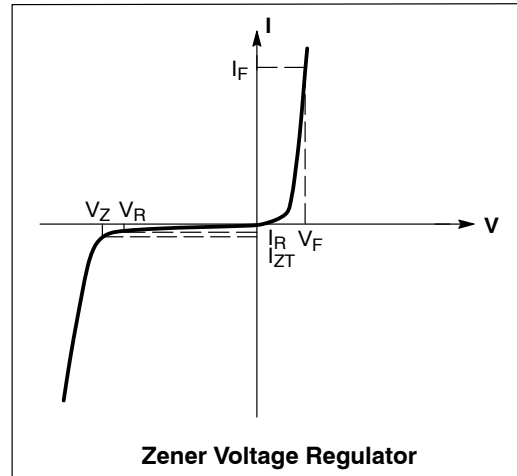


1SMA59xxBT3G Series, SZ1SMA59xxBT3G Series

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 1.5\text{ V Max.}$ @ $I_F = 200\text{ mA}$ for all types)

Symbol	Parameter
V_Z	Reverse Zener Voltage @ I_{ZT}
I_{ZT}	Reverse Current
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}
I_R	Reverse Leakage Current @ V_R
V_R	Reverse Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F
I_{ZM}	Maximum DC Zener Current



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 1.5\text{ V Max.}$ @ $I_F = 200\text{ mA}$ for all types)

Device* (Note 3)	Device Marking	Zener Voltage (Note 4)				Zener Impedance			Leakage Current		I_{ZM}
		V_Z (Volts)			@ I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_R @ V_R			
		Min	Nom	Max	mA	Ω	Ω	mA	μA	Volts	
1SMA5913BT3G	813B	3.13	3.3	3.47	113.6	10	500	1.0	50	1.0	455
1SMA5914BT3G	814B	3.42	3.6	3.78	104.2	9.0	500	1.0	35.5	1.0	417
1SMA5915BT3G	815B	3.70	3.9	4.10	96.1	7.5	500	1.0	12.5	1.0	385
1SMA5916BT3G	816B	4.08	4.3	4.52	87.2	6.0	500	1.0	2.5	1.0	349
1SMA5917BT3G	817B	4.46	4.7	4.94	79.8	5.0	500	1.0	2.5	1.5	319
1SMA5918BT3G	818B	4.84	5.1	5.36	73.5	4.0	350	1.0	2.5	2.0	294
1SMA5919BT3G	819B	5.32	5.6	5.88	66.9	2.0	250	1.0	2.5	3.0	268
1SMA5920BT3G	820B	5.89	6.2	6.51	60.5	2.0	200	1.0	2.5	4.0	242
1SMA5921BT3G	821B	6.46	6.8	7.14	55.1	2.5	200	1.0	2.5	5.2	221
1SMA5922BT3G	822B	7.12	7.5	7.88	50	3.0	400	0.5	2.5	6.0	200
1SMA5923BT3G	823B	7.79	8.2	8.61	45.7	3.5	400	0.5	2.5	6.5	183
1SMA5924BT3G	824B	8.64	9.1	9.56	41.2	4.0	500	0.5	2.5	7.0	165
1SMA5925BT3G	825B	9.5	10	10.5	37.5	4.5	500	0.25	2.5	8.0	150
1SMA5926BT3G	826B	10.45	11	11.55	34.1	5.5	550	0.25	0.5	8.4	136
1SMA5927BT3G	827B	11.4	12	12.6	31.2	6.5	550	0.25	0.5	9.1	125
1SMA5928BT3G	828B	12.35	13	13.65	28.8	7.0	550	0.25	0.5	9.9	115
1SMA5929BT3G	829B	14.25	15	15.75	25	9.0	600	0.25	0.5	11.4	100
1SMA5930BT3G	830B	15.2	16	16.8	23.4	10	600	0.25	0.5	12.2	94
1SMA5931BT3G	831B	17.1	18	18.9	20.8	12	650	0.25	0.5	13.7	83
1SMA5932BT3G	832B	19	20	21	18.7	14	650	0.25	0.5	15.2	75
1SMA5933BT3G	833B	20.9	22	23.1	17	17.5	650	0.25	0.5	16.7	68
1SMA5934BT3G	834B	22.8	24	25.2	15.6	19	700	0.25	0.5	18.2	63
1SMA5935BT3G	835B	25.65	27	28.35	13.9	23	700	0.25	0.5	20.6	56
1SMA5936BT3G	836B	28.5	30	31.5	12.5	26	750	0.25	0.5	22.8	50
1SMA5937BT3G	837B	31.35	33	34.65	11.4	33	800	0.25	0.5	25.1	45
1SMA5938BT3G	838B	34.2	36	37.8	10.4	38	850	0.25	0.5	27.4	42
1SMA5939BT3G	839B	37.05	39	40.95	9.6	45	900	0.25	0.5	29.7	38
1SMA5940BT3G	840B	40.85	43	45.15	8.7	53	950	0.25	0.5	32.7	35
1SMA5941BT3G	841B	44.65	47	49.35	8.0	67	1000	0.25	0.5	35.8	32
1SMA5942BT3G	842B	48.45	51	53.55	7.3	70	1100	0.25	0.5	38.8	29
1SMA5943BT3G	843B	53.2	56	58.8	6.7	86	1300	0.25	0.5	42.6	27
1SMA5944BT3G	844B	58.9	62	65.1	6.0	100	1500	0.25	0.5	47.1	24
1SMA5945BT3G	845B	64.6	68	71.4	5.5	120	1700	0.25	0.5	51.7	22

3. Tolerance and Voltage Regulation Designation - The type number listed indicates a tolerance of $\pm 5\%$.
4. V_Z limits are to be guaranteed at thermal equilibrium.

* Include SZ-prefix devices where applicable.

1SMA59xxBT3G Series, SZ1SMA59xxBT3G Series

RATING AND TYPICAL CHARACTERISTIC CURVES ($T_A = 25^\circ\text{C}$)

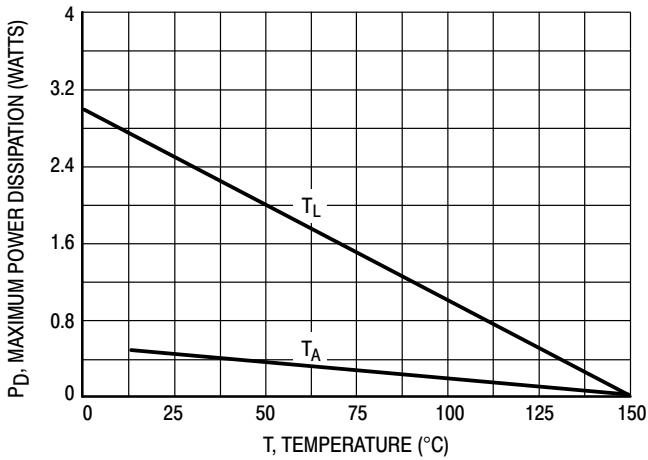


Figure 1. Steady State Power Derating

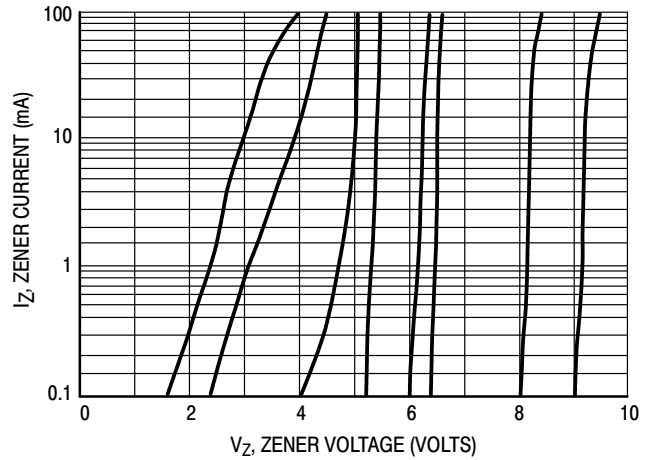


Figure 2. V_Z - 3.3 thru 10 Volts

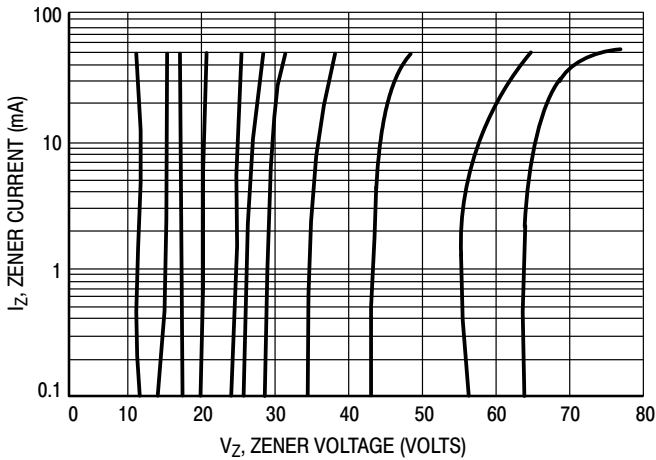


Figure 3. $V_Z = 12$ thru 68 Volts

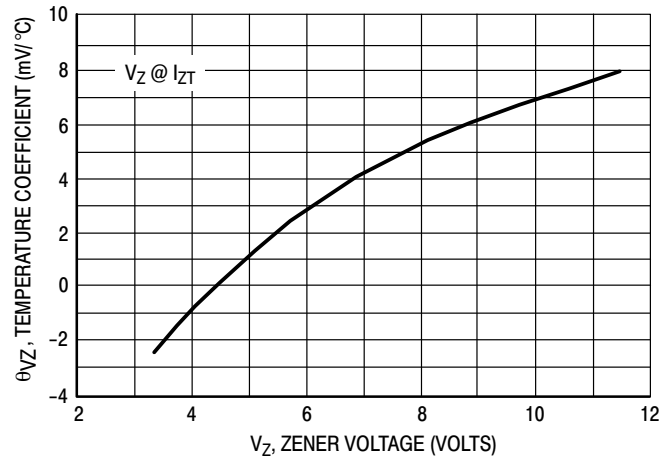


Figure 4. Zener Voltage - 3.3 to 12 Volts

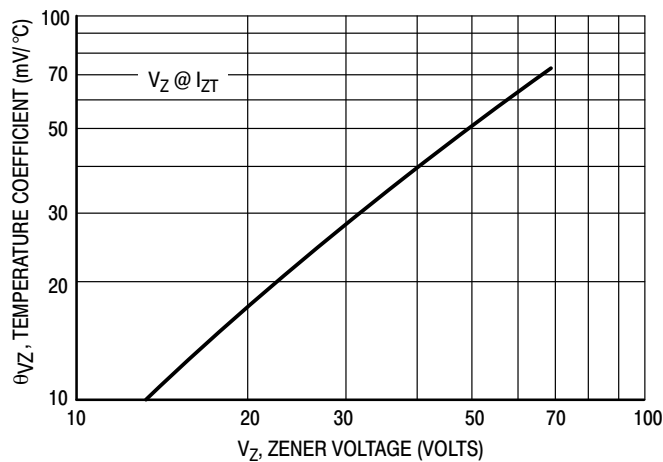


Figure 5. Zener Voltage - 12 to 68 Volts

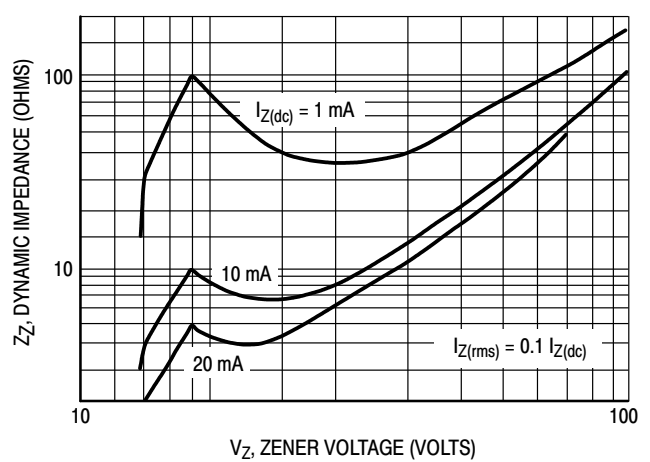


Figure 6. Effect of Zener Voltage

1SMA59xxBT3G Series, SZ1SMA59xxBT3G Series

RATING AND TYPICAL CHARACTERISTIC CURVES ($T_A = 25^\circ\text{C}$)

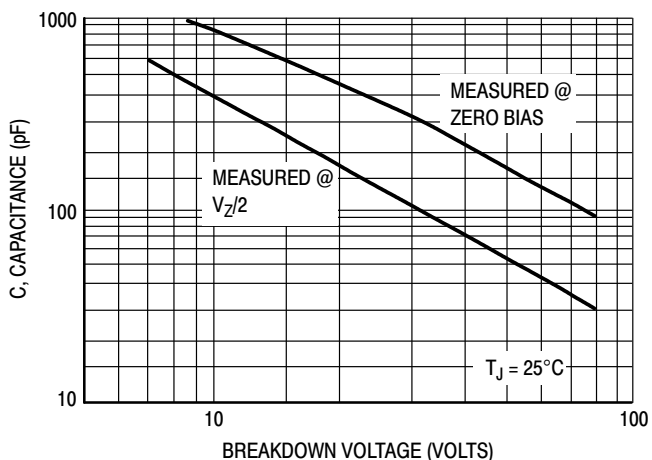


Figure 7. Capacitance Curve

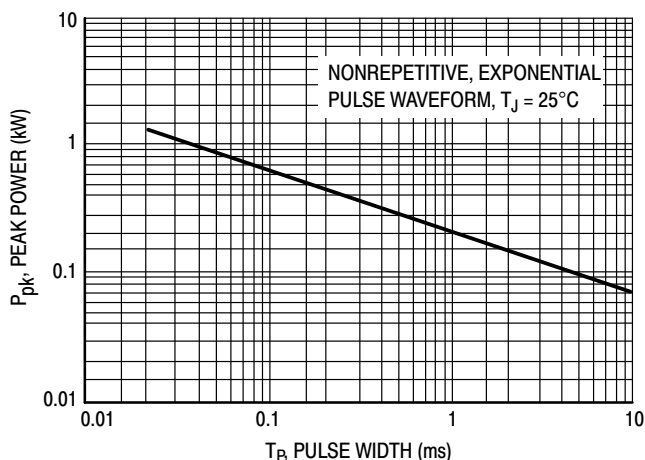


Figure 8. Typical Pulse Rating Curve

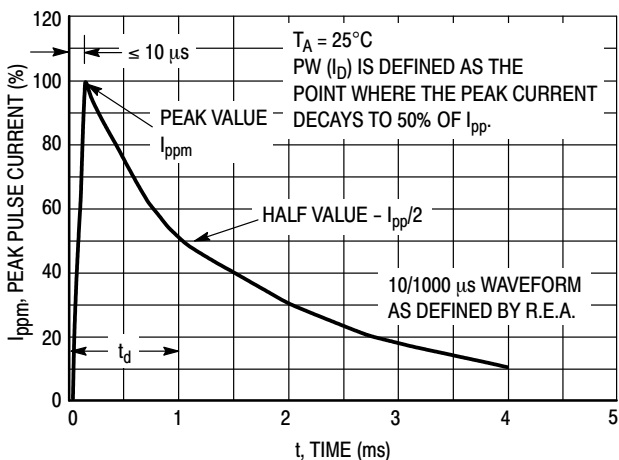


Figure 9. Pulse Waveform

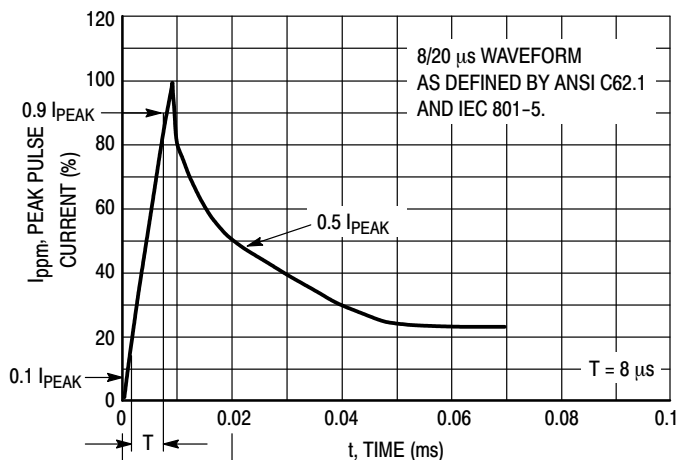
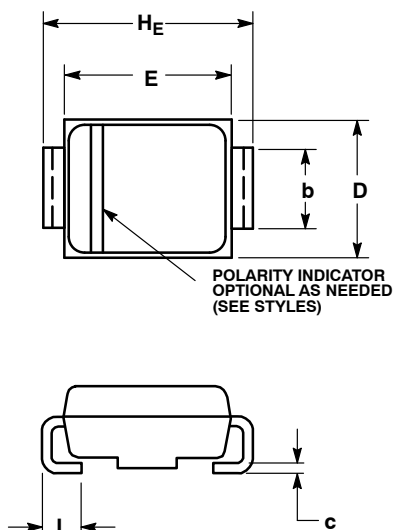


Figure 10. Pulse Waveform

1SMA59xxBT3G Series, SZ1SMA59xxBT3G Series

PACKAGE DIMENSIONS

SMA
CASE 403D-02
ISSUE F



NOTES:

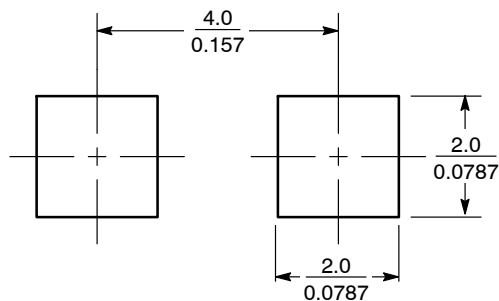
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 403D-01 OBSOLETE, NEW STANDARD IS 403D-02.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.97	2.10	2.20	0.078	0.083	0.087
A1	0.05	0.10	0.15	0.002	0.004	0.006
b	1.27	1.45	1.63	0.050	0.057	0.064
c	0.15	0.28	0.41	0.006	0.011	0.016
D	2.29	2.60	2.92	0.090	0.103	0.115
E	4.06	4.32	4.57	0.160	0.170	0.180
HE	4.83	5.21	5.59	0.190	0.205	0.220
L	0.76	1.14	1.52	0.030	0.045	0.060

STYLE 1:


- PIN 1. CATHODE (POLARITY BAND)
- ANODE

SOLDERING FOOTPRINT*



SCALE 8:1 (mm/inches)

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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