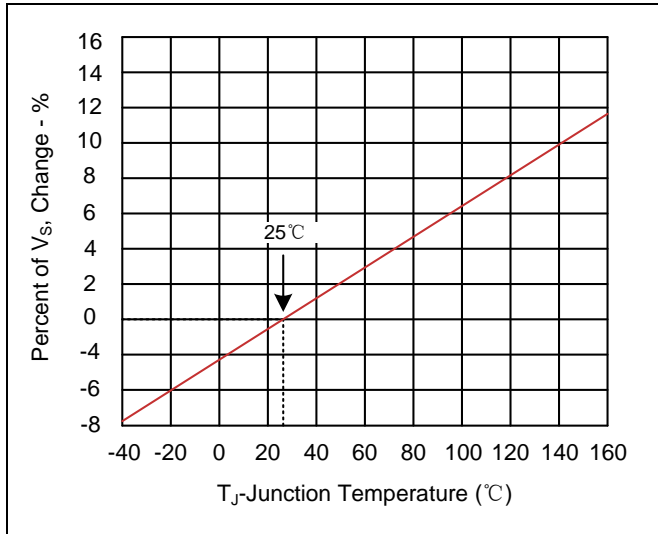
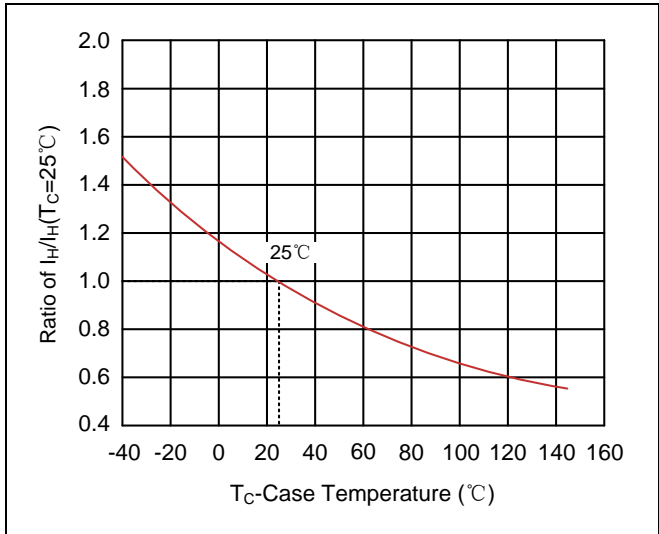
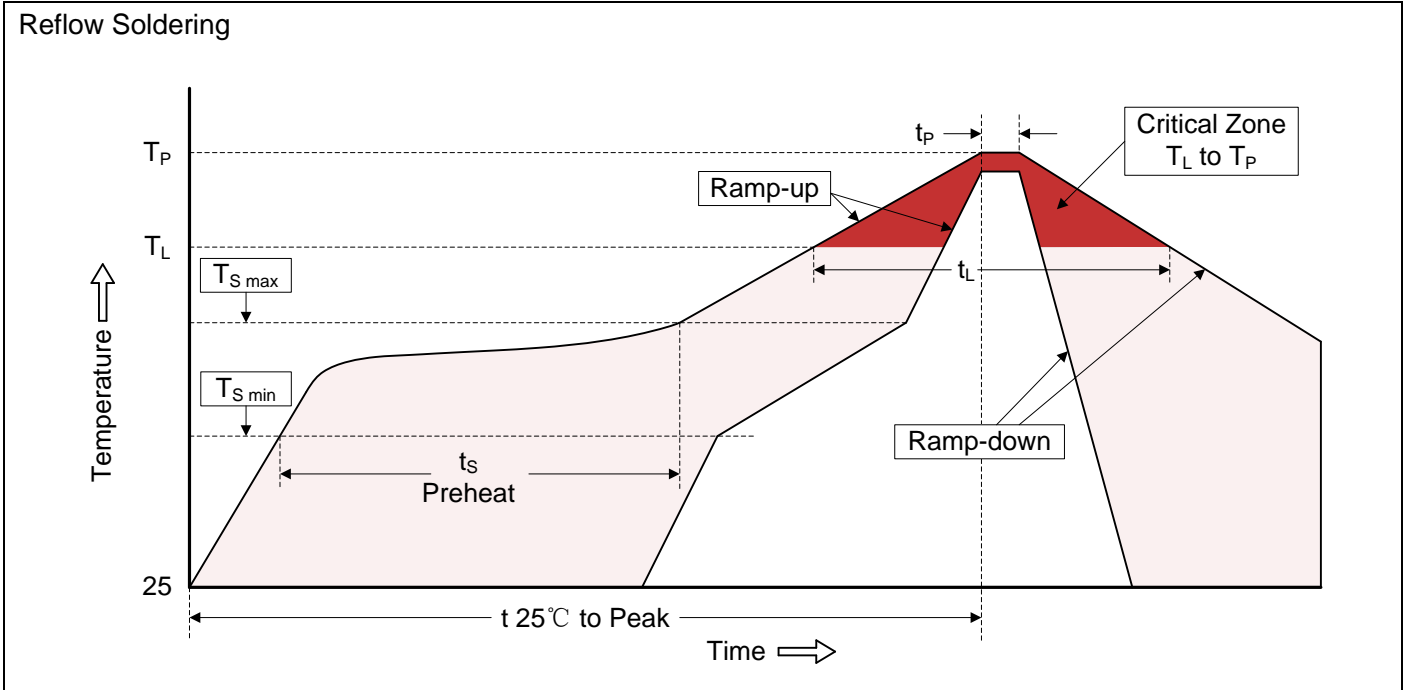


Figure 4. Normalized DC Holding Current versus Case Temperature



Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat -Temperature Min (TSmin) -Temperature Max (TSmax) -Time (min to max) (ts)	150°C 200°C 60-180 seconds
TSmax to TL -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (TL) -Time (tL)	217°C 60-150 seconds
Peak Temperature (TP)	260°C
Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Dimensions (SMB/DO-214AA)

	Symbol	Millimeters		Inches	
		Min.	Max.	Min.	Max.
	L	4.06	4.70	0.160	0.185
	D	3.30	3.94	0.130	0.155
	D1	1.90	2.20	0.075	0.086
	T	5.21	5.59	0.205	0.220
	T1	0.76	1.52	0.030	0.060
	d	-	0.203	-	0.008
	H	1.95	2.65	0.077	0.104

Packaging

<p>Tape</p>	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
<p>13" Reel</p>	D2	Φ330.0±2.0
	D3	Φ13.5±0.5
	H	2.5±0.5
	W1	16.0±1.0
	Quantity: 3000PCS	