



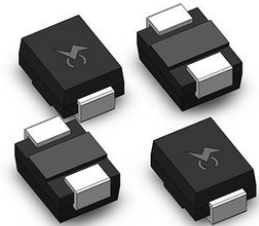
Low Capacitance Thyristor Surge Suppressors TSS Semiconductor Component P0640SB

Our Product Introduction

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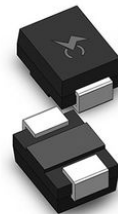
Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: REACH,RoHS,ISO
- Model Number: P0640SB
- Minimum Order Quantity: 2500PCS
- Price: Negotiable
- Packaging Details: tape reel,bulk
- Delivery Time: 1-3 weeks



Product Specification

- Key Words: Diodes
- Package: DO-214AA/SMB
- Application: Protection Circuit Board;
- Mounting Type: Surface Amount
- VDRM (Min.): 58V
- IDRM: 5μA
- Vs @100V/μS (Max.): 77V
- Is (Max.): 800mA
- Vt @It=2.2A (Max.): 4V
- It (Max.): 2.2A
- C0 @1MHz,2V Bias (Typ.): 60pF
- Highlight: Thyristor Surge Suppressors TSS,
Low Capacitance Thyristor Surge Suppressors,
P0640SB



More Images



Product Description

Low Capacitance Thyristor Surge Suppressors TSS Semiconductor Component P0640SB

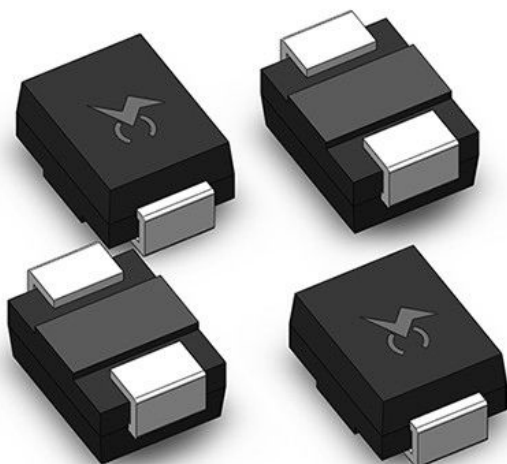
DATASHEET: [PXXX0SB_v2103.1.pdf](#)

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 $V_{DC}=2V$, $V_{RMS}=1V$, $f=1MHz$.



Introduction:

The TSS are characterised by precise conduction, fast response, high surge absorption capacity, biaxial symmetry and high reliability.

Working Principle

When connected in parallel to a circuit and the device is not moving, the resistance value is high and can be considered as an open circuit with little or no effect on the circuit. When there is an abnormal pulse, the resistance value drops instantly, releasing the current momentarily. When the abnormal high voltage disappears, it returns to its high resistance state and the circuit works normally.

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
	2/10 μS^2	1.2/50 μS^2	10/160 μS^2	10/560 μS^2	10/1000 μS^2	10/700 μS^2		
	A min	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:		- 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						
Current waveform in μs								
Voltage waveform in μs								

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
 DO-214AA	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

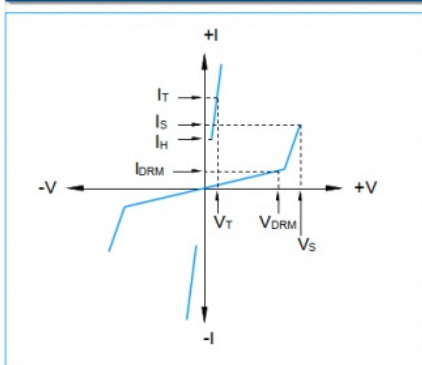


Figure 3 - Normalized V_S Change Versus Junction Temperature

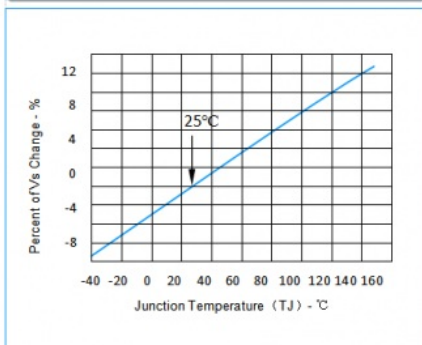


Figure 2 - $t_r \times t_d$ Pulse Waveform

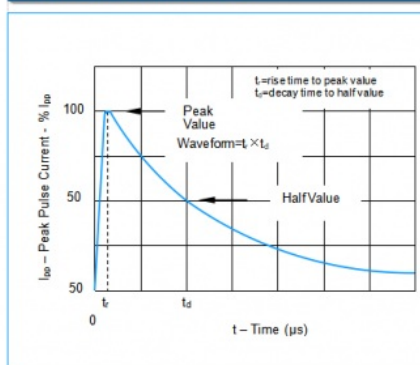
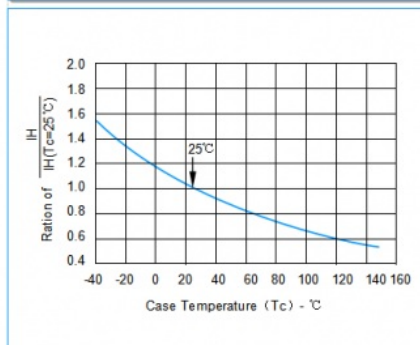
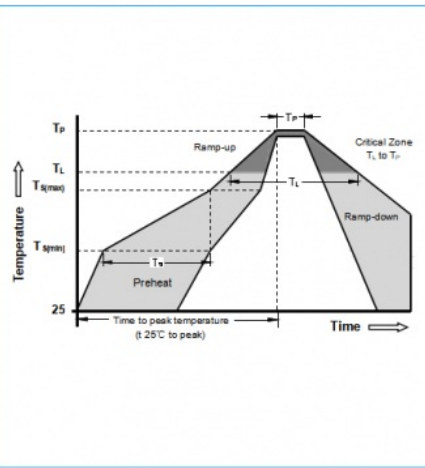


Figure 4 - Normalized DC Holding Current Versus Case Temperature



Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min (T_{gmin})	+150°C
	-Temperature Max (T_{gmax})	+200°C
	-Time (min to max) (T_g)	60 -180 Seconds
Average ramp up rate (Liquidus Temp T_L) to peak		3°C/Second Max
T_{gmax} 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

Part Numbering

PXXX 0 S B

Type _____
Median Voltage _____
Construction Variable, 0: One chip _____
2: Two chip _____
E: ESD Protection _____

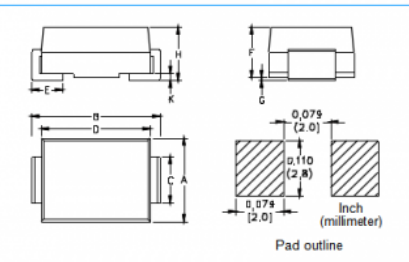
Ipp Rating: A: @10/700 μ s 2KV (50A)
B: @10/700 μ s 4KV (100A)
C: @10/700 μ s 6KV (150A)
D: @10/700 μ s 8KV (200A)

Package Type S: DO-214AA(SMB)
T: DO-214AC(SMA)
E: TO-92
L: DO-15, DO-27, DO-41
Y: SMB-H

Part Marking

PXXB Part Marking Code
(Refer to Electrical Characteristics Table)

Dimensions DO-214AA



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.130	0.156	3.30	3.95
B	0.201	0.220	5.10	5.60
C	0.077	0.087	1.95	2.20
D	0.159	0.181	4.05	4.60
E	0.030	0.063	0.76	1.60
F	0.076	0.096	1.90	2.45
G	0.002	0.008	0.05	0.20
H	0.077	0.104	1.95	2.65
K	0.006	0.016	0.15	0.41

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