

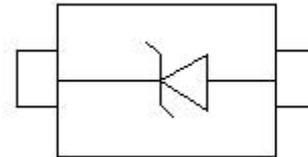
SSCTXXX12DB Series

Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors

- **Feature**

- ✧ Voltage Range 3.3V - 440V
- ✧ 600W Peak Pulse Power Dissipation
- ✧ For surface mounted applications
- ✧ Reliable low cost construction utilizing molded plastic technique
- ✧ Response Time is Typically < 1 ns
- ✧ Uni-direction, less than 5.0ns for Bi-direction, form 0 Volts to BV min
- ✧ ESD Rating of above 16 kV per Human Body Model
- ✧ ESD Rating of above 30 kV (Contact Discharge) per IEC61000-4-2
- ✧ EFT (Electrical Fast Transients) Rating of 40 A per IEC61000-4-4
- ✧ Plastic material has UL flammability classification 94V-0
- ✧ Typical IR less than 1uA above 10V
- ✧ Meets MSL 1 Requirements
- ✧ Solid-state silicon avalanche technology
- ✧ ROHS compliant

- **PIN configuration**



Topview

- **Applications**

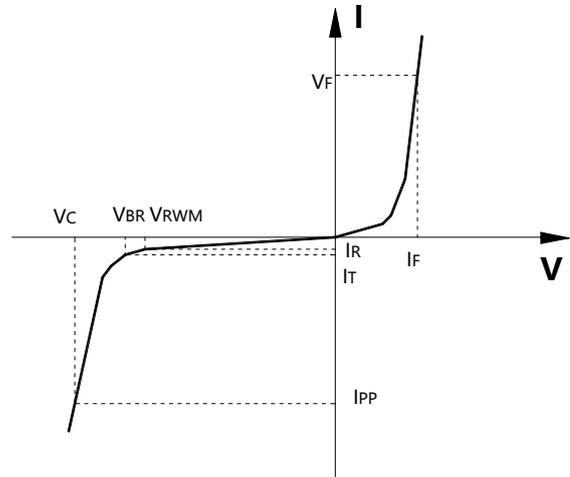
Hand-Held Portable Applications
 Networking and Telecom(Ethernet 10/100/1000 Base T)
 USB Interface
 Automotive Electronics
 Serial and Parallel Ports
 Notebooks, Desktops, Servers

- **Mechanical data**

Lead finish:100% matte Sn(Tin)
 Mounting position: Any
 Qualified max reflow temperature:260°C
 Device meets MSL 1 requirements
 Pure tin plating: 7 ~ 17 um
 Pin flatness:≤3mil

● Electronic Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C	Junction Capacitance



● Absolute maximum rating @TA=25°C

Parameter	Symbol	Value	Unit
Peak Power Dissipation At $T_j = 25^\circ\text{C}$, $T_p = 1\text{ms}$ (Note 1,2)	P_{PPP}	600	Watts
Peak Forward Surge Current 8.3ms single half sine-wave super	I_{FSM}	100	A
Lead Soldering Temperature	T_L	260 (10 sec.)	$^\circ\text{C}$
Operating Temperature Range	T_J	-55 ~ 150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ 150	$^\circ\text{C}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Non-repetitive current pulse, per fig. 4 and derated above $T_A = 25^\circ\text{C}$ per fig.1.
2. Thermal Resistance junction to Lead
3. 8.3ms single half-sine wave duty cycle= 4 pulses maximum per minute (unidirectional units only).
4. Ratings at 25°C ambient temperature unless otherwise specified.
5. Single phase, half wave, 60Hz, resistive or inductive load.
6. For Capacitive Load, Derate Current By 20%

● Electrical Characteristics @TA=25°C

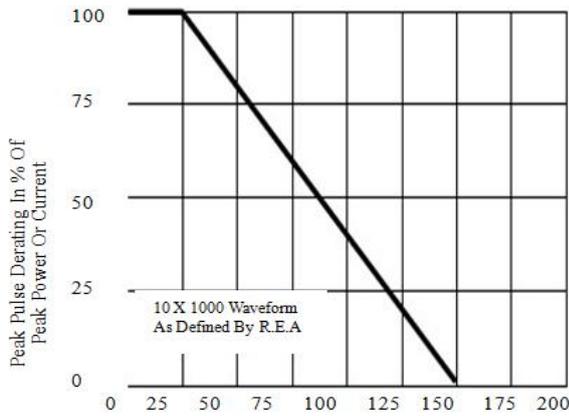
SMBJ PART NUMBER		MARKING CODE		V_{RWM}	$V_{BR} @ I_T$ (V)		I_T	$I_R @ V_{RWM}$	$V_C(\text{Max})$	$I_{PP}(\text{Max})$
Uni-polar	Bi-polar	Uni	Bi	(V)	Min	Max	(mA)	(μA)	(V)	(A)
SSCT5V011DB	SSCT5V012DB	KE	AE	5.0	6.38	7.35	10	800	9.2	65.3
SSCT6V011DB	SSCT6V012DB	KG	AG	6.0	6.67	7.89	10	800	10.3	58.3
SSCT6V511DB	SSCT6V512DB	KK	AK	6.5	7.22	8.30	10	500	11.2	53.6
SSCT7V011DB	SSCT7V012DB	KM	AM	7.0	7.78	8.95	10	200	12.0	50.0
SSCT7V511DB	SSCT7V512DB	KP	AP	7.5	8.33	9.58	1	100	12.9	46.5



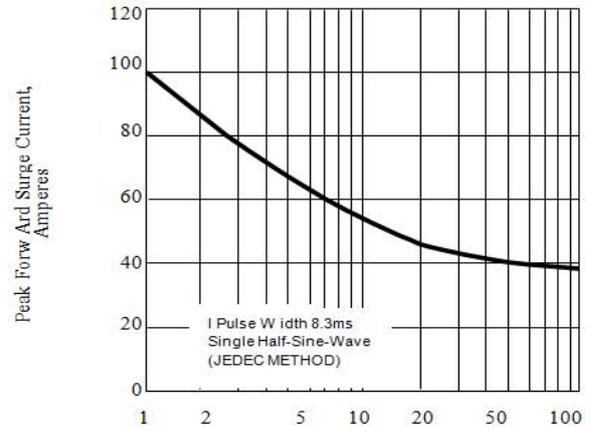
SSCTXXX12DB

SSCT8V011DB	SSCT8V012DB	KR	AR	8.0	8.89	10.23	1	50	13.6	44.1
SSCT8V511DB	SSCT8V512DB	KT	AT	8.5	9.44	10.82	1	20	14.4	41.7
SSCT9V011DB	SSCT9V012DB	KV	AV	9.0	10.0	11.5	1	10	15.4	39.0
SSCT10V11DB	SSCT10V12DB	KX	AX	10	11.1	12.8	1	5	17.0	35.3
SSCT11V11DB	SSCT11V12DB	KZ	AZ	11	12.2	14.0	1	5	18.2	33.0
SSCT12V11DB	SSCT12V12DB	LE	BE	12	13.3	15.3	1	5	19.9	30.2
SSCT13V11DB	SSCT13V12DB	LG	BG	13	14.4	16.5	1	5	21.5	27.9
SSCT14V11DB	SSCT14V12DB	LK	BK	14	15.6	17.9	1	5	23.2	25.9
SSCT15V11DB	SSCT15V12DB	LM	BM	15	16.7	19.2	1	5	24.4	24.6
SSCT16V11DB	SSCT16V12DB	LP	BP	16	17.8	20.5	1	5	26.0	23.1
SSCT17V11DB	SSCT17V12DB	LR	BR	17	18.9	21.7	1	5	27.6	21.7
SSCT18V11DB	SSCT18V12DB	LT	BT	18	20.0	23.3	1	5	29.2	20.5
SSCT20V11DB	SSCT20V12DB	LV	BV	20	22.2	25.5	1	5	32.4	18.5
SSCT22V11DB	SSCT22V12DB	LX	BX	22	24.4	28.0	1	5	35.5	16.9
SSCT24V11DB	SSCT24V12DB	LZ	BZ	24	26.7	30.7	1	5	38.9	15.4
SSCT26V11DB	SSCT26V12DB	ME	CE	26	28.9	33.2	1	5	42.1	14.3
SSCT28V11DB	SSCT28V12DB	MG	CG	28	31.1	35.8	1	5	45.4	13.2
SSCT30V11DB	SSCT30V12DB	MK	CK	30	33.3	38.3	1	5	48.4	12.4
SSCT33V11DB	SSCT33V12DB	MM	CM	33	36.7	42.2	1	5	53.3	11.3
SSCT36V11DB	SSCT36V12DB	MP	CP	36	40.0	46.0	1	5	58.1	10.3
SSCT40V11DB	SSCT40V12DB	MR	CR	40	44.4	51.1	1	5	64.5	9.3
SSCT43V11DB	SSCT43V12DB	MT	CT	43	47.8	54.9	1	5	69.4	8.6
SSCT45V11DB	SSCT45V12DB	MV	CV	45	50.0	57.5	1	5	72.7	8.3
SSCT48V11DB	SSCT48V12DB	MX	CX	48	53.3	61.3	1	5	77.4	7.8
SSCT51V11DB	SSCT51V12DB	MZ	CZ	51	56.7	65.2	1	5	82.4	7.3
SSCT54V11DB	SSCT54V12DB	NE	DE	54	60.0	69.0	1	5	87.1	6.9
SSCT58V11DB	SSCT58V12DB	NG	DG	58	64.4	74.1	1	5	93.6	6.4
SSCT60V11DB	SSCT60V12DB	NK	DK	60	66.7	76.7	1	5	96.8	6.2
SSCT64V11DB	SSCT64V12DB	NM	DM	64	71.1	81.8	1	5	103	5.8
SSCT70V11DB	SSCT70V12DB	NP	DP	70	77.8	89.5	1	5	113	5.3
SSCT75V11DB	SSCT75V12DB	NR	DR	75	83.0	95.8	1	5	121	5.0
SSCT78V11DB	SSCT78V12DB	NT	DT	78	86.0	99.7	1	5	126	4.8
SSCT85V11DB	SSCT85V12DB	NV	DV	85	94.0	108.2	1	5	137	4.4
SSCT90V11DB	SSCT90V12DB	NX	DX	90	100	115.5	1	5	146	4.1

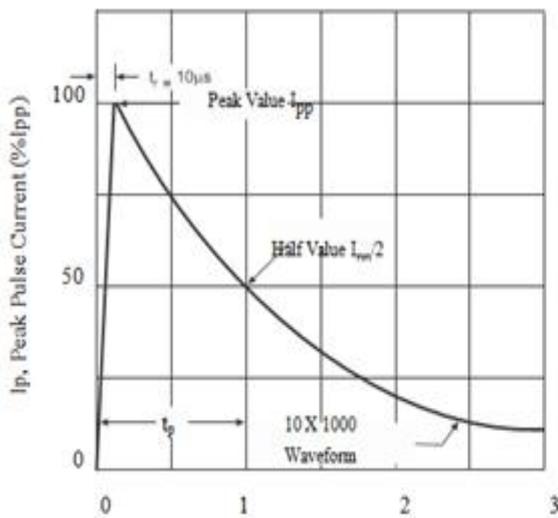
● Typical Performance Characteristics



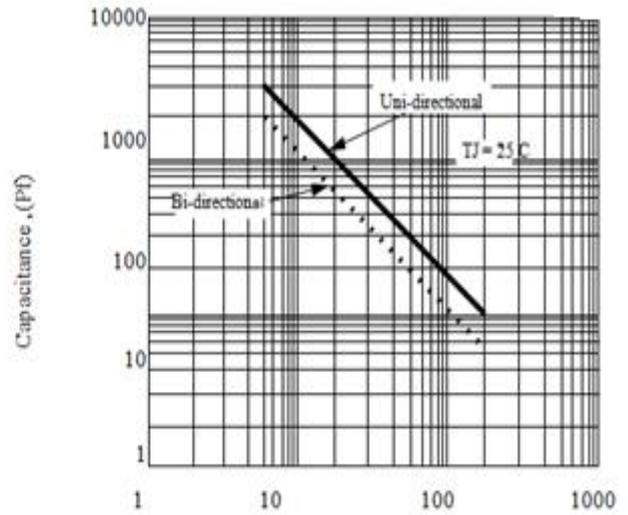
T_a , Ambient Temperature (°C)
Fig. 1 Pulse Derating Curve



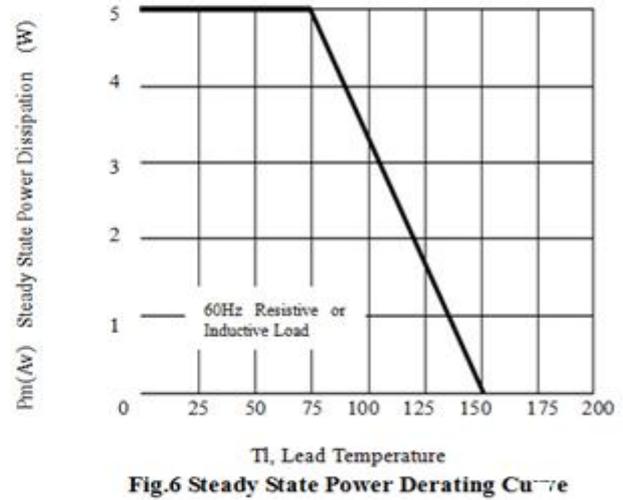
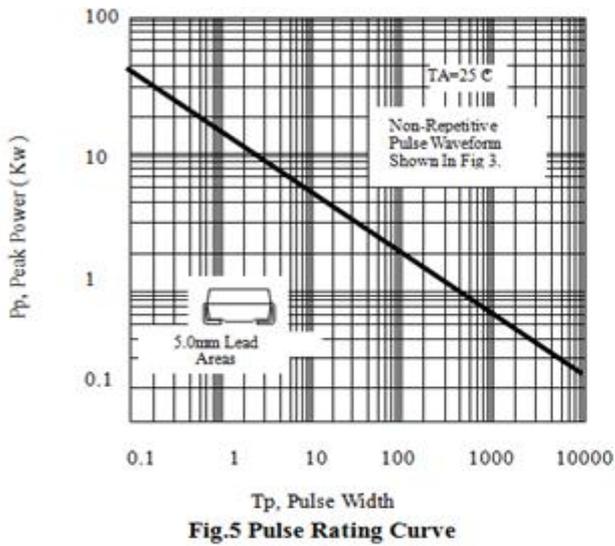
Number Of Cycles At 60hz
Fig.2 Maximum Non-Repetitive Surge Current



T_p , Pulse Width(us)
Fig.3 Pulse Rating Curve

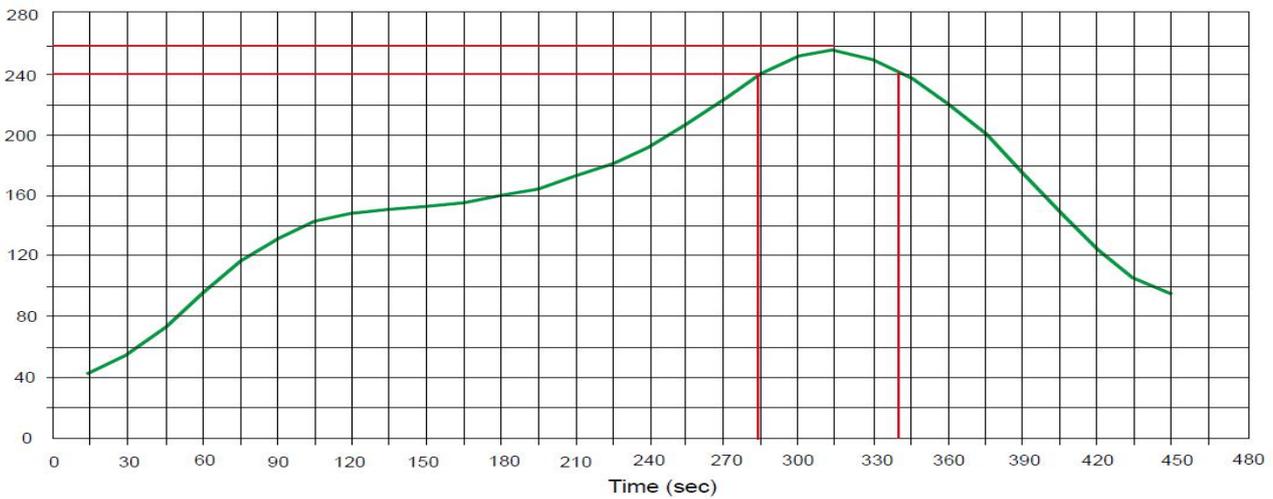


Stand-Off Voltage, Volts
Fig.4 Typical Junction Capacitance



- **Solder Reflow Recommendation**

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec





SSCTXXX12DB

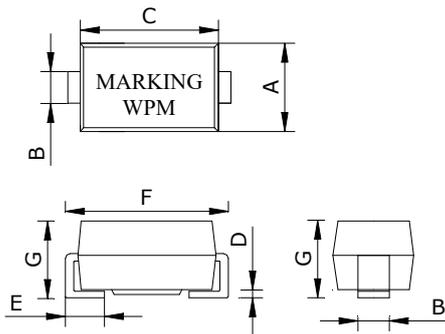
● Package Information

Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCTXXX12DB	SMB	3000	13 Inch

Mechanical Data

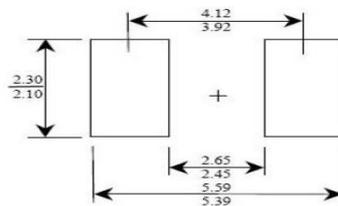
- Case: SMB
- Case Material: Molded Plastic. UL Flammability



SMB

DIM	Millimeters		
	Min	Nom	Max
A	3.30	3.60	3.94
B	1.80	2.00	2.21
C	4.05	4.45	5.30
D	0.051	0.20	0.203
E	0.76	1.14	1.52
F	5.08	5.25	5.59
G	2.05	2.30	2.45

Recommended Pad outline



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