

OM SENI

SMA SURFACE MOUNT SILICON ZENER DIODES

Features

- Low Zener Impedance
- Power Dissipation of 1500mW
- High Stability and High Reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

1SMA5913BT3G- 1SMA5945BT3G

Zener Diode
3.3 to 68 Volts
Power Dissipation
1.5 Watts

Applications

Zener diode is generally used as reference voltage sources in regulated power supplies or as protective diode in overvoltage protection circuits.

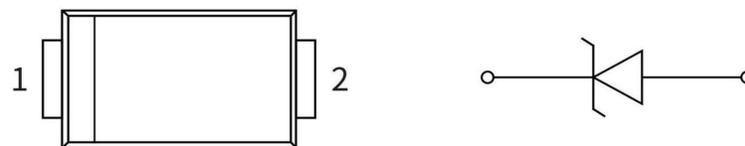
Mechanical Data

- Case: DO-214AC(SMA)
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end



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Function Diagram

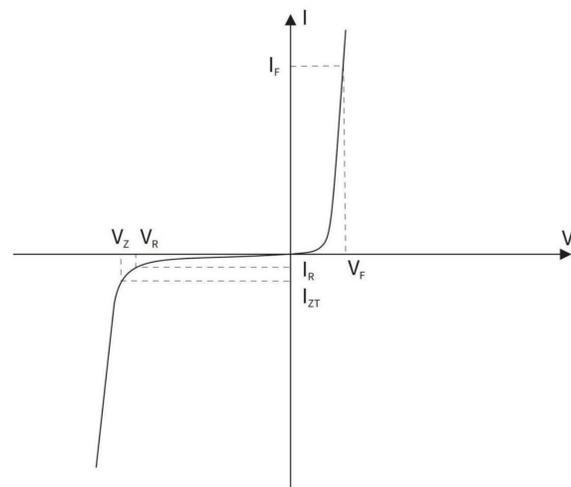


Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Power Dissipation at Tc=75°C	P _D	mW	1500
Forward Voltage @ I _F =200mA	V _F	V	1.5
Storage Temperature	T _{stg}	°C	-55 ~+150
Junction Temperature	T _j	°C	-55 ~+150
Typical Thermal Resistance	R _{θJA}	°C /W	250

Electrical Parameter

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



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Electrical Characteristics (Ta=25°C Unless otherwise noted)

Type Number	Type Code	Nominal Zener Voltage				Zener Impedance			Leakage Current		Admissible Zener Current
		Vz			IzT	ZzT@IzT	Zzk@Izk		IR@VR		
		Min. (V)	Nom. (V)	Max. (V)	(mA)	Zz-(2)	(Ω)	(mA)	IR(μA)	VR(V)	Izm(mA)
1SMA5913BT3G	813B	3.13	3.3	3.47	113.6	10	500	1.0	100	1.0	454
1SMA5914BT3G	814B	3.42	3.6	3.78	104.2	9	500	1.0	75	1.0	416
1SMA5915BT3G	815B	3.70	3.9	4.10	96.1	7.5	500	1.0	25	1.0	384
1SMA5916BT3G	816B	4.08	4.3	4.52	87.2	6	500	1.0	5	1.0	348
1SMA5917BT3G	817B	4.46	4.7	4.94	79.8	5	500	1.0	5	1.5	319
1SMA5918BT3G	818B	4.84	5.1	5.36	73.5	4	350	1.0	5	2.0	294
1SMA5919BT3G	819B	5.32	5.6	5.88	66.9	2	250	1.0	5	3.0	267
1SMA5920BT3G	820B	5.89	6.2	6.51	60.5	2	200	1.0	5	4.0	241
1SMA5921BT3G	821B	6.46	6.8	7.14	55.1	2.5	200	1.0	5	5.2	220
1SMA5922BT3G	822B	7.12	7.5	7.88	50	3	400	0.5	5	6.0	200
1SMA5923BT3G	823B	7.79	8.2	8.61	45.7	3.5	400	0.5	5	6.5	182
1SMA5924BT3G	824B	8.64	9.1	9.56	41.2	4	500	0.5	5	7.0	164
1SMA5925BT3G	825B	9.50	10	10.50	37.5	4.5	500	0.25	5	8.0	150
1SMA5926BT3G	826B	10.45	11	11.55	34.1	5.5	550	0.25	1	8.4	136
1SMA5927BT3G	827B	11.40	12	12.60	31.2	6.5	550	0.25	1	9.1	125
1SMA5928BT3G	828B	12.35	13	13.65	28.8	7	550	0.25	1	9.9	115
1SMA5929BT3G	829B	14.25	15	15.75	25	9	600	0.25	1	11.4	100
1SMA5930BT3G	830B	15.20	16	16.80	23.4	10	600	0.25	1	12.2	93
1SMA5931BT3G	831B	17.10	18	18.90	20.8	12	650	0.25	1	13.7	83
1SMA5932BT3G	832B	19.00	20	21.00	18.7	14	650	0.25	1	15.2	75
1SMA5933BT3G	833B	20.90	22	23.10	17	17.5	650	0.25	1	16.7	68
1SMA5934BT3G	834B	22.80	24	25.20	15.6	19	700	0.25	1	18.2	62
1SMA5935BT3G	835B	25.65	27	28.35	13.9	23	700	0.25	1	20.6	55
1SMA5936BT3G	836B	28.50	30	31.50	12.5	28	750	0.25	1	22.8	50
1SMA5937BT3G	837B	31.35	33	34.65	11.4	33	800	0.25	1	25.1	45
1SMA5938BT3G	838B	34.20	36	37.80	10.4	38	850	0.25	1	27.4	41
1SMA5939BT3G	839B	37.05	39	40.95	9.6	45	900	0.25	1	29.7	38
1SMA5940BT3G	840B	40.85	43	45.15	8.7	53	950	0.25	1	32.7	34
1SMA5941BT3G	841B	44.65	47	49.35	8.0	67	1000	0.25	1	35.8	31
1SMA5942BT3G	842B	48.45	51	53.55	7.3	70	1100	0.25	1	38.8	29
1SMA5943BT3G	843B	53.20	56	58.80	6.7	86	1300	0.25	1	42.6	26
1SMA5944BT3G	844B	58.90	62	65.10	6.0	100	1500	0.25	1	47.1	24
1SMA5945BT3G	845B	64.60	68	71.40	5.5	120	1700	0.25	1	51.7	22

Note:
 (1) The type number listed have a standard tolerance on the nominal zener voltage of ±5%

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Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

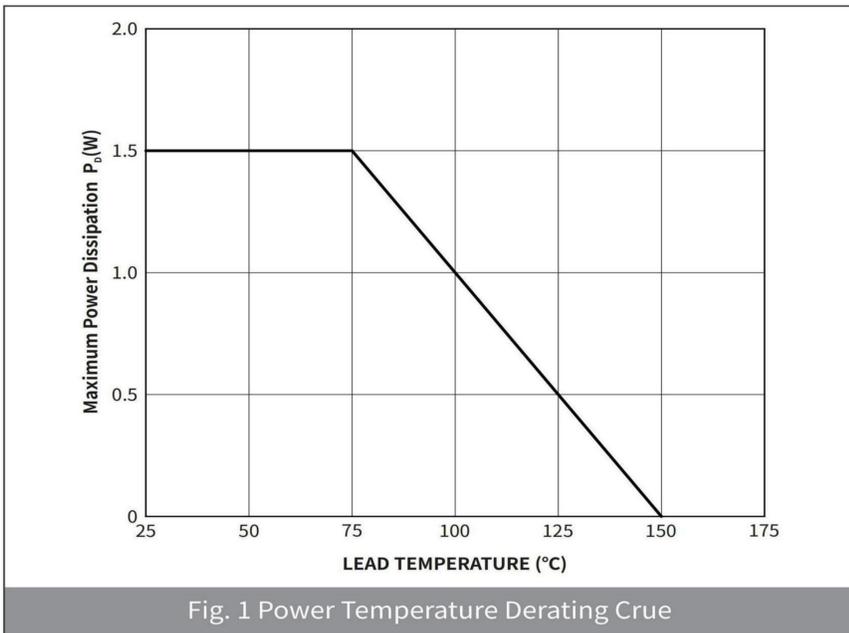


Fig. 1 Power Temperature Derating Curve

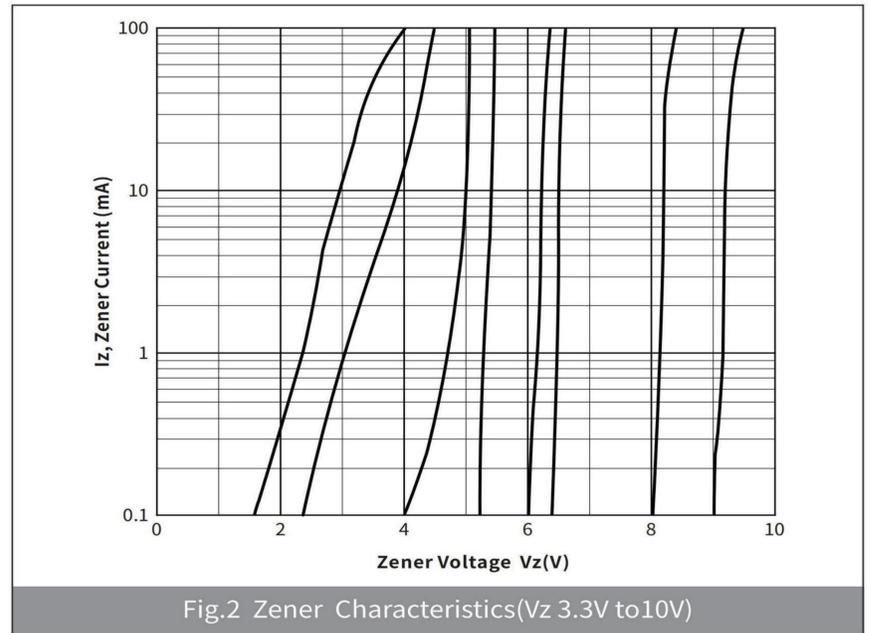


Fig. 2 Zener Characteristics (V_z 3.3V to 10V)

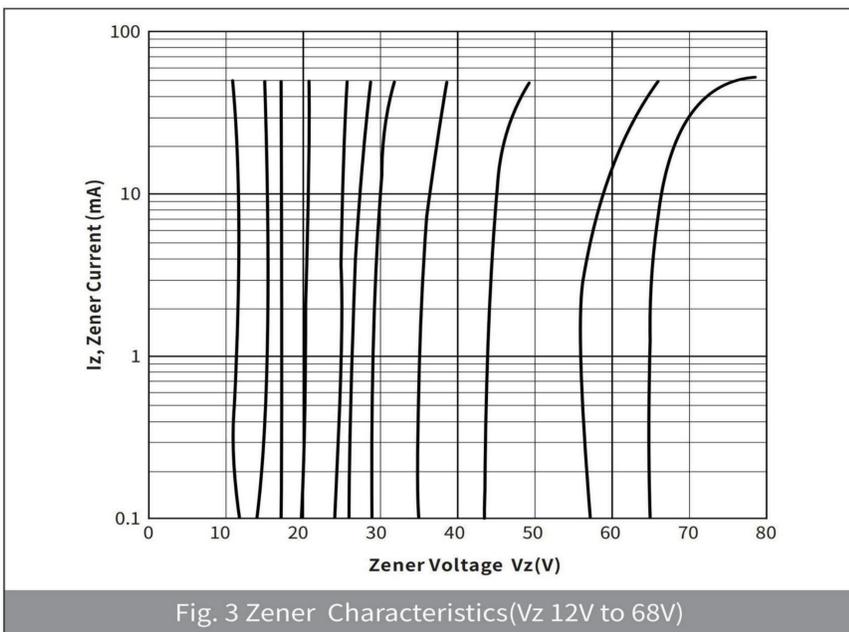


Fig. 3 Zener Characteristics (V_z 12V to 68V)

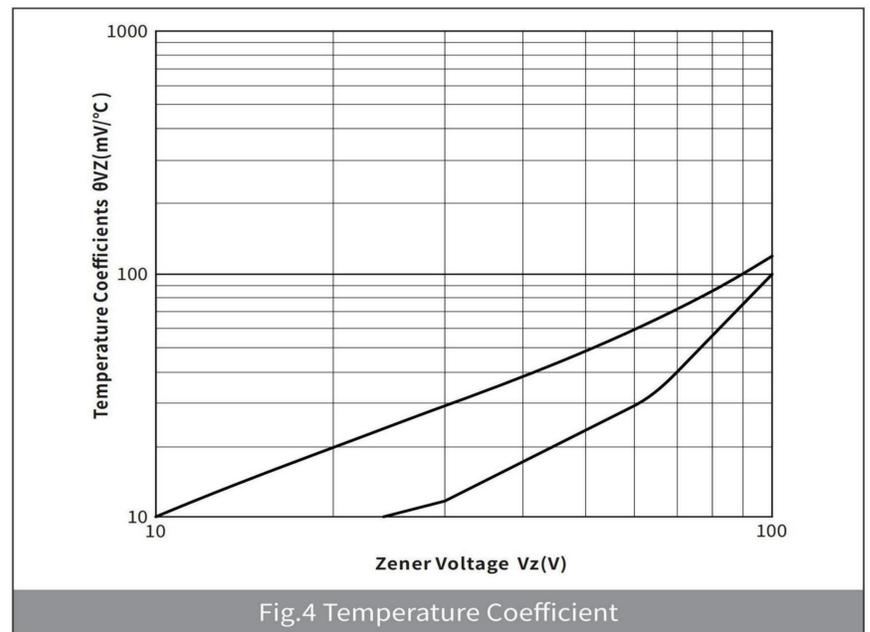


Fig. 4 Temperature Coefficient

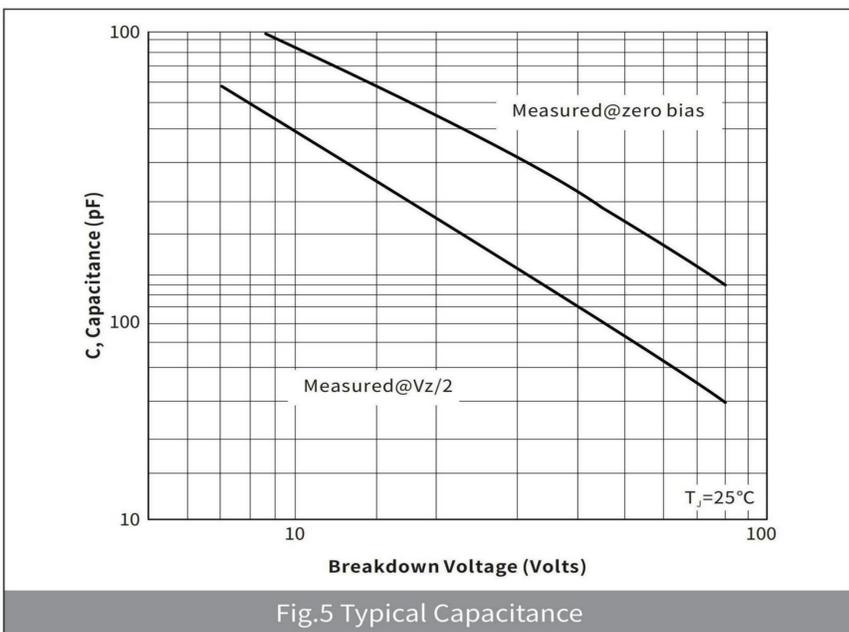


Fig. 5 Typical Capacitance

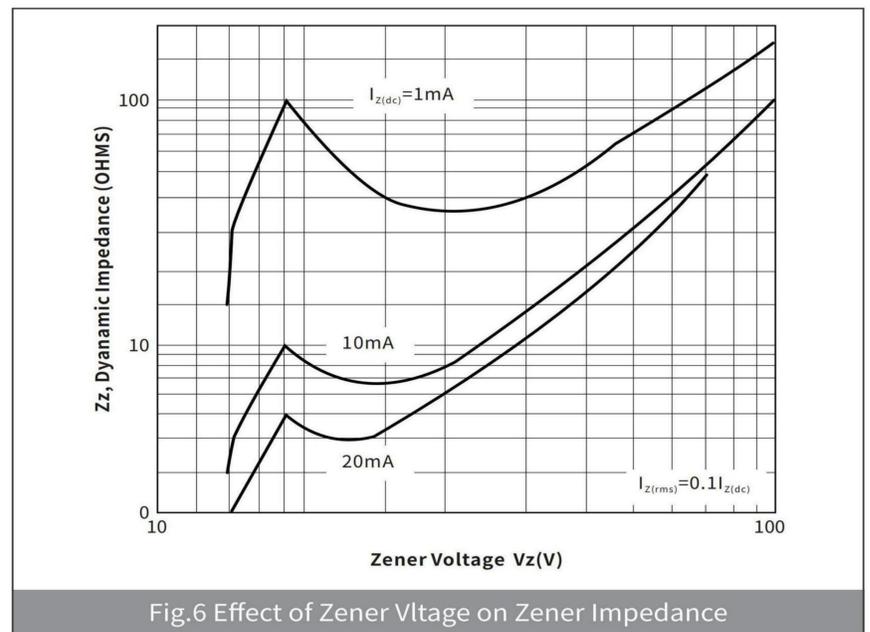


Fig. 6 Effect of Zener Voltage on Zener Impedance

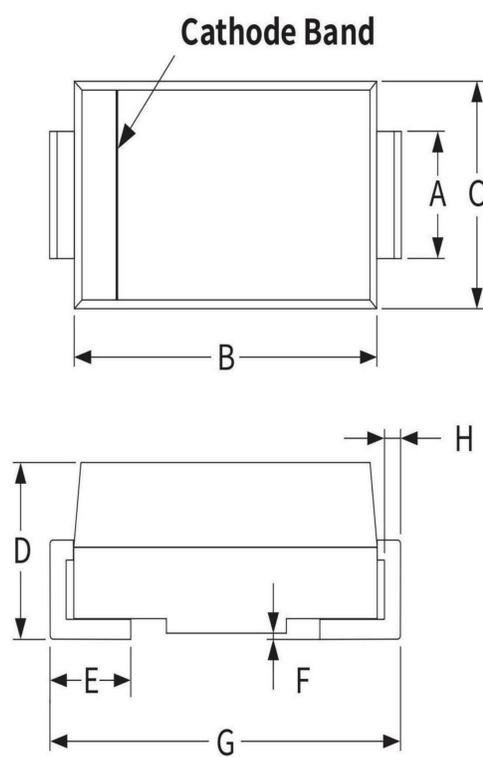
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1SMA5913BT3G-1SMA5945BT3G Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMA	R2	0.07	5000	10000	50000	11"
SMA	R3	0.07	7500	15000	75000	13"

Package Outline Dimensions (SMA/DO-214AC)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.25	1.65	0.049	0.065
B	3.95	4.65	0.156	0.183
C	2.35	2.85	0.093	0.112
D	1.98	2.41	0.078	0.095
E	0.76	1.52	0.030	0.060
F	-	0.203	-	0.008
G	4.70	5.30	0.185	0.209
H	0.15	0.31	0.006	0.012



Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
M	1.70	-	0.067	-
J	2.10	-	0.082	-
K	-	2.30	-	0.090

