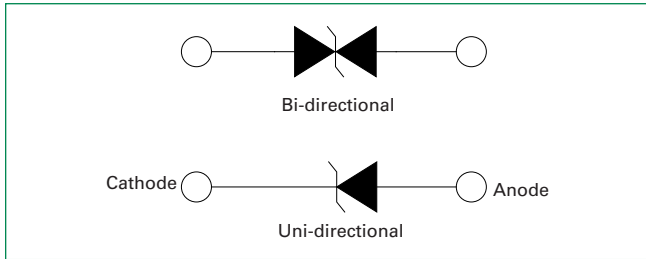
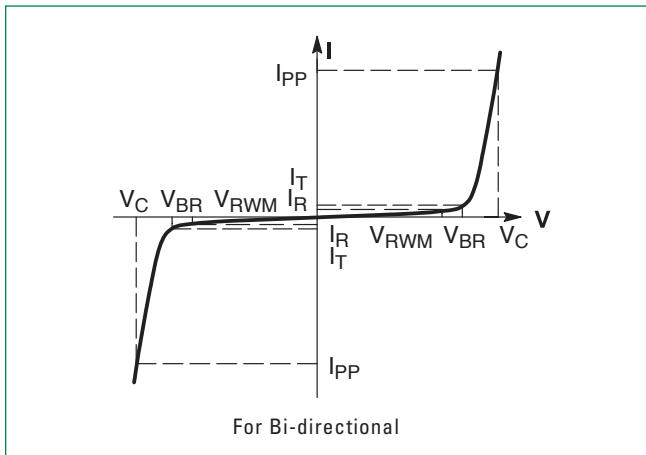




## Functional Diagram

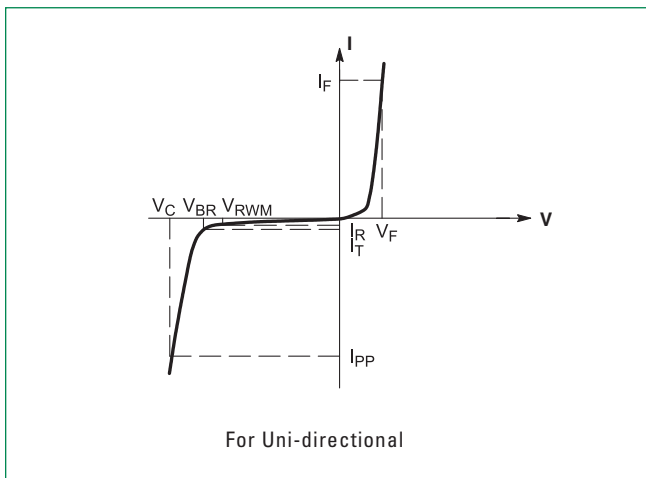


## I-V Curve Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted) – For Bi-directional



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


## I-V Curve Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 3.5\text{ V Max.}$ @ $I_F = 30\text{ A}$ for all types) (Note 5) – For Uni-directional



Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$

5. 1/2 sine wave or equivalent, PW = 8.3 ms, non-repetitive duty cycle.

## Electrical Characteristics – For Uni-directional

Device	Device Marking	V <sub>RWM</sub> (Note 10)	I <sub>R</sub> @ V <sub>RWM</sub>	Breakdown Voltage				V <sub>C</sub> @ I <sub>PP</sub> (Note 8)		C Typ. (Note 9)	Agency Approval 
				V <sub>BR</sub> @ I <sub>T</sub> (V) (Note 7)			@ I <sub>T</sub>	V <sub>C</sub>	I <sub>PP</sub>		
				Volts	μA	MIN	NOM	MAX	mA	Volts	
SZ1SMA5.0AT3G	QE	5.0	400	6.40	6.70	7.00	10	9.2	43.5	2035	X
SZ1SMA6.0AT3G	QG	6.0	400	6.67	7.02	7.37	10	10.3	38.8	1730	X
SZ1SMA6.5AT3G	QK	6.5	250	7.22	7.60	7.98	10	11.2	35.7	1605	X
SZ1SMA8.0AT3G	QR	8.0	25	8.89	9.36	9.83	1	13.6	29.4	1035	X
SZ1SMA8.5AT3G	QT	8.5	5.0	9.44	9.92	10.40	1	14.4	27.8	1265	X
SZ1SMA9.0AT3G	QV	9.0	2.5	10.00	10.55	11.10	1	15.4	26.0	1200	X
SZ1SMA10AT3G	QX	10	2.5	11.10	11.70	12.30	1	17.0	23.5	1090	X
SZ1SMA11AT3G	QZ	11	2.5	12.20	12.85	13.50	1	18.2	22.0	1000	X
SZ1SMA12AT3G	RE	12	2.5	13.30	14.00	14.70	1	19.9	20.1	925	X
SZ1SMA13AT3G	RG	13	2.5	14.40	15.15	15.90	1	21.5	18.6	860	X
SZ1SMA14AT3G	RH	14	2.5	15.60	16.40	17.20	1	23.2	17.2	800	X
SZ1SMA15AT3G	RM	15	2.5	16.70	17.60	18.50	1	24.4	16.4	758	X
SZ1SMA16AT3G	RP	16	2.5	17.80	18.75	19.70	1	26.0	15.4	715	X
SZ1SMA17AT3G	RR	17	2.5	18.90	19.90	20.90	1	27.6	14.5	680	X
SZ1SMA18AT3G	RT	18	2.5	20.00	21.05	22.10	1	29.2	13.7	645	X
SZ1SMA20AT3G	RV	20	2.5	22.20	23.35	24.50	1	32.4	12.3	585	X
SZ1SMA22AT3G	RX	22	2.5	24.40	25.65	26.90	1	35.5	11.3	540	X
SZ1SMA24AT3G	RZ	24	2.5	26.70	28.10	29.50	1	38.9	10.3	500	X
SZ1SMA26AT3G	SE	26	2.5	28.90	30.40	31.90	1	42.1	9.5	460	X
SZ1SMA28AT3G	SG	28	2.5	31.10	32.75	34.40	1	45.4	8.8	430	X
SZ1SMA30AT3G	SK	30	1.0	33.30	35.05	36.80	1	48.4	8.3	405	X
SZ1SMA33AT3G	SM	33	2.5	36.70	38.65	40.60	1	53.3	7.5	375	X
SZ1SMA36AT3G	SP	36	2.5	40.00	42.10	44.20	1	58.1	6.9	345	X
SZ1SMA40AT3G	SR	40	2.5	44.40	46.75	49.10	1	64.5	6.2	315	X
SZ1SMA43AT3G	ST	43	2.5	47.80	50.30	52.80	1	69.4	5.8	295	X
SZ1SMA45AT3G	SV	45	2.5	50.00	52.65	55.30	1	72.2	5.5	280	X
SZ1SMA48AT3G	SX	48	2.5	53.30	56.10	58.90	1	77.4	5.2	265	X
SZ1SMA54AT3G	TE	54	2.5	60.00	63.15	66.30	1	87.1	4.6	240	X
SZ1SMA58AT3G	TG	58	2.5	64.40	67.80	71.50	1	93.6	4.3	225	X
SZ1SMA70AT3G	TP	70	2.5	77.80	81.90	86.00	1	113.0	3.5	190	X

## Electrical Characteristics - For Bi-directional

Device	Device Marking	V <sub>RWM</sub> (Note 6)	I <sub>F</sub> @ V <sub>RWM</sub>	Breakdown Voltage				V <sub>C</sub> @ I <sub>PP</sub> (Note 8)		Agency Approval 
				V <sub>BR</sub> @ I <sub>T</sub> (V) (Note 7)			@ I <sub>T</sub>	V <sub>C</sub>	I <sub>PP</sub>	
				Volts	μA	MIN	NOM	MAX	mA	
SZ1SMA10CAT3G	QXC	10	2.5	11.10	11.69	12.27	1	17.0	23.5	X
SZ1SMA12CAT3G	REC	12	2.5	13.30	14.00	14.70	1	19.9	20.1	X
SZ1SMA13CAT3G	RGC	13	2.5	14.40	15.16	15.92	1	21.5	18.6	X
SZ1SMA15CAT3G	RMC	15	2.5	16.70	17.58	18.46	1	24.4	16.4	X
SZ1SMA16CAT3G	RPC	16	2.5	17.80	18.74	19.67	1	26.0	15.4	X
SZ1SMA18CAT3G	RTC	18	2.5	20.00	21.06	22.11	1	29.2	13.7	X
SZ1SMA20CAT3G	RVC	20	2.5	22.20	23.37	24.54	1	32.4	12.3	X
SZ1SMA24CAT3G	RZC	24	2.5	26.70	28.11	29.51	1	38.9	10.3	X
SZ1SMA26CAT3G	SEC	26	2.5	28.90	30.42	31.94	1	42.1	9.5	X
SZ1SMA28CAT3G	SGC	28	2.5	31.10	32.74	34.37	1	45.4	8.8	X
SZ1SMA30CAT3G	SKC	30	2.5	33.30	35.06	36.81	1	48.4	8.3	X
SZ1SMA33CAT3G	SMC	33	2.5	36.70	38.63	40.56	1	53.3	7.5	X
SZ1SMA36CAT3G	SPC	36	2.5	40.00	42.11	44.21	1	58.1	6.9	X
SZ1SMA40CAT3G	SRC	40	2.5	44.40	46.74	49.07	1	64.5	6.2	X
SZ1SMA43CAT3G	SSC	43	2.5	47.93	50.30	52.70	1	69.0	5.8	
SZ1SMA45CAT3G	STC	45	2.5	50.02	52.73	55.43	1	71.5	5.6	
SZ1SMA48CAT3G	SXC	48	2.5	53.30	56.11	58.91	1	77.4	5.2	X
SZ1SMA58CAT3G	TGC	58	2.5	64.40	67.79	71.18	1	93.6	4.3	X
SZ1SMA60CAT3G	TKC	60	2.5	66.70	70.21	73.72	1	96.8	4.1	X
SZ1SMA70CAT3G	TPC	70	2.5	77.80	81.90	85.99	1	113.0	3.5	X
SZ1SMA78CAT3G	TTC	78	2.5	86.70	91.27	95.83	1	126.0	3.2	X

6. A transient suppressor is normally selected according to the working peak reverse voltage (V<sub>RWM</sub>), which should be equal to or greater than the DC or continuous peak operating voltage level

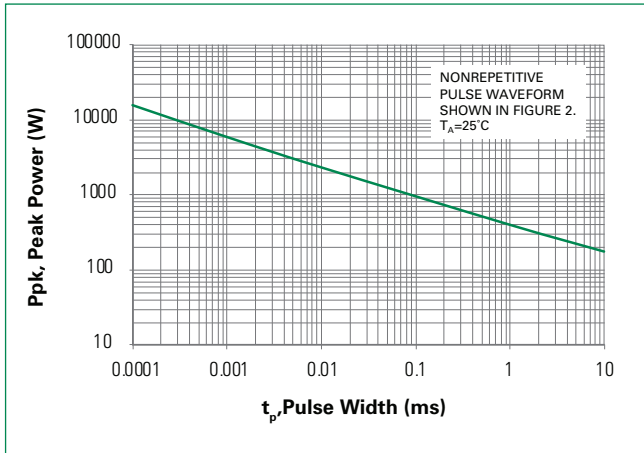
7. V<sub>BR</sub> measured at pulse test current I<sub>T</sub> at an ambient temperature of 25°C

8. Surge current waveform per Figure 2 and derate per Figure 3

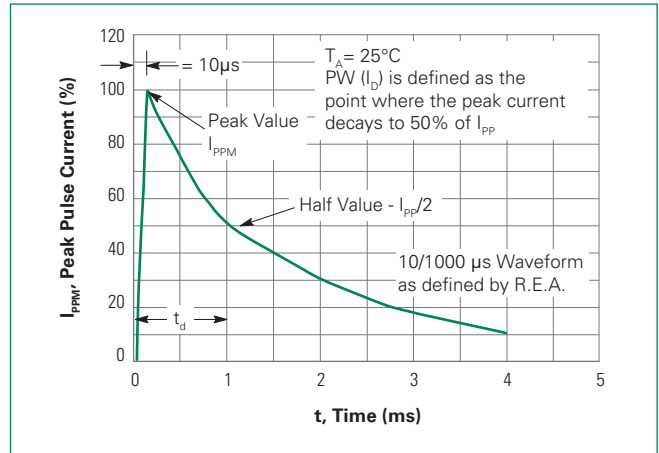
9. Bias voltage = 0 V, F = 1.0 MHz, T<sub>J</sub> = 25°C.

## Ratings and Characteristic Curves

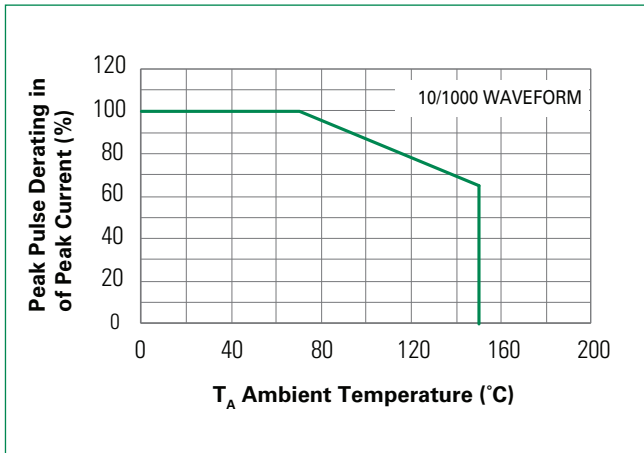
### Figure 1. Pulse Rating Curve



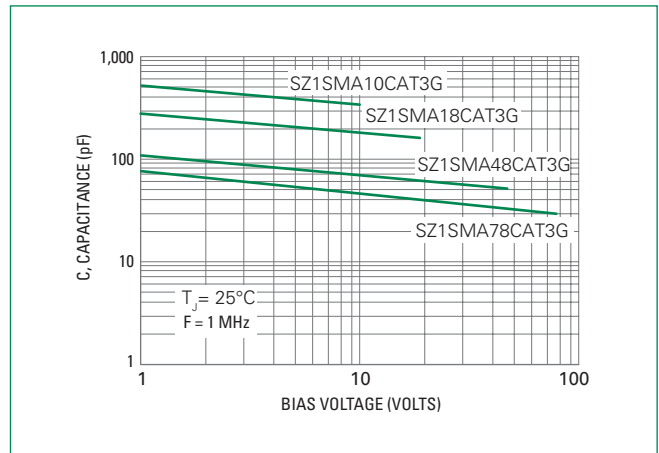
### Figure 2. Pulse Waveform



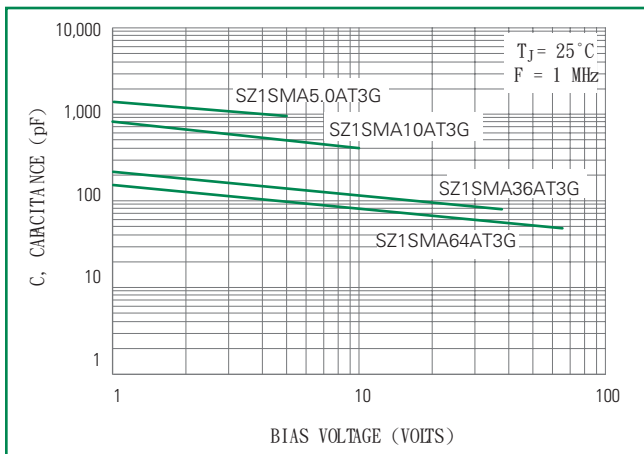
### Figure 3 - Surge Derating Curve



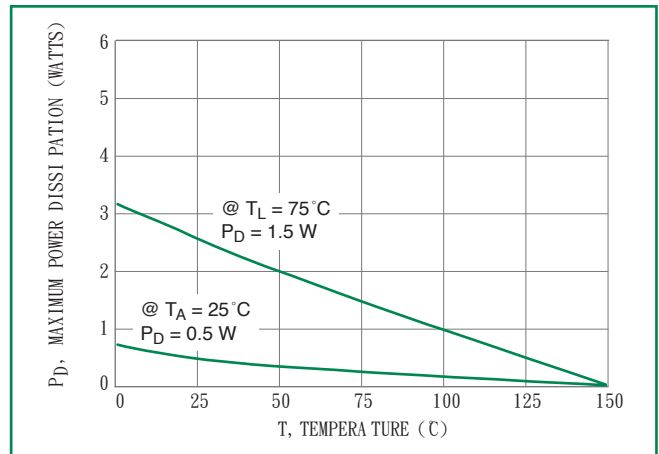
### Figure 4. Typical Junction Capacitance vs. Bias Voltage



### Figure 5. Typical Junction Capacitance vs. Bias Voltage

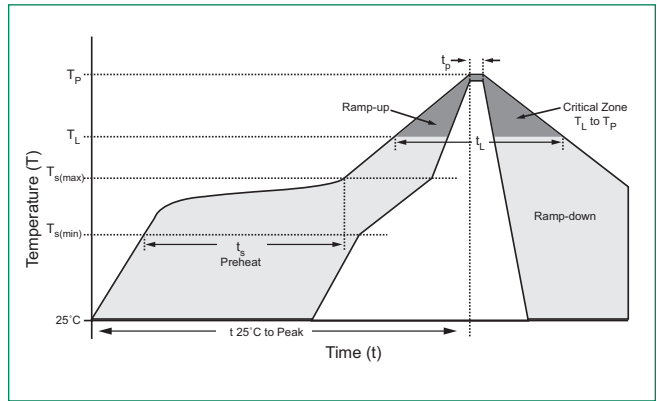


### Figure 6. Steady State Power Derating



## Soldering Parameters

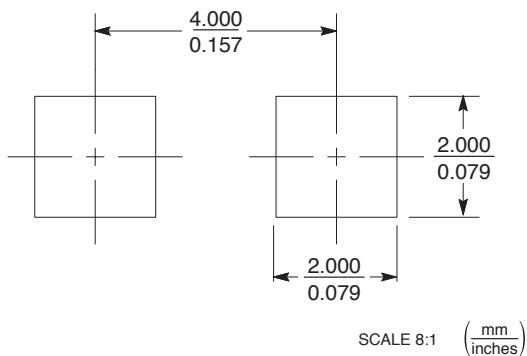
<b>Reflow Condition</b>		Lead-free assembly
<b>Pre Heat</b>	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (min to max) ( $t_p$ )	60 – 120 secs
<b>Average ramp up rate (Liquidus Temp (<math>T_L</math>) to peak)</b>		3°C/second max
<b><math>T_{s(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>		3°C/second max
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Time (min to max) ( $t_L$ )	60 – 150 seconds
<b>Peak Temperature (<math>T_p</math>)</b>		260 <sup>+0/-5</sup> °C
<b>Time within 5°C of actual peak Temperature (<math>t_p</math>)</b>		30 seconds max
<b>Ramp-down Rate</b>		6°C/second max
<b>Time 25°C to peak Temperature (<math>T_p</math>)</b>		8 minutes max.
<b>Do not exceed</b>		260°C



## Physical Specifications

<b>Weight</b>	0.00246 ounce, 0.0767 grams
<b>Case</b>	JEDEC DO214AC. Void-Free, Transfer-Molded, Thermosetting Plastic Epoxy Meets UL 94V-0
<b>Polarity</b>	Color band denotes cathode for unidirectional components.
<b>Terminal</b>	Matte Tin-plated leads, Solderable per JESD22-B102

## Soldering Footprint



## Ordering Information

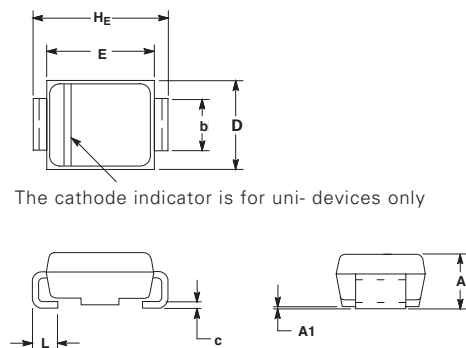
Device**	Package	Shipping
SZ1SMAxxAT3G	SMA (Pb-Free)	5,000 / Tape & Reel
SZ1SMAxxCAT3G	SMA (Pb-Free)	5,000 / Tape & Reel

\*\*The "T3" suffix refers to a 13 inch reel

## Environmental Specifications

<b>High Temp. Storage</b>	JESD22-A103
<b>HTRB</b>	JESD22-A108
<b>Temperature Cycling</b>	JESD22-A104
<b>MSL</b>	JEDEC-J-STD-020, Level 1
<b>H3TRB</b>	JESD22-A101
<b>RSH</b>	JESD22-A111

## Dimensions



Dim	Inches			Millimeters		
	Min	Nom	Max	Min	Nom	Max
A	0.078	0.083	0.087	1.97	2.10	2.20
A1	0.002	0.004	0.008	0.05	0.10	0.20
b	0.050	0.057	0.064	1.27	1.45	1.63
c	0.006	0.011	0.016	0.15	0.28	0.41
D	0.090	0.103	0.115	2.29	2.60	2.92
E	0.160	0.170	0.180	4.06	4.32	4.57
H <sub>E</sub>	0.190	0.205	0.220	4.83	5.21	5.59
L	0.030	0.045	0.060	0.76	1.14	1.52

