

MM3Z2V0 THRU MM3Z75

SURFACE MOUNT ZENER DIODES

SOD-323 SURFACE MOUNT SILICON ZENER DIODES

Features

- Low Zener Impedance
- Power Dissipation of 200mW
- 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.

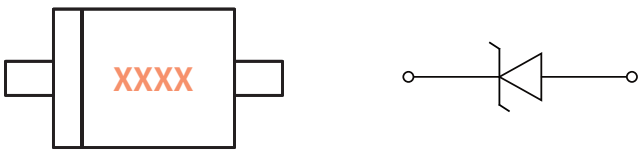
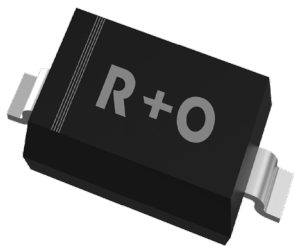
Mechanical Data

- Case: SOD-323
- 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
0.2 Watts

SOD-323

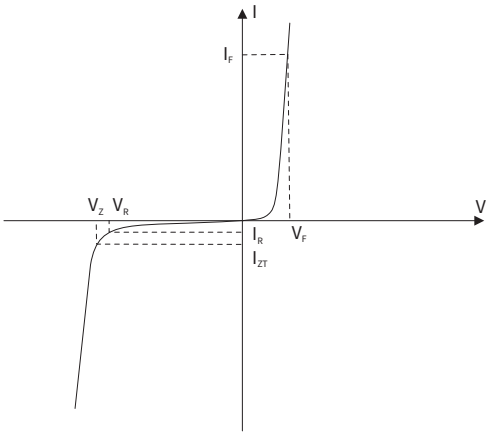


Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Power Dissipation	P_D	mW	200
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	417

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	Marking	Zener Voltage Range			Maximum Zener Impedance				Maximum Reverse Current		Typical Temperature coefficient @ I _{ZTC} (mV/°C)		Test Current I _{ZTC}
		V _Z @I _{ZT} (V)			Z _{ZT} @I _{ZT}		Z _{ZK} @I _{ZK}		I _R @V _R				
		Min.	Nom.	Max.	Z _{ZT} (Ω)	I _{ZT} (mA)	Z _{ZK} (Ω)	I _{ZK} (mA)	I _R (μA)	V _R (V)	Min.	Max.	
MM3Z2V0	WY	1.91	2.0	2.09	100	5	600	1.0	150	1.0	-3.5	0	5
MM3Z2V4	00	2.2	2.4	2.6	100	5	1000	0.5	50	1.0	-3.5	0	5
MM3Z2V7	01	2.5	2.7	2.9	100	5	1000	0.5	20	1.0	-3.5	0	5
MM3Z3V0	02	2.8	3.0	3.2	100	5	1000	0.5	10	1.0	-3.5	0	5
MM3Z3V3	05	3.1	3.3	3.5	95	5	1000	0.5	5	1.0	-3.5	0	5
MM3Z3V6	06	3.4	3.6	3.8	90	5	1000	0.5	5	1.0	-3.5	0	5
MM3Z3V9	07	3.7	3.9	4.1	90	5	1000	0.5	3	1.0	-3.5	-2.5	5
MM3Z4V3	08	4.0	4.3	4.6	90	5	1000	0.5	3	1.0	-3.5	0	5
MM3Z4V7	09	4.4	4.7	5.0	80	5	800	0.5	3	2.0	-3.5	0.2	5
MM3Z5V1	0A	4.8	5.1	5.4	60	5	800	0.5	2	2.0	-2.7	1.2	5
MM3Z5V6	0C	5.2	5.6	6.0	40	5	700	0.5	1	2.0	-2.0	2.5	5
MM3Z6V2	0E	5.8	6.2	6.6	10	5	100	0.5	3	4.0	0.4	3.7	5
MM3Z6V8	0F	6.4	6.8	7.2	15	5	160	0.5	2	4.0	1.2	4.5	5
MM3Z7V5	0G	7.0	7.5	7.9	15	5	160	0.5	1	5.0	2.5	5.3	5
MM3Z8V2	0H	7.7	8.2	8.7	15	5	160	0.5	0.7	5.0	3.2	6.2	5
MM3Z9V1	0K	8.5	9.1	9.6	15	5	160	0.5	0.2	7.0	3.8	7.0	5
MM3Z10	0L	9.4	10	10.6	20	5	160	0.5	0.1	8.0	4.5	8.0	5
MM3Z11	0M	10.4	11	11.6	20	5	160	0.5	0.1	8.0	5.4	9.0	5
MM3Z12	0N	11.4	12	12.7	25	5	80	0.5	0.1	8.0	6.0	10.0	5
MM3Z13	0P	12.4	13	14.1	30	5	80	0.5	0.1	8.0	7.0	11.0	5
MM3Z15	0T	13.8	15	15.6	30	5	400	0.5	0.05	10.5	9.2	13.0	5
MM3Z16	0U	15.3	16	17.1	40	5	400	0.5	0.05	11.2	10.4	14.0	5
MM3Z18	0W	16.8	18	19.1	45	5	400	0.5	0.05	12.6	12.4	16.0	5
MM3Z20	0Z	18.8	20	21.2	55	5	500	0.5	0.05	14.0	14.4	18.0	5
MM3Z22	10	20.8	22	23.3	55	5	500	0.5	0.05	15.4	16.4	20.0	5
MM3Z24	11	22.8	24	25.6	70	5	120	0.5	0.05	16.8	18.4	22.0	5
MM3Z27	12	25.1	27	28.9	80	2	300	0.5	0.05	18.9	21.4	25.3	2
MM3Z30	14	28.0	30	32.0	80	2	300	0.5	0.05	21.0	24.4	29.4	2
MM3Z33	18	31.0	33	35.0	80	2	300	0.5	0.05	23.1	27.4	33.4	2
MM3Z36	19	34.0	36	38.0	90	2	500	0.5	0.05	25.2	30.4	37.4	2
MM3Z39	20	37.0	39	41.0	130	2	500	0.5	0.05	27.3	33.4	41.2	2
MM3Z43	21	40.0	43	46.0	150	2	500	0.5	0.05	30.1	37.6	46.6	2
MM3Z47	1A	44.0	47	50.0	170	2	500	0.5	0.05	32.9	42.0	51.8	2
MM3Z51	1C	48.0	51	54.0	180	2	500	0.5	0.05	35.7	46.6	57.2	2
MM3Z56	1D	52.0	56	60.0	200	2	500	0.5	0.05	39.2	52.2	63..8	2
MM3Z62	1E	58.0	62	66.0	215	2	500	0.5	0.05	43.3	58.8	71.6	2
MM3Z68	1F	64.0	68	72.0	240	2	500	0.5	0.05	47.6	65.6	79.8	2
MM3Z75	1G	70.0	75	79.0	255	2	500	0.5	0.05	52.5	73.4	88.6	2

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● Ratings And Characteristics Curves ($T_a=25^\circ\text{C}$ Unless otherwise specified)

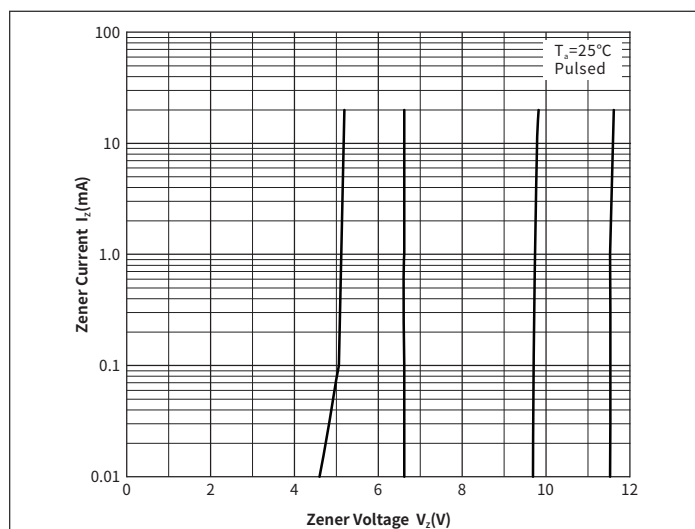


Fig. 1 Zener Characteristics(V_z Up to 12V)

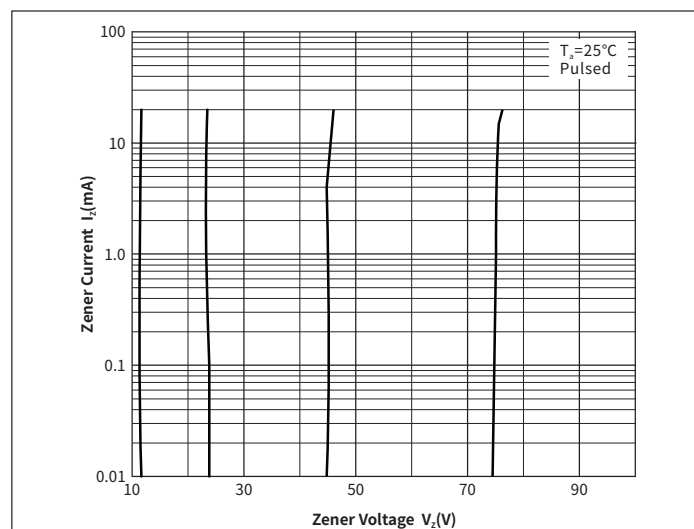


Fig.2 Zener Characteristics(V_z 12V to 75V)

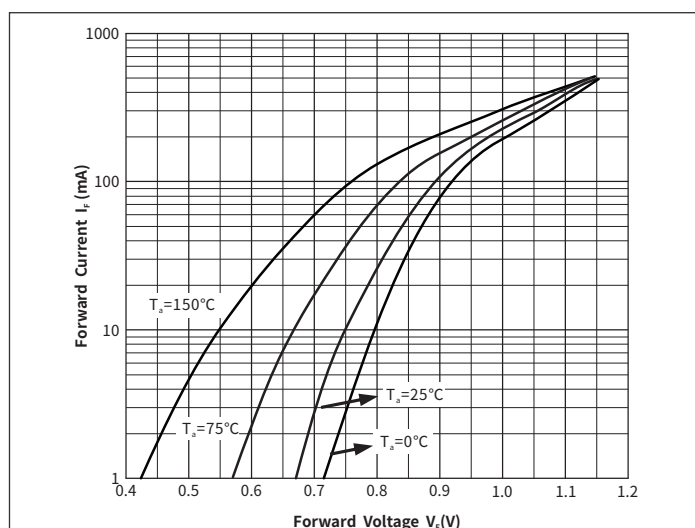


Fig.3 Typical Forward Voltage

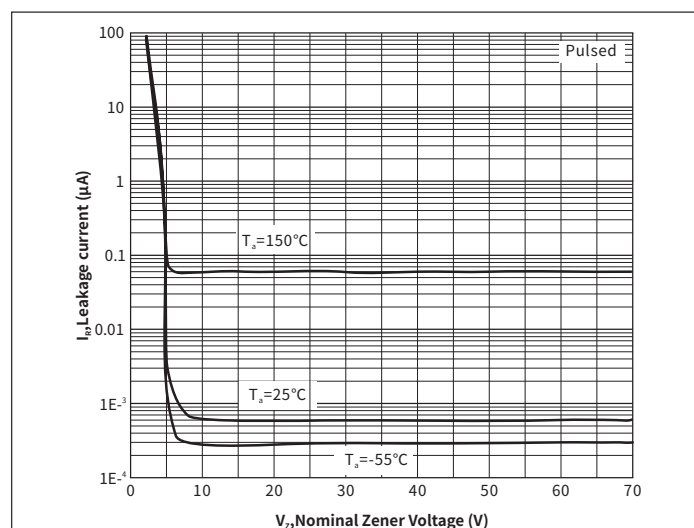
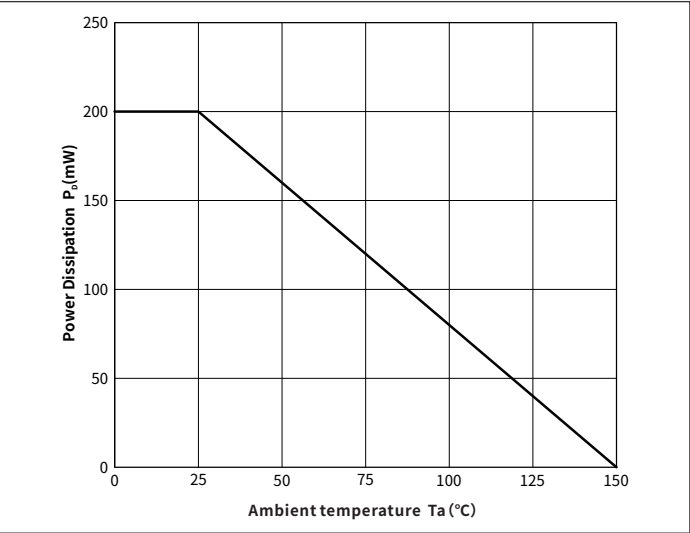
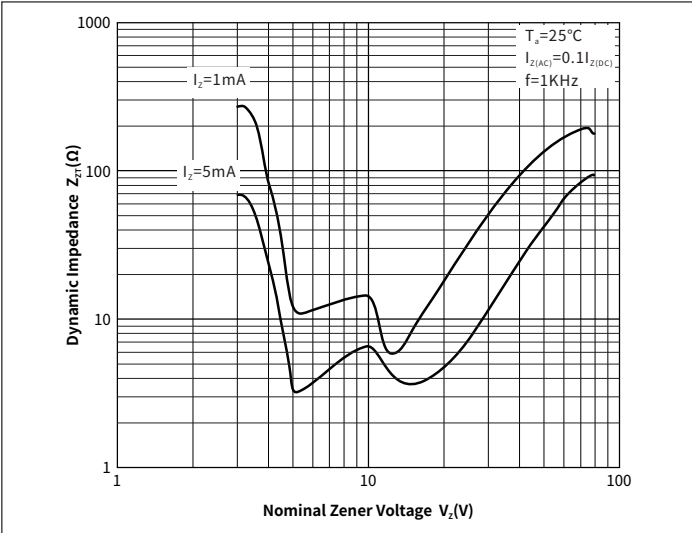
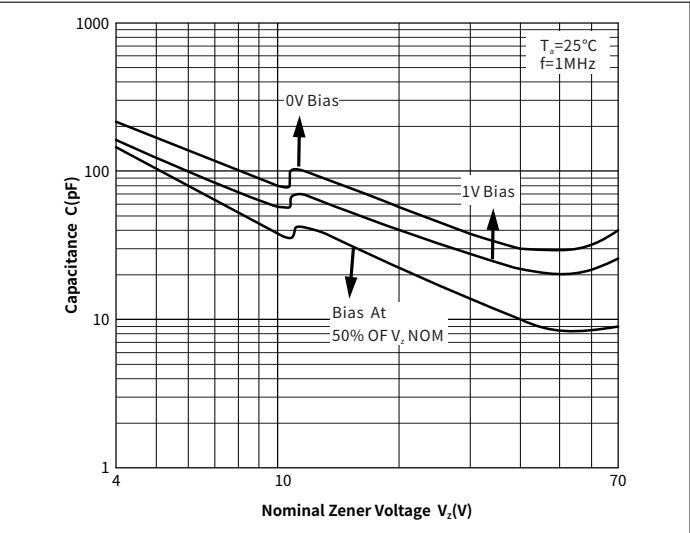


Fig.4 Typical Leakage Current

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● 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-323	R1	0.0048	3000	45000	180000	7"

● Package Outline Dimensions (SOD-323)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.60	1.80	0.063	0.071
B	0.25	0.40	0.010	0.016
C	2.30	2.80	0.091	0.110
D	0.80	1.10	0.031	0.043
D ₁	0.80	0.90	0.031	0.035
E	1.20	1.40	0.047	0.055
F	0.08	0.18	0.003	0.007
L	0.475REF		0.019REF	
L ₁	0.25	0.40	0.010	0.016
H	-	0.14	-	0.006

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
X	0.65	0.75	0.026	0.030
Y	0.65	0.75	0.026	0.030
Z	2.10	2.20	0.084	0.088