

## SOD-123 SURFACE MOUNT SILICON ZENER DIODES

### Features

- Low Zener Impedance
- Power Dissipation of 500mW
- High Stability and High Reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

### Applications

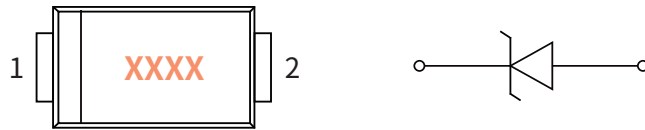
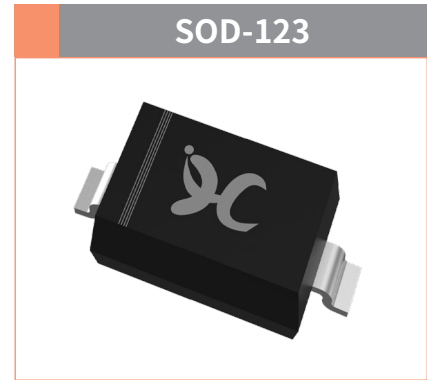
Zener diode is generally used as reference voltage sources in regulated power supplies or as protective diode in overvoltage protection circuits.

### 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**  
2.0 to 75 Volts  
**Power Dissipation**  
1 Watts

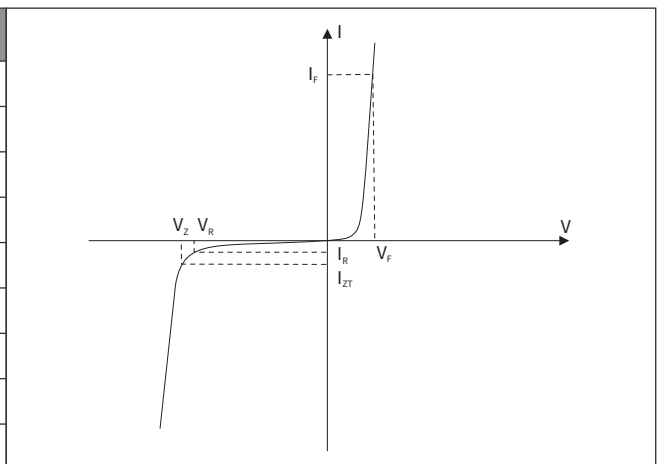


### Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Power Dissipation	$P_D$	mW	500
Forward Voltage @ $I_F=10\text{mA}$	$V_F$	V	0.9
Storage Temperature	$T_{stg}$	°C	-55 ~ +150
Junction Temperature	$T_J$	°C	-55 ~ +150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	340

### 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 @ $I_F$



# MM1Z2V0 THRU MM1Z75

SURFACE MOUNT ZENER DIODES

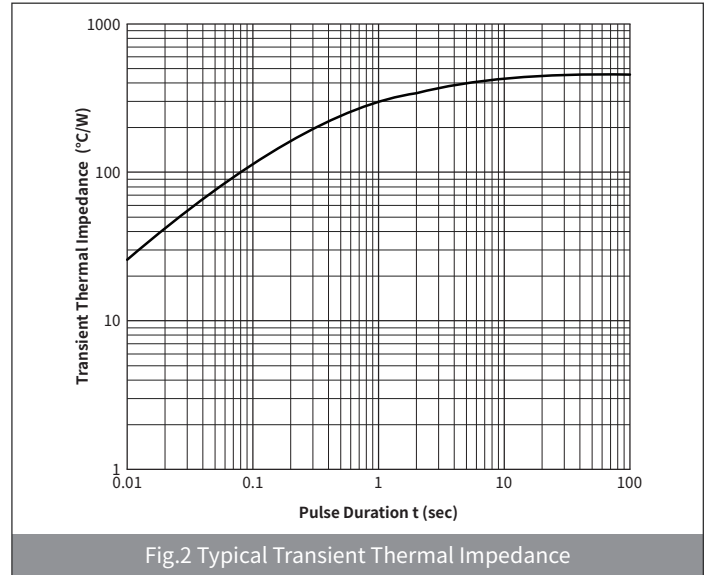
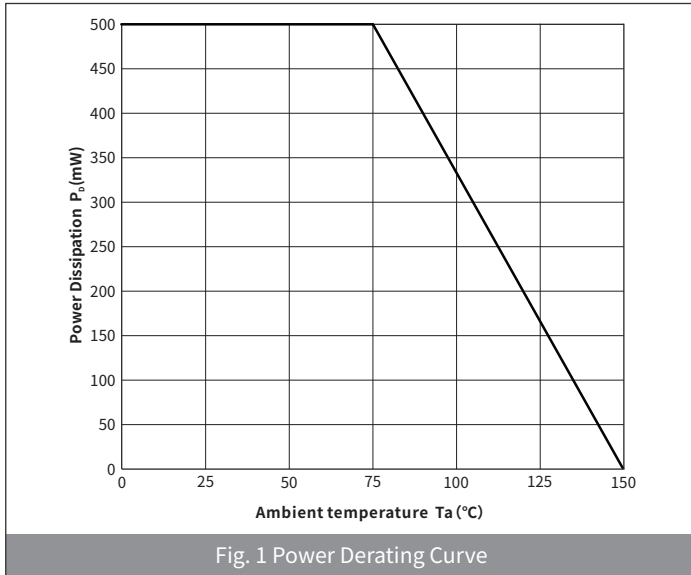
## ● Electrical Characteristics (Ta=25°C Unless otherwise noted)

Type Number	Type Code	Nominal Zener Voltage				Zener Impedance		Leakage Current	
		V <sub>Z</sub>			I <sub>ZT</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)	
MM1Z2V0	4A	1.8	2.0	2.15	5	100	120	0.5	
MM1Z2V2	4B	2.08	2.2	2.33	5	100	120	0.7	
MM1Z2V4	4C	2.28	2.4	2.56	5	100	120	1	
MM1Z2V7	4D	2.5	2.7	2.9	5	110	120	1	
MM1Z3V0	4E	2.8	3.0	3.2	5	120	50	1	
MM1Z3V3	4F	3.1	3.3	3.5	5	130	20	1	
MM1Z3V6	4H	3.4	3.6	3.8	5	130	10	1	
MM1Z3V9	4J	3.7	3.9	4.1	5	130	5	1	
MM1Z4V3	4K	4	4.3	4.6	5	130	5	1	
MM1Z4V7	4M	4.4	4.7	5	5	130	2	1	
MM1Z5V1	4N	4.8	5.1	5.4	5	130	2	1.5	
MM1Z5V6	4P	5.2	5.6	6	5	80	1	2.5	
MM1Z6V2	4R	5.8	6.2	6.6	5	50	1	3	
MM1Z6V8	4X	6.4	6.8	7.2	5	30	0.5	3.5	
MM1Z7V5	4Y	7	7.5	7.9	5	30	0.5	4	
MM1Z8V2	4Z	7.7	8.2	8.7	5	30	0.5	5	
MM1Z9V1	5A	8.5	9.1	9.6	5	30	0.5	6	
MM1Z10	5B	9.4	10	10.6	5	30	0.1	7	
MM1Z11	5C	10.4	11	11.6	5	30	0.1	8	
MM1Z12	5D	11.4	12	12.7	5	35	0.1	9	
MM1Z13	5E	12.4	13	14.1	5	35	0.1	10	
MM1Z15	5F	13.8	15	15.6	5	40	0.1	11	
MM1Z16	5H	15.3	16	17.1	5	40	0.1	12	
MM1Z18	5J	16.8	18	19.1	5	45	0.1	13	
MM1Z20	5K	18.8	20	21.2	5	50	0.1	15	
MM1Z22	5M	20.8	22	23.3	5	55	0.1	17	
MM1Z24	5N	22.8	24	25.6	5	60	0.1	19	
MM1Z27	5P	25.1	27	28.9	5	70	0.1	21	
MM1Z30	5R	28	30	32	5	80	0.1	23	
MM1Z33	5X	31	33	35	5	80	0.1	25	
MM1Z36	5Y	34	36	38	5	90	0.1	27	
MM1Z39	5Z	37	39	41	2.5	100	2	30	
MM1Z43	6A	40	43	46	3.7	150	1	52	

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

Type Number	Type Code	Nominal Zener Voltage			Zener Impedance	Leakage Current		
		V <sub>Z</sub>				Z <sub>ZT</sub> @I <sub>ZT</sub>	I <sub>R</sub> @V <sub>R</sub>	
		Min.(V)	Nom.(V)	Max.(V)	I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> (Ω)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)
MM1Z43	6A	40	43	46	2.5	130	2	33
MM1Z47	6B	44	47	50	2.5	150	2	36
MM1Z51	6C	48	51	54	2.5	180	1	39
MM1Z56	6D	52	56	60	2.5	180	1	43
MM1Z62	6E	58	62	66	2.5	200	0.2	47
MM1Z68	6F	64	68	72	2.5	250	0.2	52
MM1Z75	6H	70	75	79	2.5	300	0.2	57

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



# MM1Z2V0 THRU MM1Z75

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 (SOT-23)

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	-