

MM1Z2V0B THRU MM1Z75B

SURFACE MOUNT ZENER DIODES

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.

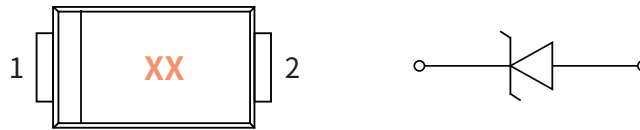
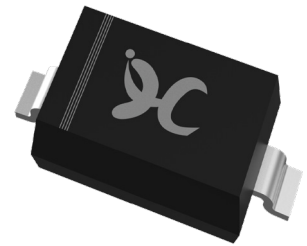
● Mechanical Data

- 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
0.5 Watts

SOD-123

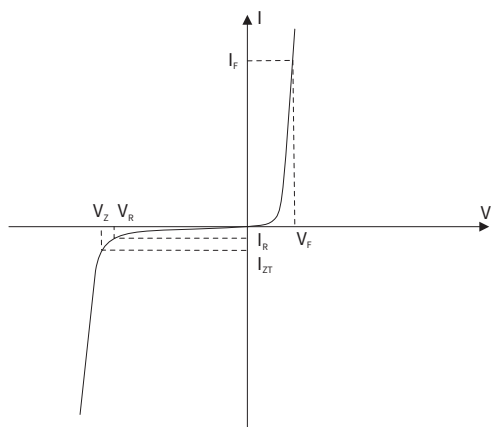


● Maximum Ratings (Ta=25°C Unless otherwise specified)

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	$R_{\theta JA}$	°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



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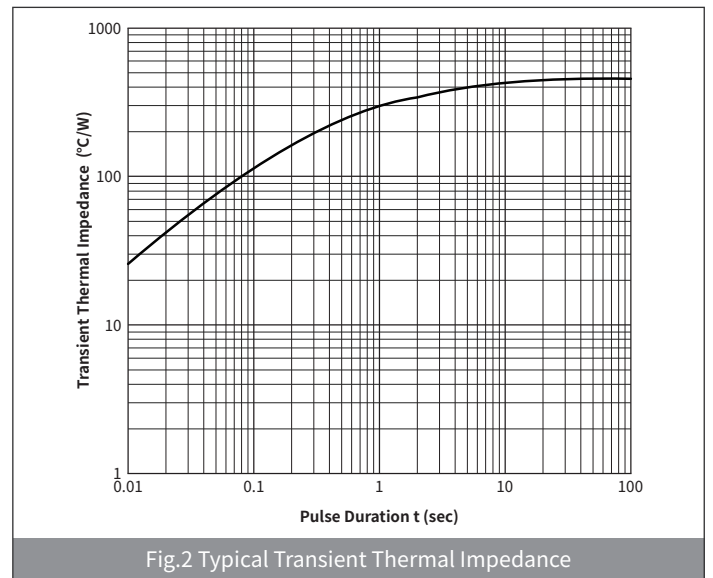
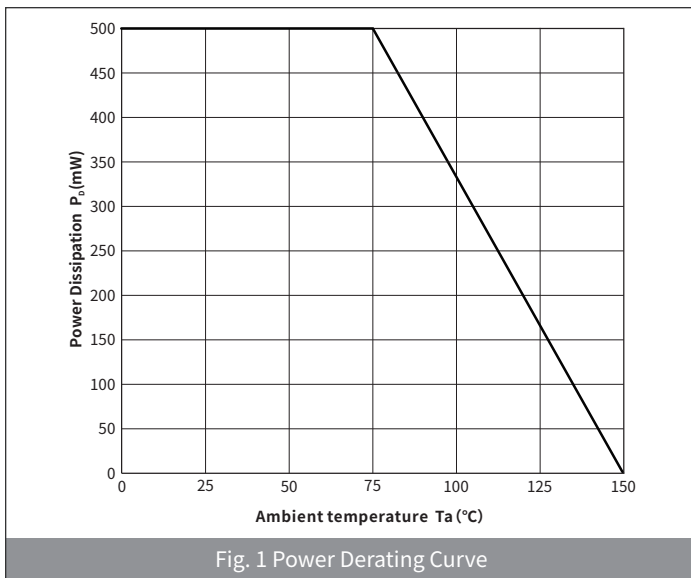
● Electrical Characteristics (Ta=25°C Unless otherwise noted)

Type Number	Type Code	Nominal Zener Voltage				Zener Impedance		Leakage 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)	
MM1Z2V0B	A4	1.96	2	2.04	5	100	120	0.5	
MM1Z2V2B	B4	2.16	2.2	2.24	5	100	120	0.7	
MM1Z2V4B	C4	2.35	2.4	2.45	5	100	120	1	
MM1Z2V7B	D4	2.65	2.7	2.75	5	110	120	1	
MM1Z3V0B	E4	2.94	3	3.06	5	120	50	1	
MM1Z3V3B	F4	3.23	3.3	3.37	5	130	20	1	
MM1Z3V6B	H4	3.53	3.6	3.67	5	130	10	1	
MM1Z3V9B	J4	3.82	3.9	3.98	5	130	5	1	
MM1Z4V3B	K4	4.21	4.3	4.39	5	130	5	1	
MM1Z4V7B	M4	4.61	4.7	4.79	5	130	2	1	
MM1Z5V1B	N4	5	5.1	5.20	5	130	2	1.5	
MM1Z5V6B	P4	5.49	5.6	5.71	5	80	1	2.5	
MM1Z6V2B	R4	6.08	6.2	6.32	5	50	1	3	
MM1Z6V8B	X4	6.66	6.8	6.94	5	30	0.5	3.5	
MM1Z7V5B	Y4	7.35	7.5	7.65	5	30	0.5	4	
MM1Z8V2B	Z4	8.04	8.2	8.36	5	30	0.5	5	
MM1Z9V1B	A5	8.92	9.1	9.28	5	30	0.5	6	
MM1Z10B	B5	9.8	10	10.2	5	30	0.1	7	
MM1Z11B	C5	10.78	11	11.22	5	30	0.1	8	
MM1Z12B	D5	11.76	12	12.24	5	35	0.1	9	
MM1Z13B	E5	12.74	13	13.26	5	35	0.1	10	
MM1Z15B	F5	14.7	15	15.3	5	40	0.1	11	
MM1Z16B	H5	15.68	16	16.32	5	40	0.1	12	
MM1Z18B	J5	17.64	18	18.36	5	45	0.1	13	
MM1Z20B	K5	19.6	20	20.4	5	50	0.1	15	
MM1Z22B	M5	21.56	22	22.44	5	55	0.1	17	
MM1Z24B	N5	23.52	24	24.48	5	60	0.1	19	
MM1Z27B	P5	26.46	27	27.54	5	70	0.1	21	
MM1Z30B	R5	29.4	30	30.6	5	80	0.1	23	
MM1Z33B	X5	32.34	33	33.66	5	80	0.1	25	
MM1Z36B	Y5	35.28	36	36.72	5	90	0.1	27	
MM1Z39B	Z5	38.22	39	39.78	2.5	100	2	30	
MM1Z43B	A6	42.14	43	43.86	2.5	130	2	33	

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

Type Number	Type Code	Nominal Zener Voltage			I _{ZT}	Zener Impedance	Leakage Current	
		V _Z				Z _{ZT@I_{ZT}}	I _{R@V_R}	
		Min.(V)	Nom.(V)	Max.(V)	(mA)	Z _{ZT} (Ω)	I _R (μA)	V _R (V)
MM1Z47B	B6	46.06	47	47.94	2.5	150	2	36
MM1Z51B	C6	49.98	51	52.02	2.5	180	1	39
MM1Z56B	D6	54.88	56	57.12	2.5	180	1	43
MM1Z62B	E6	60.76	62	63.24	2.5	200	0.2	47
MM1Z68B	F6	66.64	68	69.36	2.5	250	0.2	52
MM1Z75B	H6	73.5	75	76.5	2.5	300	0.2	57

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



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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 (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
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	-