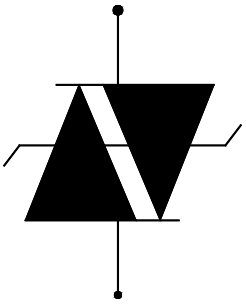
Features

- For surface mounted applications to optimize board space
- Low profile package
- Bidirectional crowbar protection
- Low leakage current : I = 5uA max
- Low on-state voltage
- Low Capacitance
- Response Time is < 1us
- YD/T 950 IEC 61000-4-5
- YD/T 993 ITU K.20/21
- YD/T 1082 TIA-968-A
- GR 1089 Intra-building
- Solid-state silicon technology
- Meets MSL 1 Requirements
- ROHS compliant

SMB



Schematic Diagram

Maximum Ratings and Electrical Characteristics

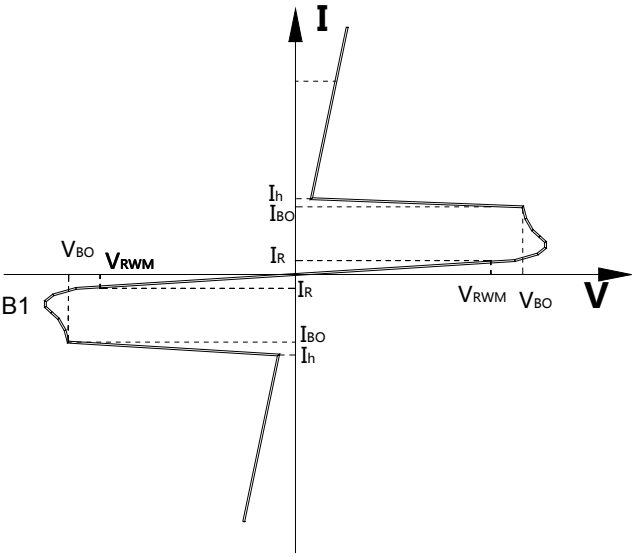
Symbol	Parameter		Value	Unit
I_{PP}	Non-repetitive peak pulse current	10/1000 us	80	A
V_{PP}	Non-repetitive peak pulse voltage	10/700us	4000	V
V_{ESD}	ESD Rating per IEC61000-4-2:	Contact Air	8 15	KV
Ts	Storage temperature range		-40 to +150	℃
Tj	Maximum junction temperature		150	℃

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied,damage may occur and reliability may be affected.

**Other voltages may be available upon request.*

Electrical Parameters

Symbol	Parameter
V_{RM}	Peak off-state voltage
I_{RM}	Off-state current
V_S	Switching voltage
I_S	Switching current
V_T	On-state voltage
I_T	On-state current
I_H	Holding current
C_O	Off-state capacitance



Revision B1

Parameter	TestsConditions	Min.	Typ.	Max.	Unit
V_{RM}	I_{RM}=1μA	275			V
I_{RM}	V_{RM}			5	uA
V_s	1KV/μs			350	V
V_T	I_T=2.2A			4	V
I_H	10A，10/1000μs		120		mA
C_O	2V，1MHz			45	pF
I_S				800	mA

Typical electrical characterist applications

Rating and Characteristics Curves

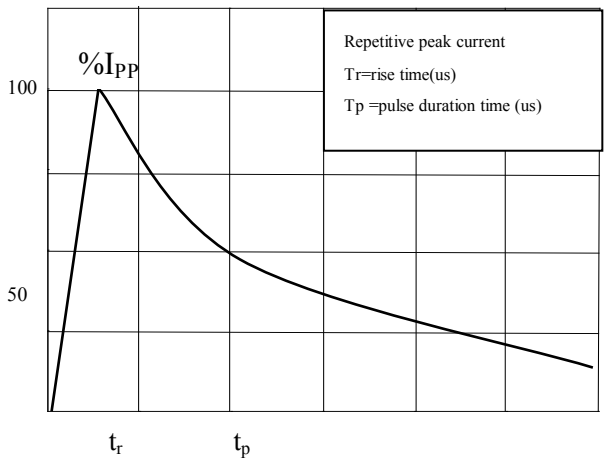


Fig.1 Pulse Waveform (5/310us)

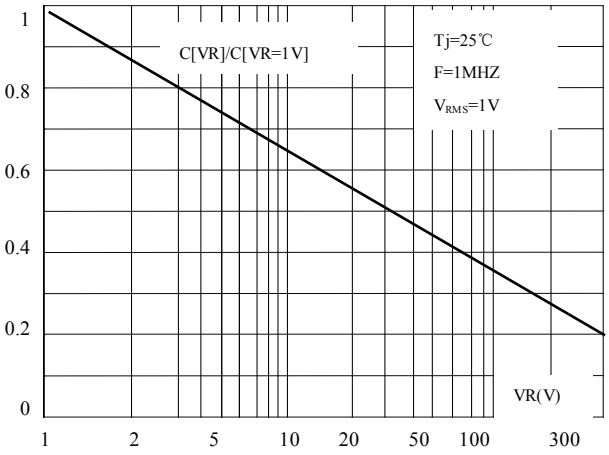


Fig. 2 Relation Variation Of Junction Capacitance Versus Reverse Voltage Applied (Typical Values)

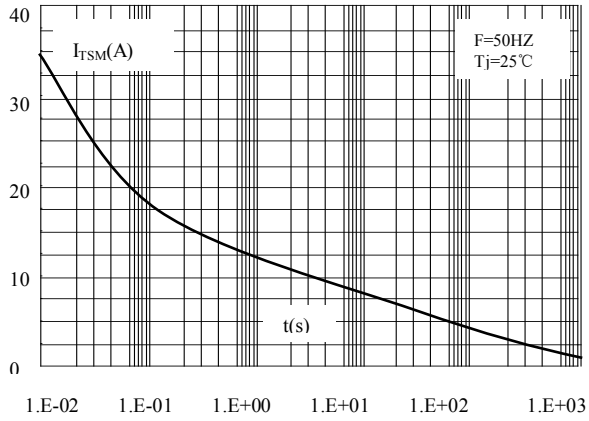


Fig.3 Non Repetitive Surge Peek On-State Current Versus Overload Duration

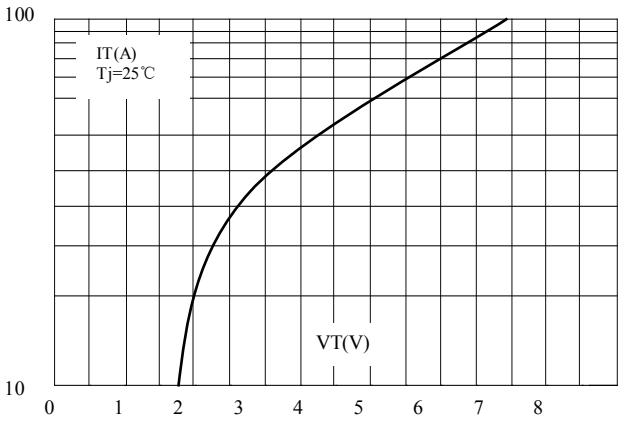


Fig.4 On-State Voltage Versus On-State Current (Typical Values)

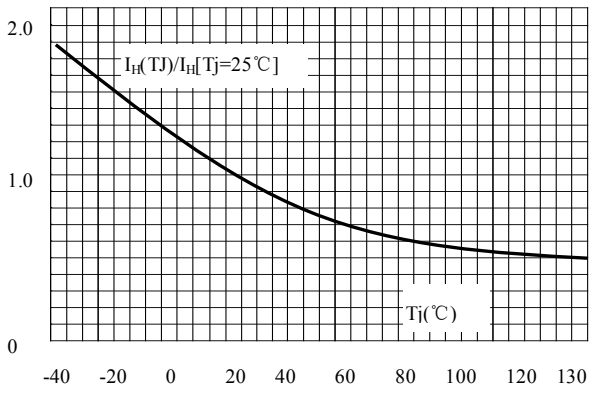


Fig.5 Relative Variation of Hold Current Versus Junction Temperature

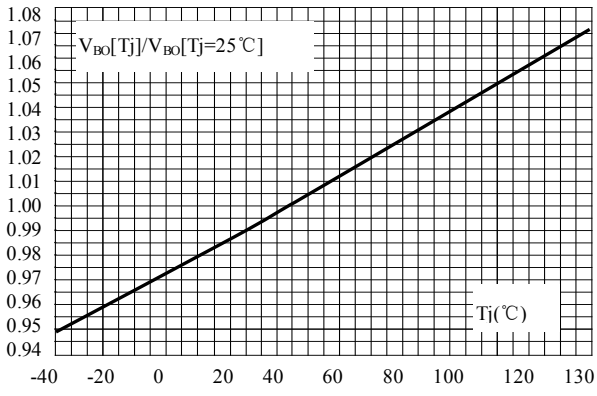


Fig.6 Relative Variation of Break Over Voltage Versus Junction Temperature

Typical electrical characterist applications

Rating and Characteristics Curves

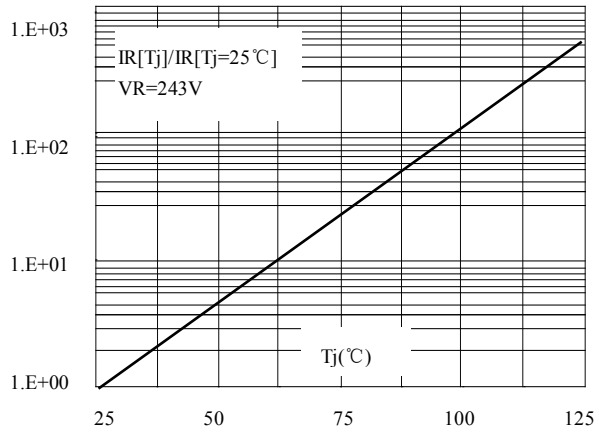


Fig.7 Relative Variation Of Leakage Current Versus Reverse Voltage (Typical Values)

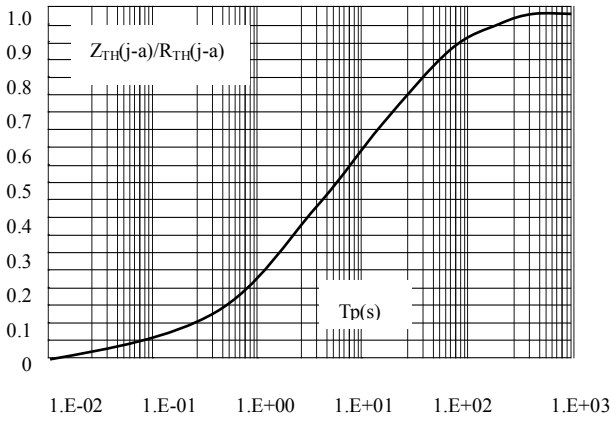
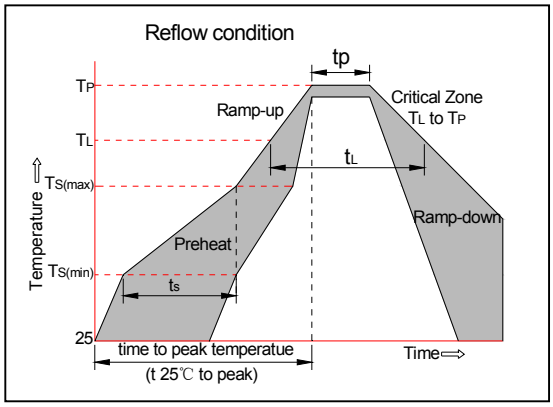


Fig.8 Variation Of Thermal Impedance Junction To Ambient Versus Pulse Duration

SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L)to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

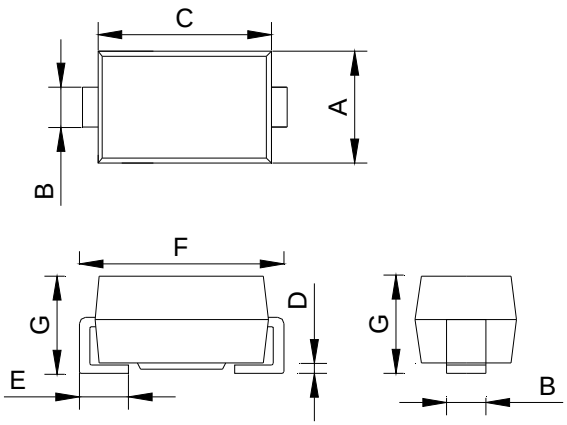


Package information

SMB

SMB Mechanical Data

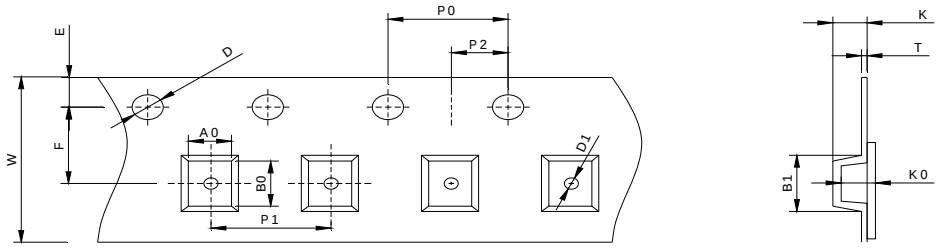
- Case: SMB
- Case Material: Molded Plastic. UL Flammability
- Classification Rating 94V-0
- Weight: 0.003 ounces, 0.096 gram



DIM	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.30	3.62	3.94	0.130	0.142	0.155
B	1.95	2.08	2.20	0.077	0.082	0.087
C	4.06	4.40	4.57	0.160	0.173	0.180
D	0.125	0.20	0.305	0.005	0.008	0.012
E	0.76	1.14	1.52	0.030	0.045	0.06
F	4.95	5.40	5.59	0.194	0.213	0.22
G	2.05	2.30	2.50	0.080	0.090	0.098

SMB

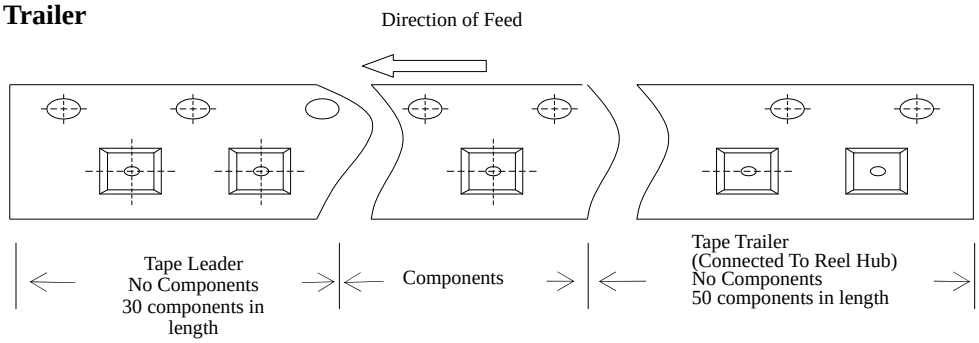
SMB Reel Dim



A0	B0	B1	D	D1	E	F	K0	T	W	P0	P1	P2
4.0	5.9	6.1	1.5	1.5	1.75	5.5	3.0	0.50	12.0	4.0	8.0	2.0

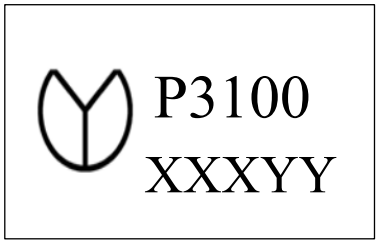
Dimension is in mm

Leader and Trailer

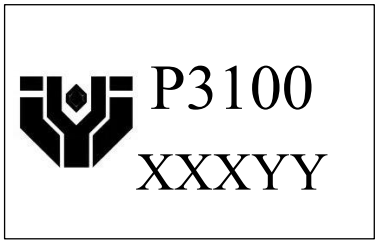


The LEADER is a minimum of 30 components in length and it consists of empty cavities with sealed cover tape
The TRAILER is a minimum of 50 components in length and it consists of empty cavities with sealed cover tape.

Marking Codes



OR



Note:

(1) "P3100X" is part number,fixed.

(2) "XXX" is the last 3 characters of the wafer's Lot No.,
"YY" is internal code.

Ordering Information

Device	Qty per Reel	Reel Size
P3100SBX	3000	13 Inch

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