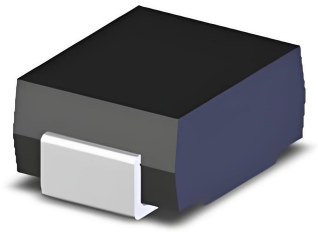
ECTNCZCxxVx

Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors

Features

- 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



SMB

Ordering Information		
Device	**Qty per Reel**	**Reel Size**
ECTNCZCxxVx	3000	13Inch

"xx" =Working Peak Reverse Voltage

Maximum Ratings and Electrical Characteristics			
Characteristics	**Symbols**	**Value**	**Unit**
Peak Power Dissipation At T_j = 25℃, T_p = 1ms (Note 1,2)	P_{PK}	600	W
Peak Forward Surge Current 8.3ms single half sine-wave super	I_{FSM}	100	A
Lead Soldering Temperature	T_L	260 (10 sec.)	^{0}C
Operating Temperature Range	T_J	-55 to +155	^{0}C
Storage Temperature Range	T_{STG}	-55 to +175	^{0}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 TA= 25 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℃ ambient temperature unless otherwise specified.

5.Single phase, half wave, 60Hz, resistive or inductive load.

6. For Capacitive Load, Derate Current By 20%

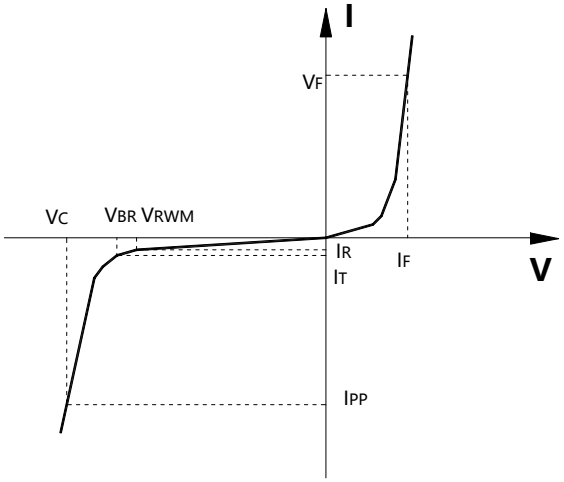
Electrical Characteristics (Tamb=25℃ Unless Otherwise Specified)

PART NUMBER		MARKING CODE		V_{RWM}	V_{BR} @ IT (V)		I_T	I_R @ V_{RWM}	V_C (Max)	I_{PP} (Max)
Uni-polar	Bi-polar	Uni	Bi	(V)	Min	Max	(mA)	(uA)	(V)	(A)
ECTNCZC5VU	ECTNCZC5VB	KE	AE	5.0	6.38	7.35	10	800	9.2	65.3
ECTNCZC6VU	ECTNCZC6VB	KG	AG	6.0	6.67	7.89	10	800	10.3	58.3
ECTNCZC6V5U	ECTNCZC6V5B	KK	AK	6.5	7.22	8.30	10	500	11.2	53.6
ECTNCZC7VU	ECTNCZC7VB	KM	AM	7.0	7.78	8.95	10	200	12.0	50.0
ECTNCZC7V5U	ECTNCZC7V5B	KP	AP	7.5	8.33	9.58	1	100	12.9	46.5
ECTNCZC8VU	ECTNCZC8VB	KR	AR	8.0	8.89	10.23	1	50	13.6	44.1
ECTNCZC8V5U	ECTNCZC8V5B	KT	AT	8.5	9.44	10.82	1	20	14.4	41.7
ECTNCZC9VU	ECTNCZC9VB	KV	AV	9.0	10.0	11.5	1	10	15.4	39.0
ECTNCZC10VU	ECTNCZC10VB	KX	AX	10	11.1	12.8	1	5	17.0	35.3
ECTNCZC11VU	ECTNCZC11VB	KZ	AZ	11	12.2	14.0	1	5	18.2	33.0
ECTNCZC12VU	ECTNCZC12VB	LE	BE	12	13.3	15.3	1	5	19.9	30.2
ECTNCZC13VU	ECTNCZC13VB	LG	BG	13	14.4	16.5	1	5	21.5	27.9
ECTNCZC14VU	ECTNCZC14VB	LK	BK	14	15.6	17.9	1	5	23.2	25.9
ECTNCZC15VU	ECTNCZC15VB	LM	BM	15	16.7	19.2	1	5	24.4	24.6
ECTNCZC16VU	ECTNCZC16VB	LP	BP	16	17.8	20.5	1	5	26.0	23.1
ECTNCZC17VU	ECTNCZC17VB	LR	BR	17	18.9	21.7	1	5	27.6	21.7
ECTNCZC18VU	ECTNCZC18VB	LT	BT	18	20.0	23.3	1	5	29.2	20.5
ECTNCZC20VU	ECTNCZC20VB	LV	BV	20	22.2	25.5	1	5	32.4	18.5
ECTNCZC22VU	ECTNCZC22VB	LX	BX	22	24.4	28.0	1	5	35.5	16.9
ECTNCZC24VU	ECTNCZC24VB	LZ	BZ	24	26.7	30.7	1	5	38.9	15.4
ECTNCZC26VU	ECTNCZC26VB	ME	CE	26	28.9	33.2	1	5	42.1	14.3
ECTNCZC28VU	ECTNCZC28VB	MG	CG	28	31.1	35.8	1	5	45.4	13.2
ECTNCZC30VU	ECTNCZC30VB	MK	CK	30	33.3	38.3	1	5	48.4	12.4
ECTNCZC33VU	ECTNCZC33VB	MM	CM	33	36.7	42.2	1	5	53.3	11.3
ECTNCZC36VU	ECTNCZC36VB	MP	CP	36	40.0	46.0	1	5	58.1	10.3
ECTNCZC40VU	ECTNCZC40VB	MR	CR	40	44.4	51.1	1	5	64.5	9.3
ECTNCZC43VU	ECTNCZC43VB	MT	CT	43	47.8	54.9	1	5	69.4	8.6
ECTNCZC45VU	ECTNCZC45VB	MV	CV	45	50.0	57.5	1	5	72.7	8.3
ECTNCZC48VU	ECTNCZC48VB	MX	CX	48	53.3	61.3	1	5	77.4	7.8
ECTNCZC51VU	ECTNCZC51VB	MZ	CZ	51	56.7	65.2	1	5	82.4	7.3
ECTNCZC54VU	ECTNCZC54VB	NE	DE	54	60.0	69.0	1	5	87.1	6.9
ECTNCZC58VU	ECTNCZC58VB	NG	DG	58	64.4	74.1	1	5	93.6	6.4
ECTNCZC60VU	ECTNCZC60VB	NK	DK	60	66.7	76.7	1	5	96.8	6.2
ECTNCZC64VU	ECTNCZC64VB	NM	DM	64	71.1	81.8	1	5	103	5.8
ECTNCZC70VU	ECTNCZC70VB	NP	DP	70	77.8	89.5	1	5	113	5.3
ECTNCZC75VU	ECTNCZC75VB	NR	DR	75	83.0	95.8	1	5	121	5.0
ECTNCZC78VU	ECTNCZC78VB	NT	DT	78	86.0	99.7	1	5	126	4.8
ECTNCZC85VU	ECTNCZC85VB	NV	DV	85	94.0	108.2	1	5	137	4.4
ECTNCZC90VU	ECTNCZC90VB	NX	DX	90	100	115.5	1	5	146	4.1

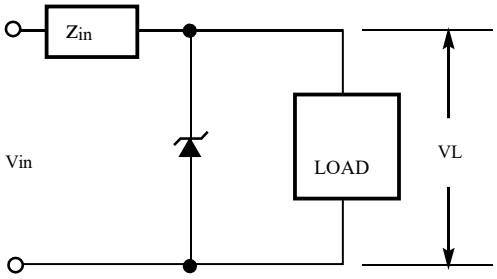
Electrical Characteristics (Tamb=25℃ Unless Otherwise Specified)

PART NUMBER		MARKING CODE		VRWM	VBR @ IT (V)		IT	IR @ VRWM	VC (Max)	IPP (Max)
Uni-polar	Bi-polar	Uni	Bi	(V)	Min	Max	(mA)	(uA)	(V)	(A)
ECTNCZC100VU	ECTNCZC100VB	NZ	DZ	100	111	128.0	1	5	162	3.7
ECTNCZC110VU	ECTNCZC110VB	PE	EE	110	122	140.5	1	5	177	3.4
ECTNCZC120VU	ECTNCZC120VB	PG	EG	120	133	153.0	1	5	193	3.1
ECTNCZC130VU	ECTNCZC130VB	PK	EK	130	144	165.5	1	5	209	2.9
ECTNCZC150VU	ECTNCZC150VB	PM	EM	150	167	192.5	1	5	243	2.5
ECTNCZC160VU	ECTNCZC160VB	PP	EP	160	178	205.0	1	5	259	2.3
ECTNCZC170VU	ECTNCZC170VB	PR	ER	170	189	217.5	1	5	275	2.2
ECTNCZC180VU	ECTNCZC180VB	PT	ET	180	200	230.4	1	5	290	2.1
ECTNCZC190VU	ECTNCZC190VB	PV	EV	190	211	243.2	1	5	306	2.0
ECTNCZC200VU	ECTNCZC200VB	PX	EX	200	222	256.0	1	5	322	1.9
ECTNCZC210VU	ECTNCZC210VB	PZ	EZ	210	233	268.8	1	5	339	1.8
ECTNCZC220VU	ECTNCZC220VB	QE	FE	220	244	281.6	1	5	355	1.7
ECTNCZC250VU	ECTNCZC250VB	QG	FG	250	278	309.0	1	5	403	1.5
ECTNCZC300VU	ECTNCZC300VB	QK	FK	300	333	371.0	1	5	484	1.2
ECTNCZC350VU	ECTNCZC350VB	QM	FM	350	389	432.0	1	5	565	1.1
ECTNCZC400VU	ECTNCZC400VB	QP	FP	400	444	494.0	1	5	645	0.9
ECTNCZC440VU	ECTNCZC440VB	QR	FR	440	489	543.0	1	5	710	0.8

Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_R	Leakage current at V_{RWM}
I_{PP}	Peak pulse current



Typical Protection Circuit



Typical electrical characterist applications

Rating and Characteristics Curves

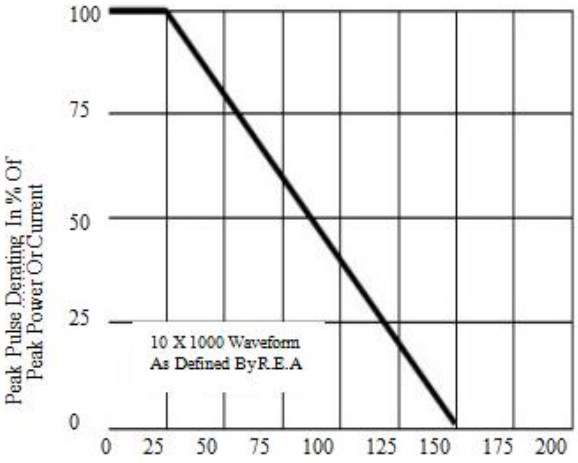


Fig. 1 Pulse Derating Curve

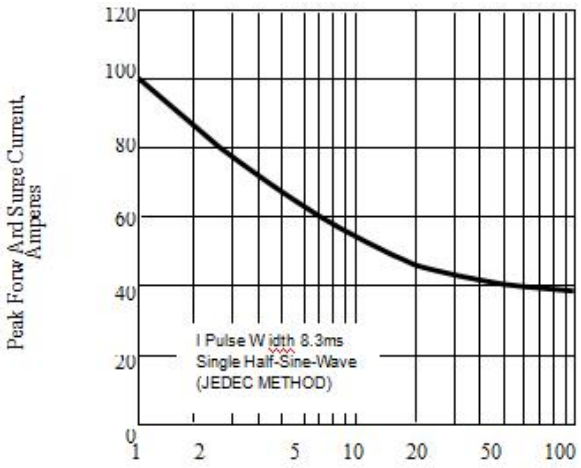


Fig.2 Maximum Non-Repetitive Surge Current

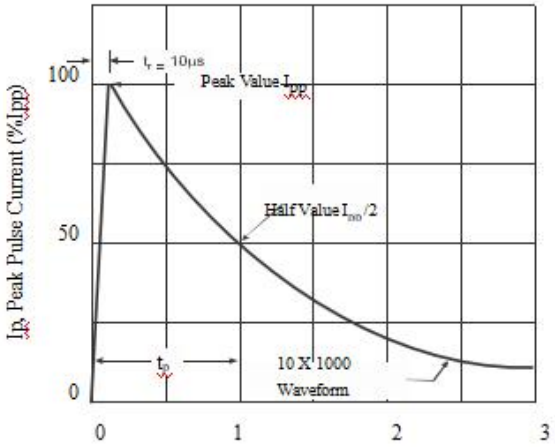


Fig.3 Pulse Rating Curve

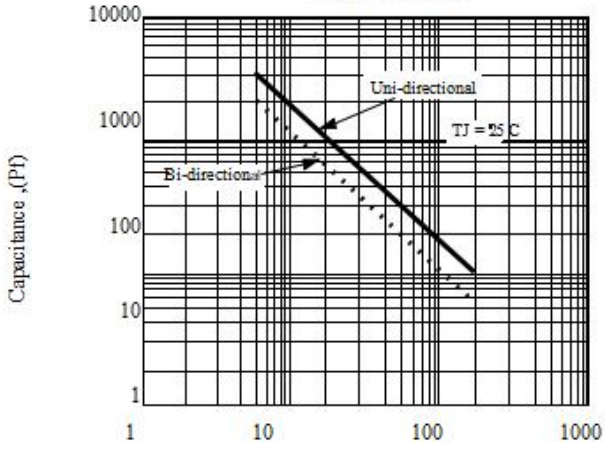


Fig.4 Typical Junction Capacitance

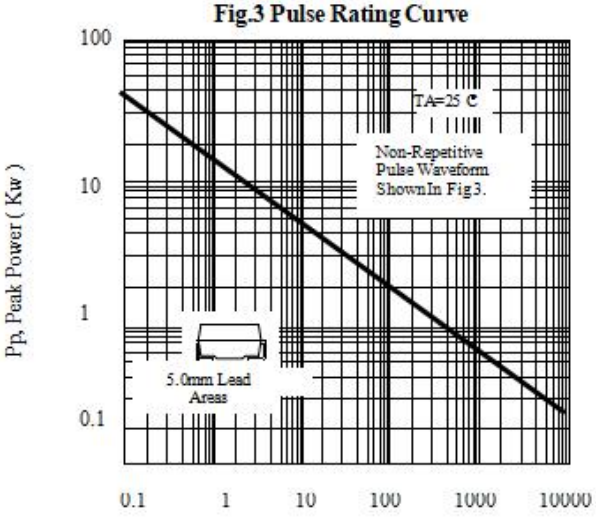


Fig.5 Pulse Rating Curve

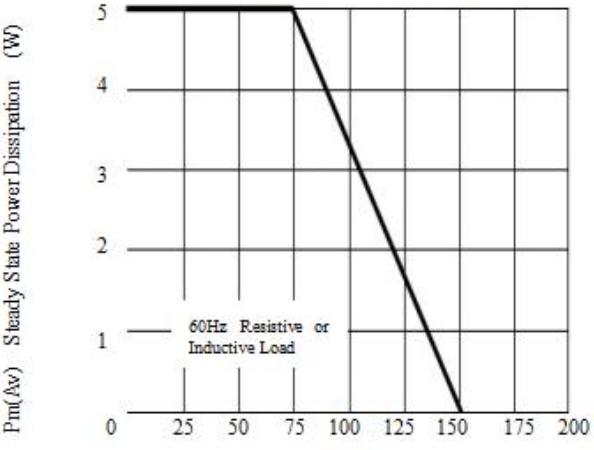


Fig.6 Steady State Power Derating Curve

Package Information

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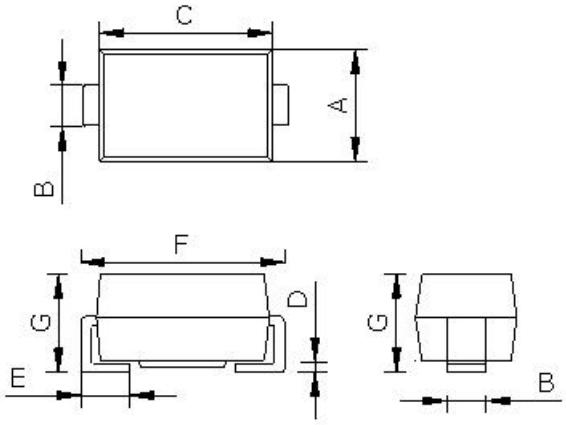
Mechanical Data

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



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

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Recommended Pad outline