SOD-123 SURFACE MOUNT SILICON ZENER DIODES

Features

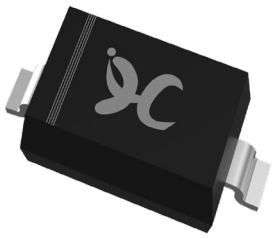
- Low Zener Impedance
- Power Dissipation of 1000mW
- High Stability and High Reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Zener Diode
3.3 to 330 Volts
Power Dissipation
1.0 Watts

Applications

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

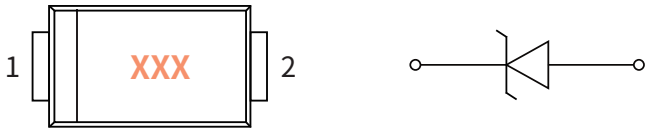
SOD-123



Mechanical Data

- Case: SOD-123
  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

Function Diagram

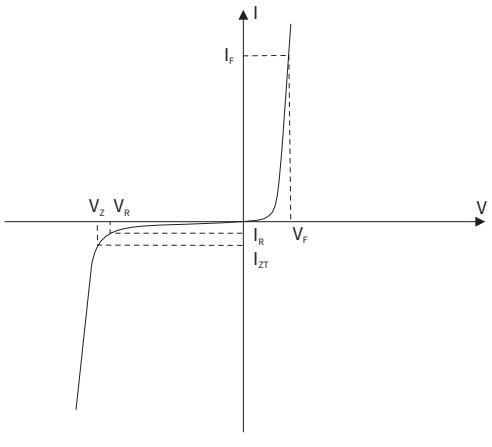


Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Power Dissipation at Tc=75°C	P_D	mW	1000
Forward Voltage @ I_F=200mA	V_F	V	1.2
Storage Temperature	T_{stg}	°C	-55 ~+150
Junction Temperature	T_j	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	375

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



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

Type Number	Type Code	Nominal Zener Voltage				Zener Impedance	Leakage Current		Admissible Zener Current
		V_Z			I_{ZT}	$Z_{ZT}@I_{ZT}$	$I_R@V_R$		
		Min.(V)	Nom.(V)	Max.(V)	(mA)	$Z_{ZT}(\Omega)$	$I_R(\mu A)$	$V_R(V)$	I_{ZM} (mA)
MM1W3V3	FHD	3 .10	3 .3	3 .50	75	10	100	1	285
MM1W3V6	FHE	3 .40	3 .6	3 .80	69	10	100	1	263
MM1W3V9	FHF	3 .70	3 .9	4 . 10	64	9 .0	50	1	243
MM1W4V3	FHG	4 .06	4 .3	4 .56	58	9 .0	25	1	219
MM1W4V7	FHJ	4 .50	4 .7	4 .93	53	8 .0	10	1	203
MM1W5V1	FHK	4 .84	5.1	5 .36	49	7 .0	10	1	186
MM1W5V6	FHL	5 .32	5 .6	5 .92	45	5 .0	10	2	170
MM1W6V2	FHN	5 .86	6 .2	6 .51	41	2 .0	10	3	154
MM1W6V8	FHO	6 .46	6 .8	7 . 18	37	3 .5	10	4	140
MM1W7V5	FHQ	7 . 12	7 .5	7 .88	34	4 .0	10	5	127
MM1W8V2	FHR	7 .79	8 .2	8 .67	31	4 .5	10	6	116
MM1W9V1	FHT	8 .60	9.1	9 .59	28	5 .0	10	7	104
MM1W10	FHU	9 .50	10	10 .5	25	7 .0	10	7	95
MM1W11	FHV	10 .4	11	11 .6	23	8 .0	5	8	86
MM1W12	FHW	11 .4	12	12 .6	21	9 .0	5	9	79
MM1W13	FHX	12 .4	13	14 . 1	19	10	5	10	71
MM1W15	FHZ	13 .8	15	15 .8	17	14	5	11	63
MM1W16	FJA	15 .2	16	17 . 1	16	16	5	12	58
MM1W18	FJF	16 .8	18	19 .2	14	20	5	13	52
MM1W20	FJG	19 .0	20	21 .2	13	22	5	15	47
MM1W22	FJK	20 .8	22	23 .3	12	23	5	17	43
MM1W24	FJL	22 .8	24	26 .0	11	25	5	18	38
MM1W27	FJN	25 .3	27	28 .9	9 .5	35	5	21	35
MM1W30	FJQ	28 .2	30	32 .0	8 .5	40	5	23	31
MM1W33	FJR	31 .3	33	34 .9	7 .5	45	5	25	28
MM1W36	FJS	34 .2	36	37 .9	7 .0	50	5	27	26
MM1W39	FJT	37 .2	39	41 .5	6 .5	60	5	30	24
MM1W43	FLG	40 .9	43	45 .6	6 .0	70	1	32	22
MM1W47	FLJ	44 .9	47	49 .8	5 .5	80	1	35	20
MM1W51	FLK	48 .6	51	54 .0	5 .0	95	1	38	18
MM1W56	FLL	53 .6	56	58 .8	4 .5	110	1	42	17
MM1W62	FLN	58 .9	62	65 .6	4 .0	125	1	47	15
MM1W68	FLO	64 .6	68	71 .7	3 .7	150	1	52	14

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

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		V_Z			I_{ZT}	$Z_{ZT}@I_{ZT}$	$I_R@V_R$		
		Min.(V)	Nom.(V)	Max.(V)	(mA)	$Z_{ZT}(\Omega)$	$I_R(\mu A)$	$V_R(V)$	I_{ZM} (mA)
MM1W75	FLQ	71 .2	75	78 .8	3 .3	175	1	56	12
MM1W82	FLR	77 .9	82	87 .0	3 .0	200	1	62	11
MM1W91	FLT	86 .0	91	96 .0	2 .8	250	1	69	10
MM1W100	FLU	95 .0	100	105	2 .5	350	1	76	9 .5
MM1W110	FLV	104	110	116	2 .3	450	1	84	8 .6
MM1W120	FLW	114	120	127	2 .0	550	1	91	7 .8
MM1W135	FLX	125	135	142	1 .9	700	1	100	7 .0
MM1W150	FLZ	140	150	157	1 .7	900	1	110	6 .3
MM1W165	FPA	155	165	172	1 .6	1100	1	120	5 .8
MM1W180	FPF	170	180	191	1 .4	1200	1	135	5 .2
MM1W200	FPG	189	200	211	1 .2	1400	1	150	4 .7
MM1W220	FPK	209	220	231	1 .0	1600	1	165	4 .3
MM1W240	FPL	229	240	251	1 .0	1800	1	180	3 .9
MM1W260	FPM	249	260	271	1 .0	2000	1	190	3 .7
MM1W280	FPN	269	280	291	1 .0	2100	1	205	3 .4
MM1W300	FPQ	289	300	315	1 .0	2300	1	230	3.1
MM1W330	FLR	313	330	346	1 .0	2500	1	250	2 .8

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

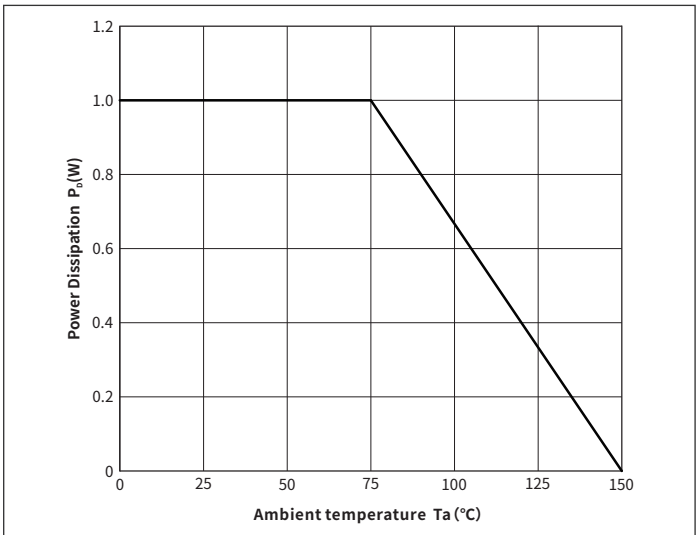


Fig. 1 Power Derating Curve

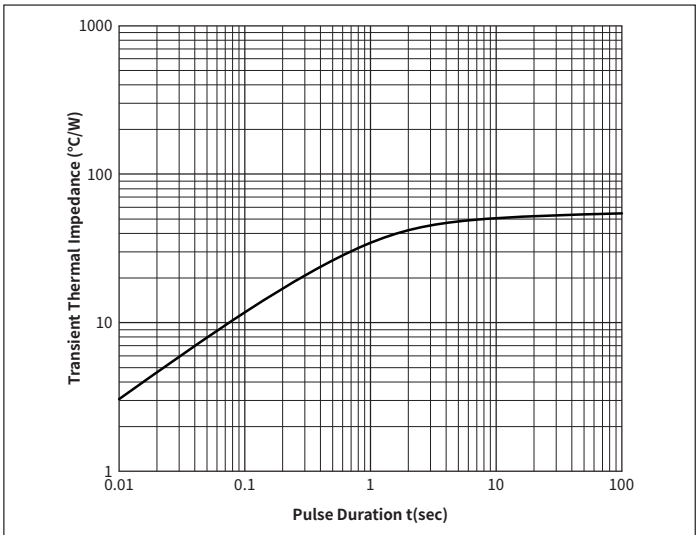
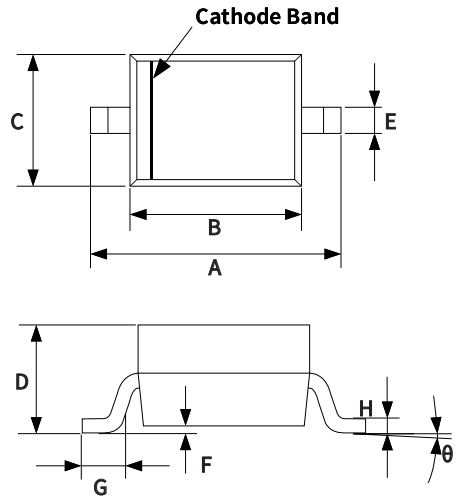


Fig.2 Typical Transient Thermal Impedance

Ordering Information

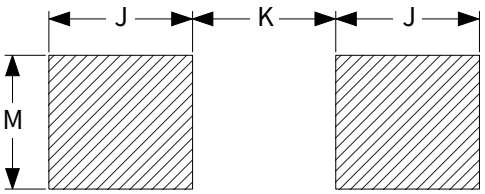
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-123	R1	0.012	3000	45000	180000	7''

Package Outline Dimensions (SOD-123)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.55	3.85	0.140	0.152
B	2.55	2.85	0.100	0.112
C	1.40	1.80	0.055	0.071
D	0.95	1.35	0.140	0.152
E	0.51	0.71	0.037	0.053
F	-	0.15	-	0.006
G	0.15	0.45	0.006	0.008
H	0.08	0.25	0.003	0.010
θ	-	8°	-	8°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.91	-	0.036	-
K	-	2.36	-	0.092
M	1.22	-	0.048	-

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