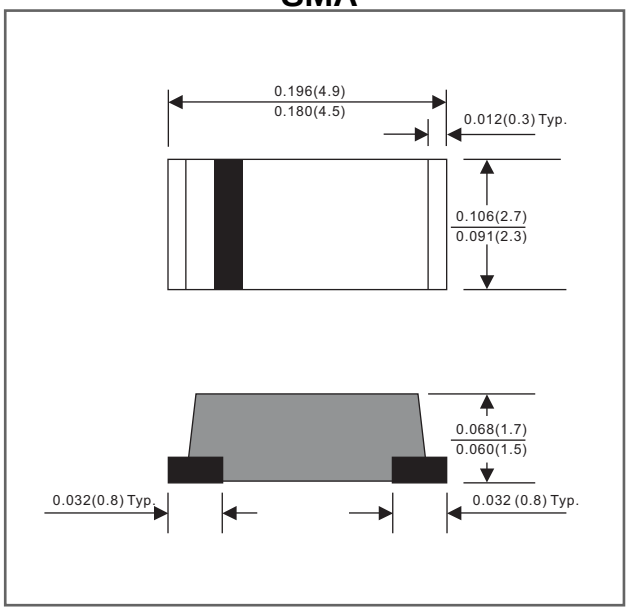
Chip Zener Diode

1.5W Surface Mount Zener Diodes - 6.8V-68V

Package outline

SMA



Dimensions in inches and (millimeters)

Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Silicon epitaxial planar chip structure.
- Wide zener reverse voltage range 6.8V to 68V.
- Small package size for high density applications.
- Ideally suited for automated assembly processes.
- Lead-free parts meet environmental standards of MIL-STD-19500/228
- Suffix "-H" indicates Halogen free parts, ex. 1SMA5921BG-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AC/SMA
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.05 gram

Maximum ratings (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Power Dissipation at T_L=75°C		P_D			1.5	W
Forward voltage	I_F = 200 mA	V_F			1.5	V
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}			10	A
Operating temperature		T_J	-55		+150	°C
Storage temperature		T_{STG}	-65		+175	°C

Electrical characteristics (at T_A=25°C unless otherwise noted)

Part No.	Zener voltage			Test current	Zener impedance			Leakage current	
	V_Z @ I_{ZT}(Volts)			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R	V_R
	Min.	Nom.	Max.	mA	(Ω)Max	(Ω)Max	mA	(uA)Max	Volts
1SMA5921BG	6.46	6.8	7.14	55.1	3	200	1.00	5	5.2
1SMA5922BG	7.13	7.5	7.88	50.0	3	400	0.50	5	6.0
1SMA5923BG	7.79	8.2	8.61	45.7	4	400	0.50	5	6.5
1SMA5924BG	8.65	9.1	9.56	41.2	4	500	0.50	5	7.0
1SMA5925BG	9.50	10	10.50	37.5	5	500	0.25	5	8.0
1SMA5926BG	10.45	11	11.55	34.1	6	550	0.25	1	8.4
1SMA5927BG	11.40	12	12.60	31.2	7	550	0.25	1	9.1
1SMA5928BG	12.35	13	13.65	28.8	7	550	0.25	1	9.9
1SMA5929BG	14.25	15	15.75	25.0	9	600	0.25	1	11.4
1SMA5930BG	15.20	16	16.80	23.4	10	600	0.25	1	12.2
1SMA5931BG	17.10	18	18.90	20.8	12	650	0.25	1	13.7
1SMA5932BG	19.00	20	21.00	18.7	14	650	0.25	1	15.2
1SMA5933BG	20.90	22	23.10	17.0	18	650	0.25	1	16.7
1SMA5934BG	22.80	24	25.20	15.6	19	700	0.25	1	18.2
1SMA5935BG	25.65	27	28.35	13.9	23	700	0.25	1	20.6
1SMA5936BG	28.50	30	31.50	12.5	26	750	0.25	1	22.8
1SMA5937BG	31.35	33	34.65	11.4	33	800	0.25	1	25.1
1SMA5938BG	34.20	36	37.80	10.4	38	850	0.25	1	27.4
1SMA5939BG	37.05	39	40.95	9.6	45	900	0.25	1	29.7
1SMA5940BG	40.85	43	45.15	8.7	53	950	0.25	1	32.7
1SMA5941BG	44.65	47	49.35	8.0	67	1000	0.25	1	35.8
1SMA5942BG	48.45	51	53.55	7.3	70	1100	0.25	1	38.8
1SMA5943BG	53.20	56	58.80	6.7	86	1300	0.25	1	42.6
1SMA5944BG	58.90	62	65.10	6.0	100	1500	0.25	1	47.1
1SMA5945BG	64.60	68	71.40	5.5	120	1700	0.25	1	51.7

Note : 20% tolerance of Zener voltage for no suffix ex: 1SMA5921is 6.8V 20%
10% tolerance of Zener voltage for suffix "A" ex: 1SMA5921Ais 6.8V 10%
5% tolerance of Zener voltage for suffix "B" ex: 1SMA5921Bis 6.8V 5%
2% tolerance of Zener voltage for suffix "C" ex: 1SMA5921Cis 6.8V 2%

Rating and characteristic curves

FIG.1 STEADY STATE POWER DERATING

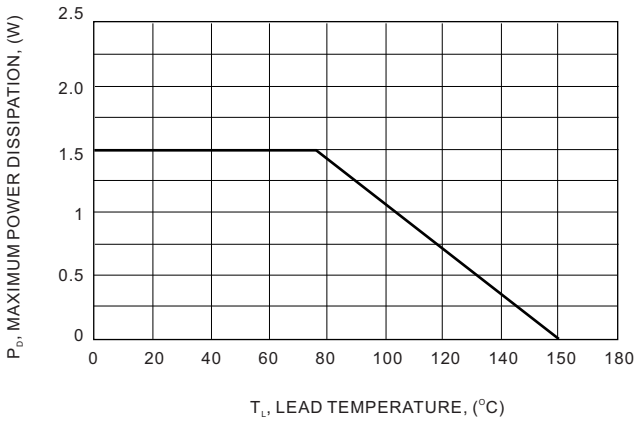


FIG.2 ZENER VOLTAGE TO 12 VOLTS

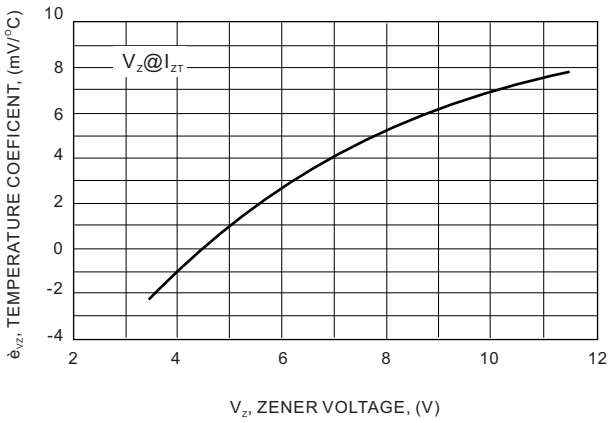


FIG.3 ZENER VOLTAGE 12 TO 68 VOLTAGE

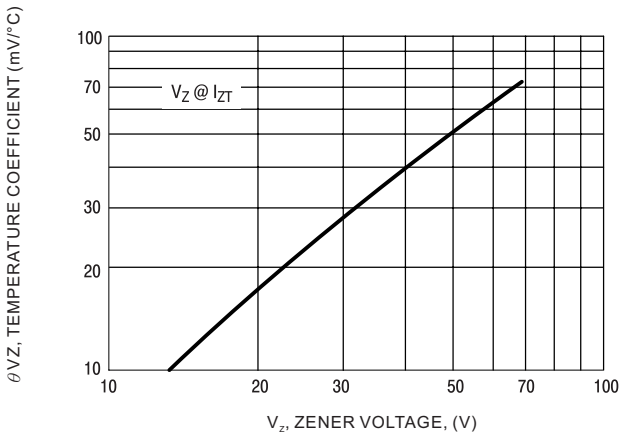


FIG.4 EFFECT OF ZENER CURRENT

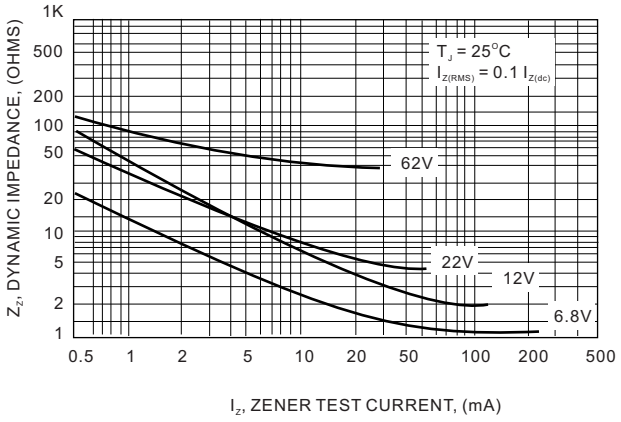


FIG.5 EFFECT OF ZENER VOLTAGE

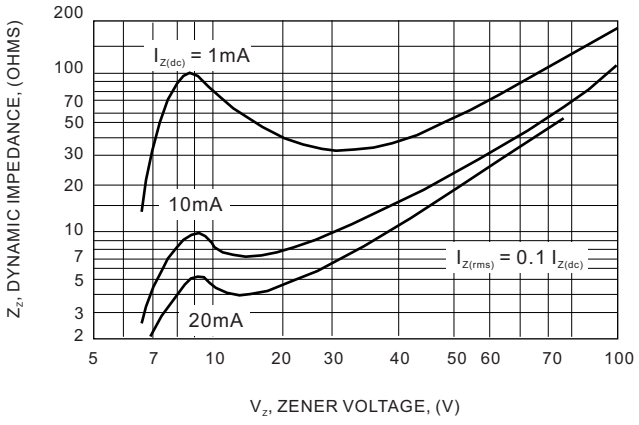


FIG.6 MAXIMUM SURGE POWER

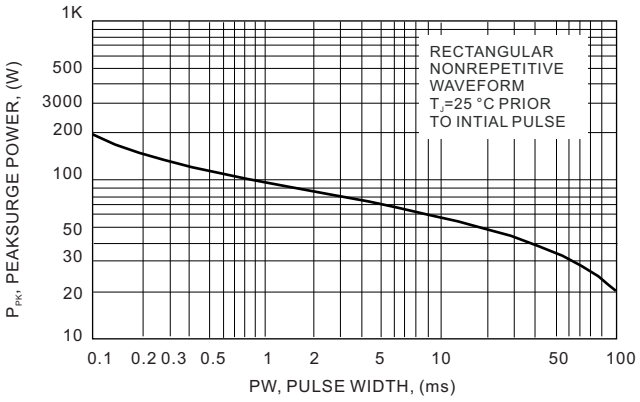


FIG.7 V_z = 6.8 THRU 10 VOLTAGE

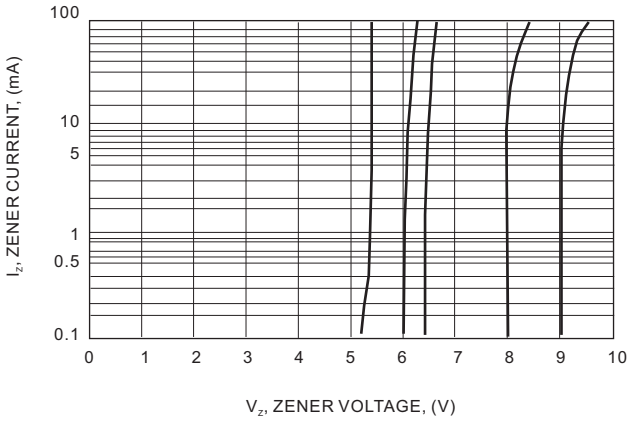


FIG.8 V_z = 12 THRU 68 VOLTAGE