

## 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

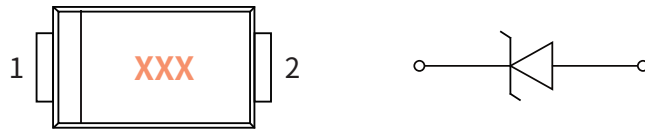
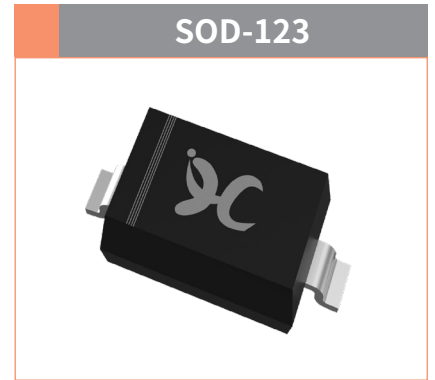
Zener diode is generally used as reference voltage sources in regulated power supplies or as protective diode in overvoltage protection circuits.

### ● 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



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

PARAMETER	SYMBOL	UNIT	VALUE
Power Dissipation at Tc=75°C	P <sub>D</sub>	mW	1000
Forward Voltage @ I <sub>F</sub> =200mA	V <sub>F</sub>	V	1.2
Storage Temperature	T <sub>stg</sub>	°C	-55 ~+150
Junction Temperature	T <sub>J</sub>	°C	-55 ~+150
Typical Thermal Resistance	R <sub>θJA</sub>	°C /W	375

### ● Electrical Parameter

SYMBOL	PARAMETER
V <sub>Z</sub>	Reverse zener voltage @ I <sub>ZT</sub>
I <sub>ZT</sub>	Reverse current
Z <sub>ZT</sub>	Maximum Zener Impedance @ I <sub>ZT</sub>
I <sub>ZK</sub>	Reverse Current
Z <sub>ZK</sub>	Maximum Zener Impedance @ I <sub>ZK</sub>
I <sub>R</sub>	Reverse leakage current @ V <sub>R</sub>
V <sub>R</sub>	Reverse voltage
I <sub>F</sub>	Forward current
V <sub>F</sub>	Forward voltage @ I <sub>F</sub>

# MM1W3V3 THRU MM1W330

SURFACE MOUNT ZENER DIODES

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

Type Number	Type Code	Nominal Zener Voltage				Zener Impedance	Leakage Current		Admissible Zener Current
		V <sub>Z</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	I <sub>R</sub> @V <sub>R</sub>		
		Min.(V)	Nom.(V)	Max.(V)	(mA)	Z <sub>ZT</sub> (Ω)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)	I <sub>ZM</sub> (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)

Type Number	Type Code	Nominal Zener Voltage			I <sub>ZT</sub>	Zener Impedance	Leakage Current		Admissible Zener Current
		V <sub>Z</sub>				Z <sub>ZT@I<sub>ZT</sub></sub>	I <sub>R@V<sub>R</sub></sub>		
		Min.(V)	Nom.(V)	Max.(V)	(mA)	Z <sub>ZT</sub> (Ω)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)	I <sub>ZM</sub> (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)

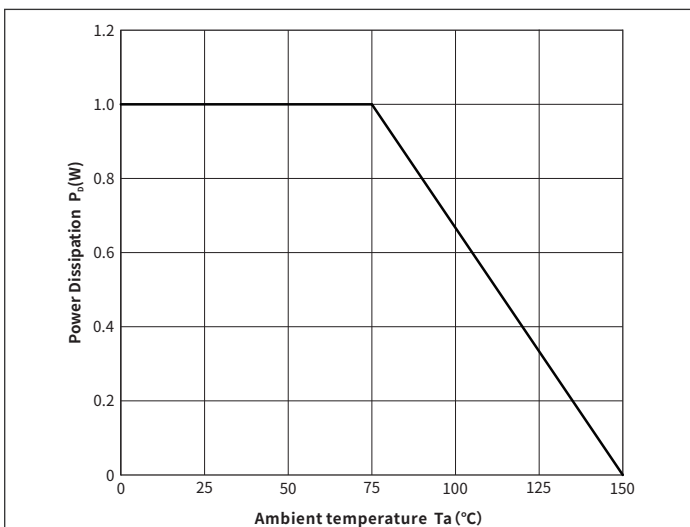


Fig. 1 Power Derating Curve

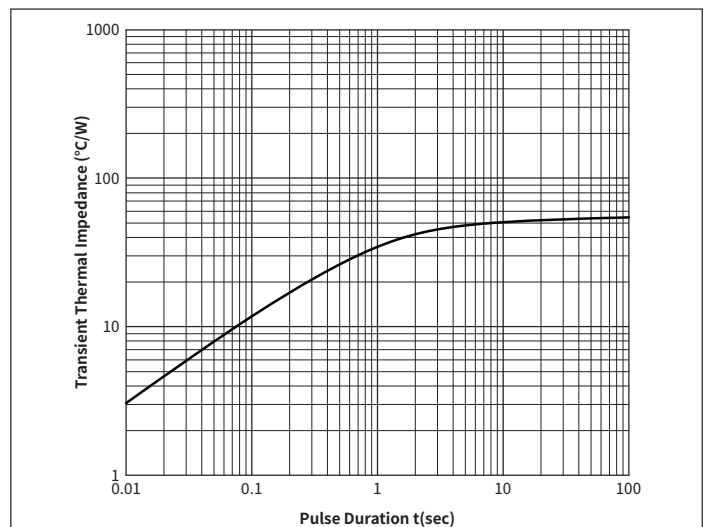


Fig.2 Typical Transient Thermal Impedance

# MM1W3V3 THRU MM1W330

SURFACE MOUNT ZENER DIODES

## ● 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
$\theta$	-	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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