

MM1W3V3 THRU MM1W330

SURFACE MOUNT ZENER DIODES

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

Applications

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

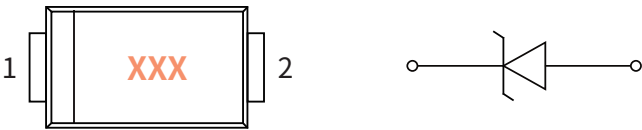
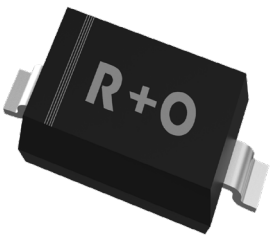
Mechanical Data

- Case: 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

Zener Diode
3.3 to 330 Volts
Power Dissipation
1.0 Watts

SOD-123

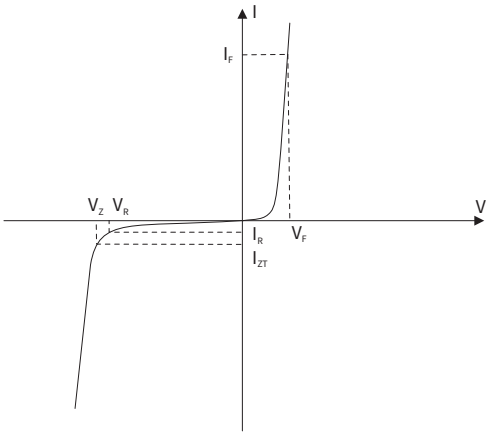


Maximum Ratings (Ta=25°C Unless otherwise specified)

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 _{θJA}	°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



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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
		V _Z			I _{ZT}	Z _{ZT} @I _{ZT}	I _R @V _R		
		Min.(V)	Nom.(V)	Max.(V)	(mA)	Z _{ZT} (Ω)	I _R (μA)	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

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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
		V _Z			I _{ZT}	Z _{ZT} @I _{ZT}	I _R @V _R		
		Min.(V)	Nom.(V)	Max.(V)	(mA)	Z _{ZT} (Ω)	I _R (μA)	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)

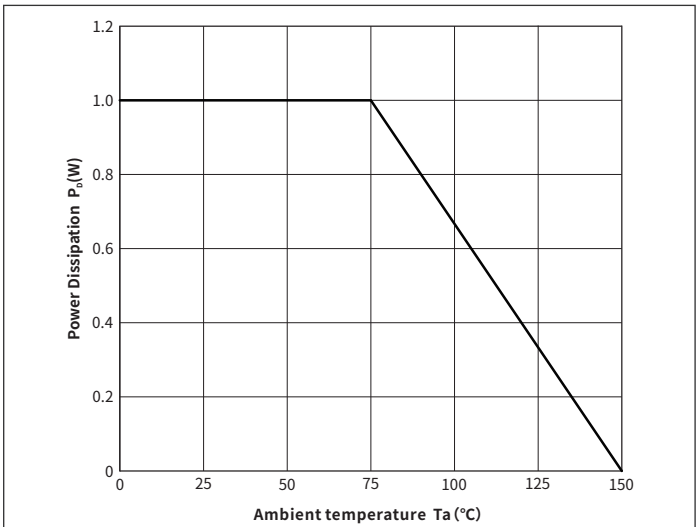


Fig. 1 Power Derating Curve

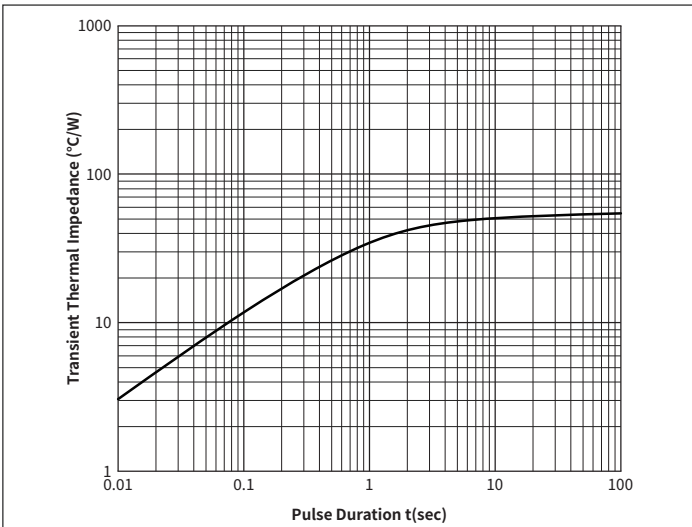


Fig.2 Typical Transient Thermal Impedance

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● 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	-