



DO-214AA Thyristor Surge Protection Devices 100A 275V SMD P3100SB 4KV

Our Product Introduction

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Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: REACH,RoHS,ISO
- Model Number: P3100SB
- Minimum Order Quantity: 2500PCS
- Price: Negotiable
- Packaging Details: tape reel,bulk
- Delivery Time: 1-3 weeks



Product Specification

- Other Name: Thyristor Tubes
- Footprint: DO-214AA/SMB
- Pattern: Surface Amount
- VDRM (Min.): 275V
- IDRM: 5μA
- Vs @100V/μS (Max.): 350V
- Is (Max.): 800mA
- Vt @It=2.2A (Max.): 4V
- It (Max.): 2.2A
- Date Code: Nearest
- Highlight: Thyristor Surge Protection Devices 4KV,
Thyristor Surge Protection Devices 100A,
P3100SB



More Images



Product Description

SOCAY P3100SB 4KV DO-214AA P3100SB Thyristor Surge Protection Devices 100A 275V SMD

DATASHEET: [PXXX0SB_v2103.1.pdf](#)

1.Selection Method

- 1,To know the customer's product, operating voltage, application port, protection level.
- 2,Break-state voltage > DC working voltage on the circuit.
- 3,Select the capacitance value and flow rate of the device according to the application port and protection level.

Part Number	Marking	V_{DRM} @ $I_{DRM}=5\mu A$	V_S @ $100V/\mu s$	V_T @ $I_T=2.2A$	I_S	I_T	I_H	C_0 @1MHz, 2V bias
		V min	V max	V max	mA max	A max	mA min	pF typ
P0080SB	P008B	6	25	4	800	2.2	50	80
P0300SB	P03B	25	40	4	800	2.2	50	80
P0640SB	P06B	58	77	4	800	2.2	150	80
P0720SB	P07B	65	88	4	800	2.2	150	75
P0900SB	P09B	75	98	4	800	2.2	150	70
P1100SB	P11B	90	130	4	800	2.2	150	70
P1300SB	P13B	120	160	4	800	2.2	150	65
P1500SB	P15B	140	180	4	800	2.2	150	65
P1800SB	P18B	170	220	4	800	2.2	150	65
P2300SB	P23B	190	260	4	800	2.2	150	60
P2600SB	P26B	220	300	4	800	2.2	150	60
P3100SB	P31B	275	350	4	800	2.2	150	50
P3500SB	P35B	320	400	4	800	2.2	150	50
P4200SB	P42B	400	520	4	800	2.2	150	40

Notes:
 V_S is measured at 100KV/s.
 Off-state capacitance is measured in $V_{DC}=2V$, $V_{RMS}=1V$, $f=1MHz$.

Parameter	Definition
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_T	On-state Current - maximum rated continuous on-state current
V_S	Switching Voltage - maximum voltage prior to switching to on state
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
C_0	Off-state Capacitance - typical capacitance measured in off state

Series	2/10 μs^1	8/20 μs^1	10/160 μs^1	10/560 μs^1	10/1000 μs^1	5/310 μs^1	I_{TSM} 50/60 Hz	di/dt

	2/10μS ²	1.2/50μS ²	10/160μS ²	10/560μS ²	10/1000μS ²	10/700μS ²		
	A min	A min	A min	A min	A min	A min	Amps/μs max	
B	250	250	150	100	80	100	30	500
Notes: Current waveform in μs Voltage waveform in μs		- Peak pulse current rating (I _{PP}) is repetitive and guaranteed for the life of the product. - I _{PP} ratings applicable over temperature range of -40°C to +85°C - The device must initially be in thermal equilibrium with -40°C < T _J < +150°C						

High Temp Voltage Blocking	80% Rated VDRM (VAC Peak) +125°C or +150°C, Lead Material Copper Alloy High Temp Voltage Blocking 504 or 1008 hrs. MIL-STD-750 (Method 1040) JEDEC, JESD22-A-101	
Temp Cycling	-65°C to +150°C, 15 min. dwell, 10 up to 100 cycles. MIL-STD-750 (Method 1051) EIA/JEDEC, JESD22-A104	
Biased Temp & Humidity	52 VDC (+85°C) 85%RH, 504 up to 1008 hrs. EIA/ JEDEC, JESD22-A-101	
High Temp Storage	+150°C 1008 hrs. MIL-STD-750 (Method 1031) JEDEC, JESD22-A-101	
Low Temp Storage	-65°C, 1008 hrs.	
Thermal Shock	0°C to +100°C, 5 min. dwell, 10 sec. transfer, Thermal Shock 10 cycles. MIL-STD-750 (Method 1056) JEDEC, JESD22-A-106	
Autoclave (Pressure Cooker Test)	+121°C, 100%RH, 2atm, 24 up to 168 hrs. EIA/Cooker Test) JEDEC, JESD22-A-102	
Resistance to Solder Heat	+260°C, 30 secs. MIL-STD-750 (Method 2031)	
Moisture Sensitivity Level	85%RH, +85°C, 168 hrs., 3 reflow cycles Level (+260°C Peak). JEDEC-J-STD-020, Level 1	

Lead Material	Copper Alloy	
Terminal Finish	100% Matte-Tin Plated	
Body Material	UL recognized epoxy meeting flammability classification 94V-0	

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
Pxxx0SB	DO-214AA	2500	Tape & Reel - 12mm/13"tape	EIA -481 - D

Thermal Considerations

Package	Symbol	Parameter	Value	Unit
	T_J	Operating Junction Temperature Range	- 40 to + 150	°C
	T_S	Storage Temperature Range	- 40 to +150	°C
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	90	°C/W

Figure 1 - V-I Characteristics

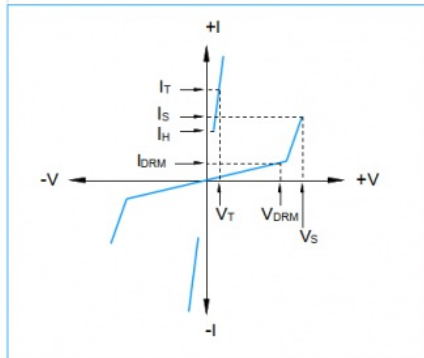


Figure 3 - Normalized V_S Change Versus Junction Temperature

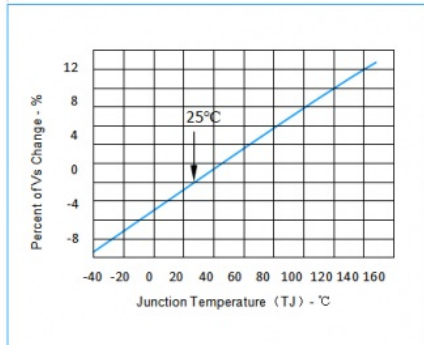


Figure 2 - $t_r \times t_d$ Pulse Waveform

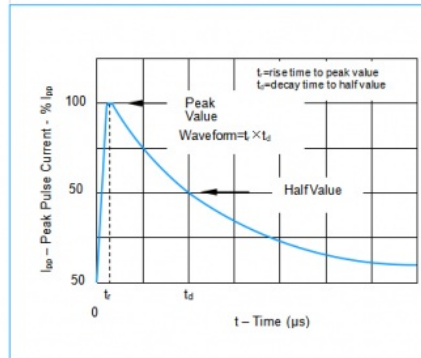
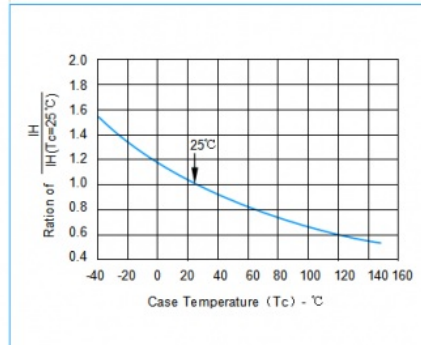
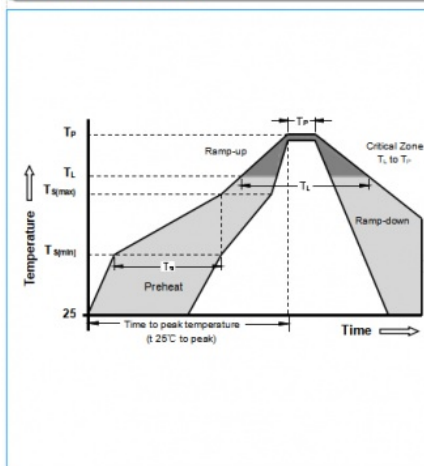


Figure 4 - Normalized DC Holding Current Versus Case Temperature



Soldering Parameters



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

