Surface Mount Thyristor Surge Suppressor

Features

- ✧ Silicon technology
- ✧ Cannot be damaged by voltage
- ✧ Low capacitance
- ✧ Eliminate voltage overshoot
- ✧ Epoxy resin package
- ✧ Will not fatigue
- ✧ Complies with following standards:

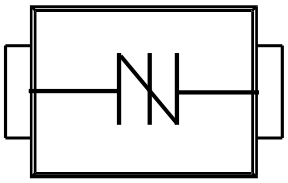
- GR1089
- ITU K.20, K.21 and K.45
- IEC 60950
- UL 60950
- TIA-968

Applications

- ✧ commercial systems
- ✧ industrial & instrumentation
- ✧ communications

Mechanical Data

- ✧ Package: SMB
- ✧ Lead Finish: Matte Tin
- ✧ RoHS/WEEE Compliant



Circuit Diagram



SMB (DO-214AA)

Absolute Maximum Rating at T_A = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Units	Remarks
Peak Pulse Voltage	V_{PP}	4000	V	10/700us
Peak Pulse Current	I_{PP}	80	A	10/1000us
Peak Pulse Current	I_{PK}	250	A	8/20us
Peak One-cycle Surge Current	I_{TSM}	25	A	60Hz
Rate of Rise of Current	di/dt	500	A/us	
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	20	℃/W	
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	℃/W	
Operating Temperature Range	T_J	-40 to 150	℃	
Storage Temperature Range	T_{STG}	-55 to 150	℃	

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Electrical Characteristics at T_A = 25 °C, unless otherwise specified

Part Number	Marking	I_H mA MIN	V_S V 100KV/S MAX	I_{S_LMT} mA	V_T V @ I_T MAX	I_T A	I_D uA @ V_D	V_D V	C_O pF 1MHz,2V_{DC} TYP
OVTS0080SB	E-8B	40	25	500	4	2.2	5	6	84
OVTS0220SB	P02B	40	30	500	4	2.2	5	15	84
OVTS0300SB	P03B	40	40	500	4	2.2	5	25	80
OVTS0640SB	P06B	120	77	800	4	2.2	5	58	76
OVTS0720SB	P07B	120	88	800	4	2.2	5	65	76
OVTS0900SB	P09B	120	98	800	4	2.2	5	75	76
OVTS1100SB	P11B	120	130	800	4	2.2	5	90	72
OVTS1300SB	P13B	120	160	800	4	2.2	5	120	72
OVTS1500SB	P15B	120	180	800	4	2.2	5	140	68
OVTS1800SB	P18B	120	220	800	4	2.2	5	170	64
OVTS2300SB	P23B	120	260	800	4	2.2	5	190	60
OVTS2600SB	P26B	120	300	800	4	2.2	5	220	56
OVTS3100SB	P31B	120	350	800	4	2.2	5	275	52
OVTS3500SB	P35B	120	400	800	4	2.2	5	320	48
OVTS4200SB	P42B	120	550	800	4	2.2	5	400	36

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Rating And Characteristic Curves at T_A = 25 °C, unless otherwise specified

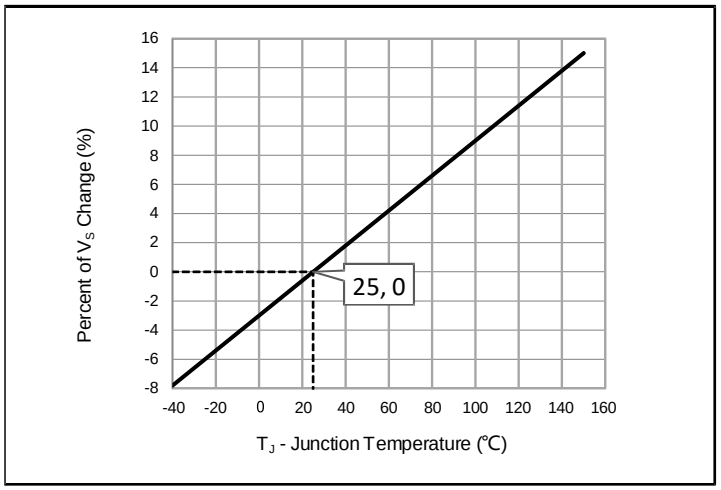

Fig.1 - Peak Pulse Current Rating

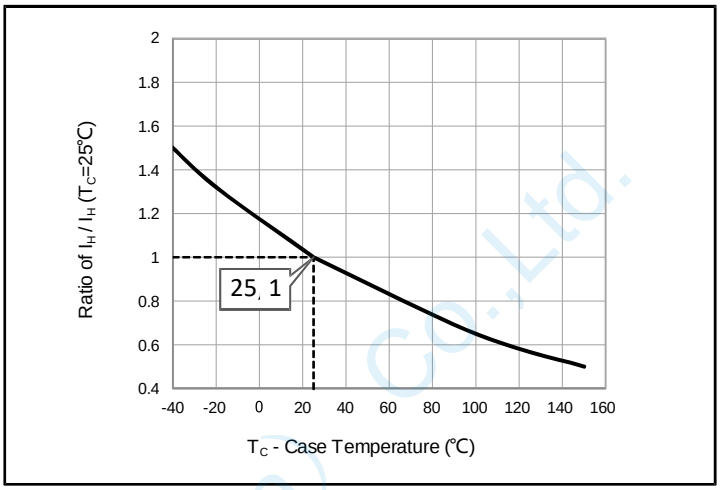

Fig.2 - Normalized DC Holding Current vs. Case Temperature

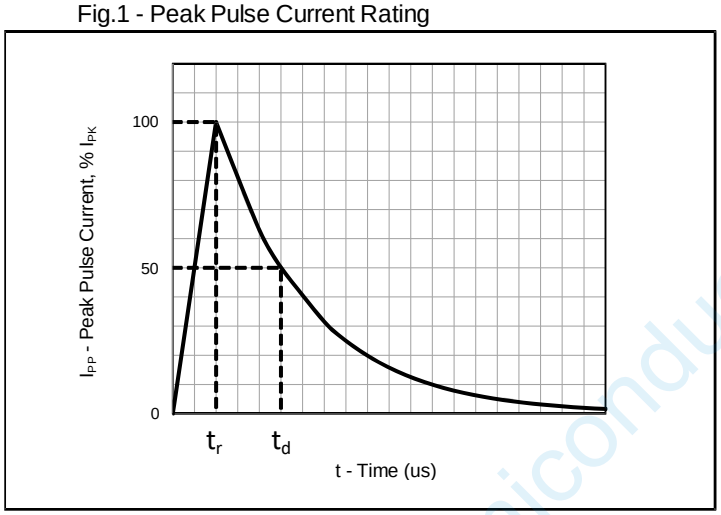

Fig.3 - tr/td us Pulse Waveform

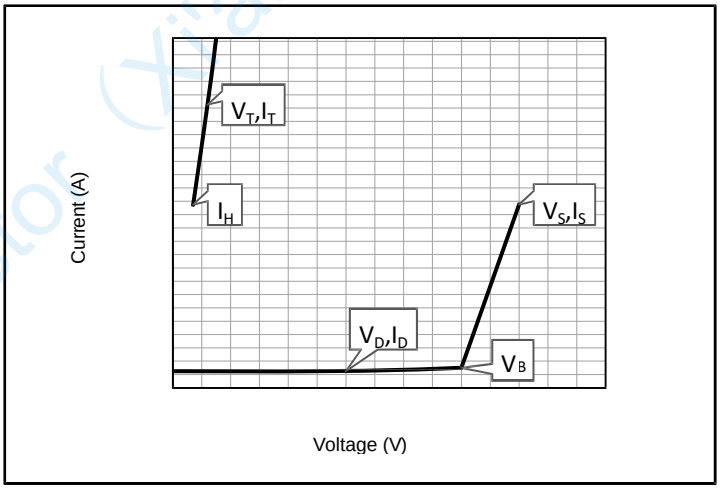

Fig.4 - VI Curve

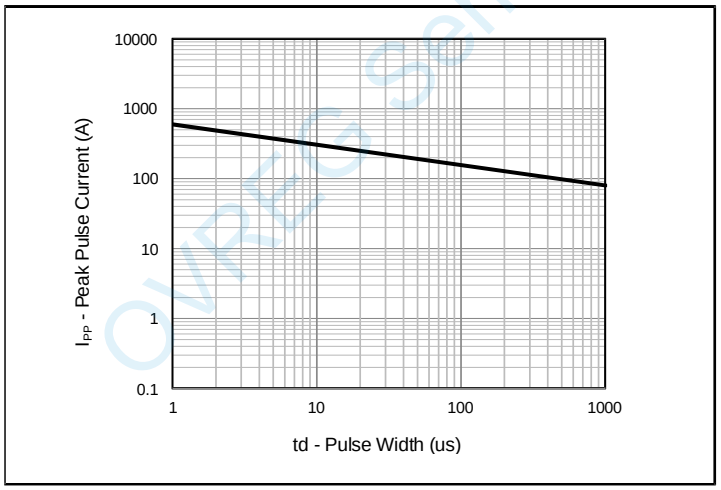

Fig.5 - Peak Pulse Current Rating

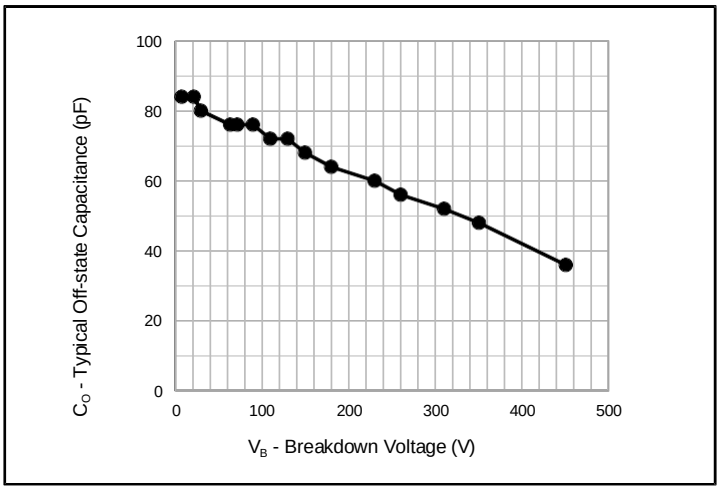

Fig.6 - Typical Off-state Capacitance

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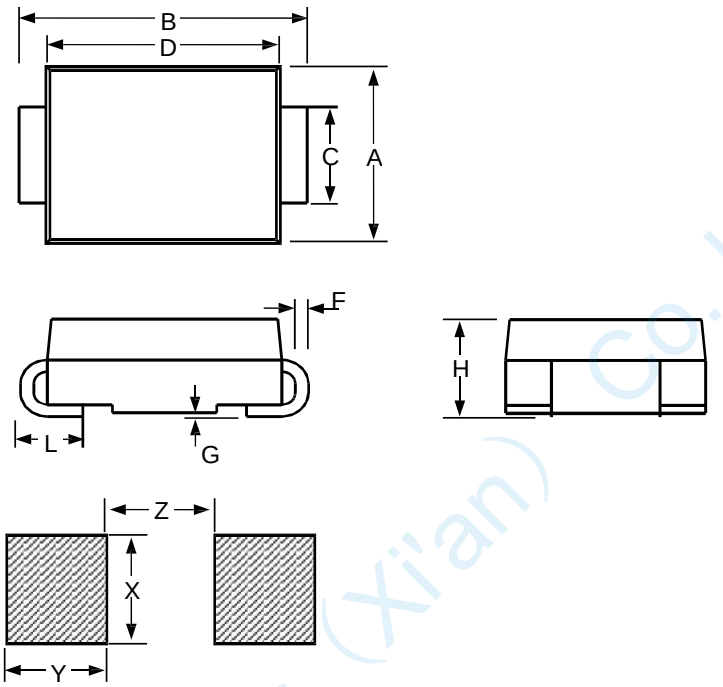
Package information



SMB						
Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.134	0.144	0.155	3.4	3.67	3.94
B	0.205	0.213	0.22	5.21	5.4	5.59
C	0.075	0.079	0.083	1.9	2	2.1
D	0.169		0.185	4.3		4.7
L	0.03		0.06	0.76		1.52
F	0.006		0.012	0.152		0.305
G	-		0.008	-		0.203
H	0.085	0.091	0.096	2.15	2.3	2.45
X		0.11			2.8	
Y		0.079			2	
Z		0.079			2	

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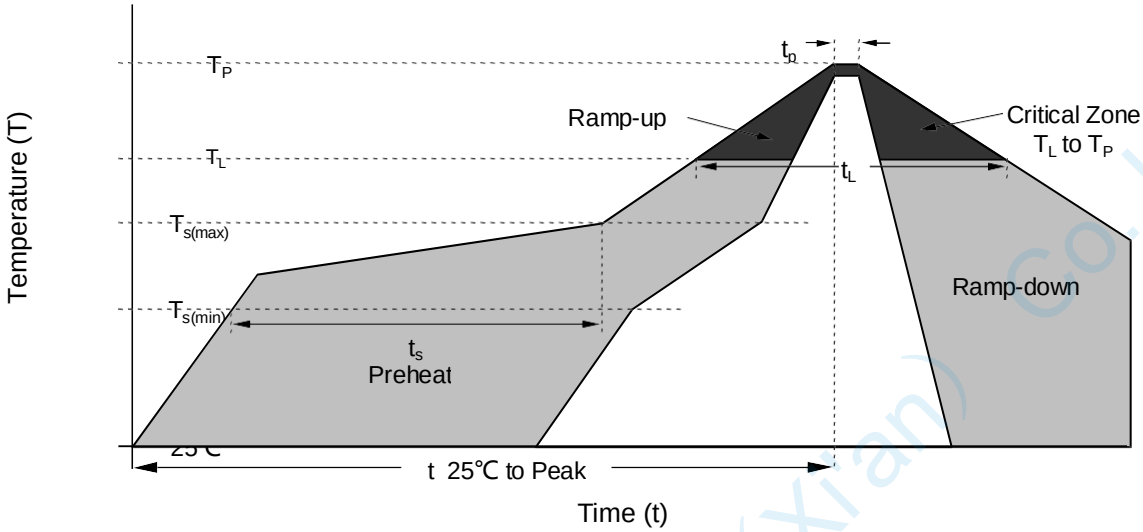
Soldering Parameters



Reflow Condition		Lead-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 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{S(max)}$ to TL - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 – 150 secs
Peak Temperature (T_P)		$260^{+0/-5\ °C}$
Time within 5°C of actual peak Temperature (t_p)		20 – 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C

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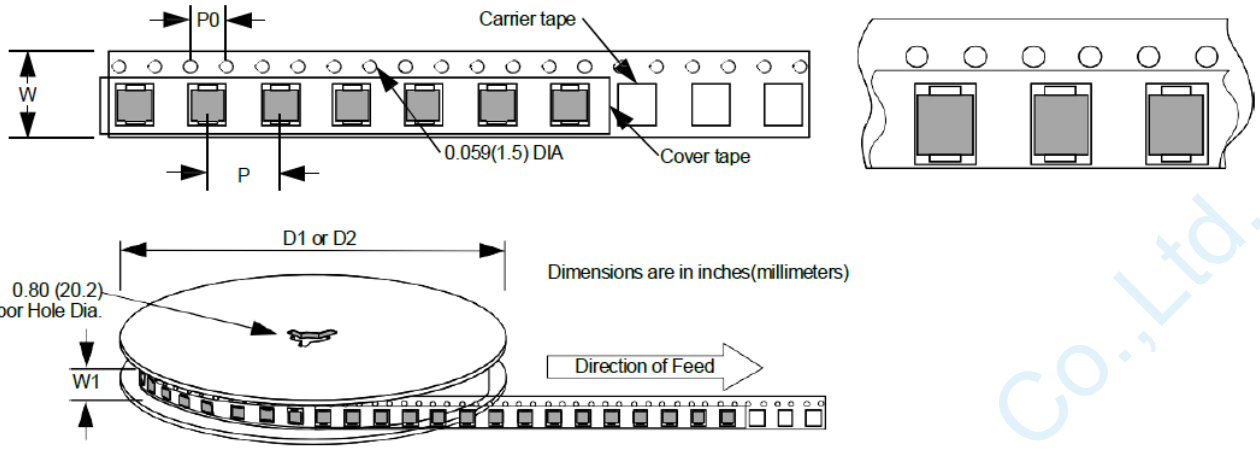
Tape and Reel Specification



Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
P		0.315			8	
P0		0.157			4	
W		0.472			12	
W1		0.492			12.5	
D1		7			177.8	
D2		13			330.2	

Marking



xxxB = Marking Code
YYWW = Date Code

Ordering Information

Package	Packing Description	Packing Quantity	Industry Standard
SMB	Tape/Reel,13" reel	3000	EIA-481-1
	Tape/Reel,7" reel	500	EIA-481-1

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