

### Surface Mount Zener Diodes

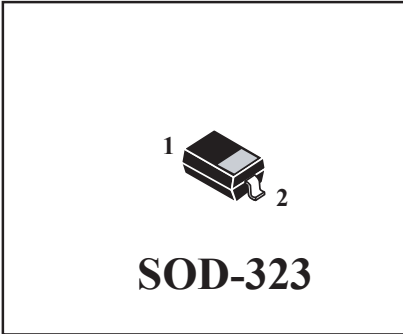
#### Features:

- \*200mw Power Dissipation
- \*Ideal for Surface Mountted Application
- \*Zener Breakdown Voltage Range 2.4V to 75V

#### Mechanical Data:

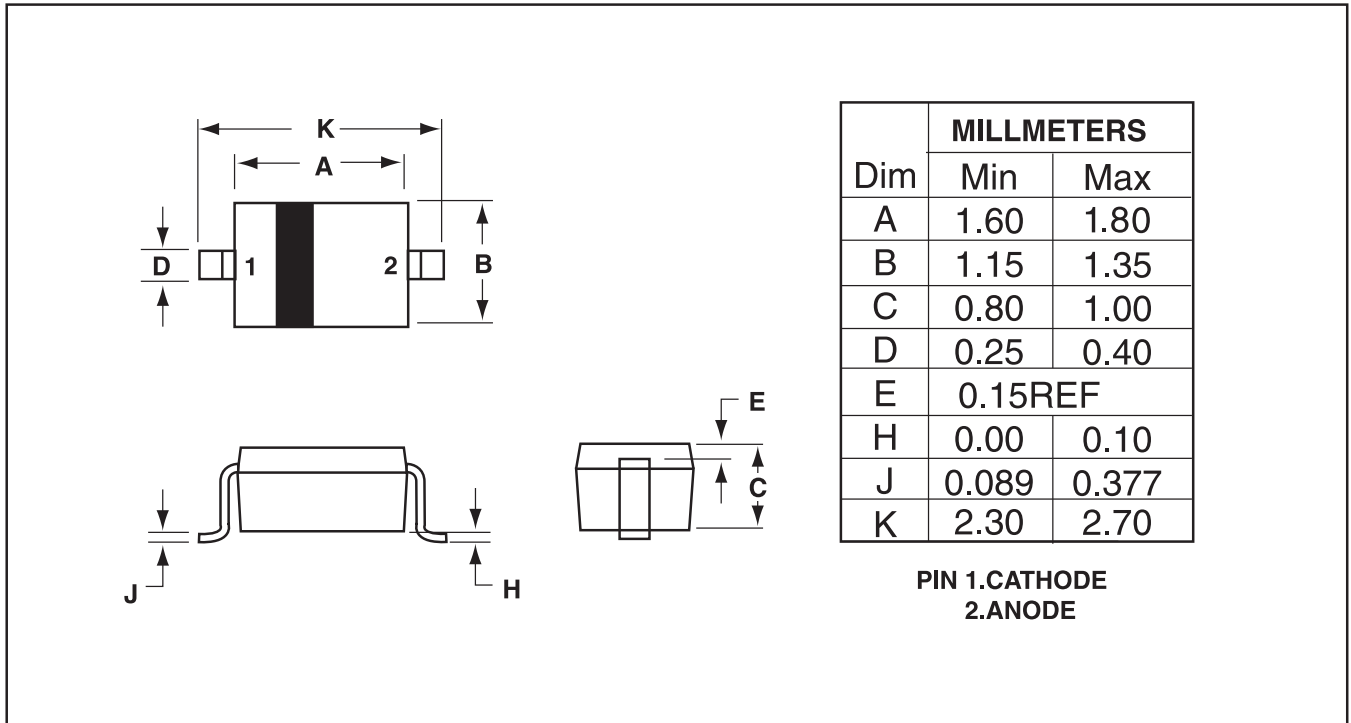
- \*Case : SOD-323 Molded plastic
- \*Terminals: Solderable per MIL-STD-202, Method 208
- \*Polarity: Cathode Indicated by Polarity Band
- \*Marking: Marking Code (See Table on Page 3)
- \*Weigh: 0.004grams(approx)

**SMALL SIGNAL  
ZENER DIODES  
200m WATTS**



### SOD-323 Outline Dimensions

Unit:mm



## Maximum Ratings and Electrical Characteristics (TA=25 °C Unless Otherwise Noted)

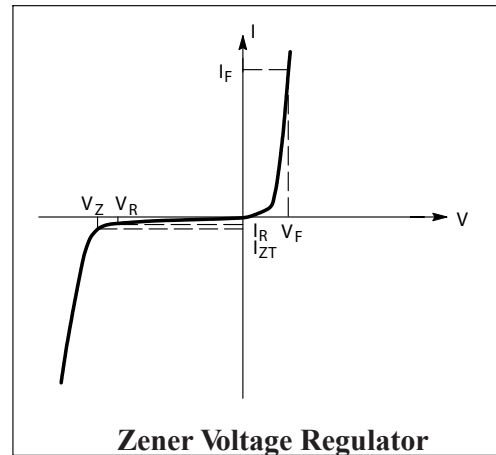
Characteristics	Symbol	Value	Unit
Total Power Dissipation on FR-5 Board <sup>(1)</sup> @TA=25 °C	PD	200	mW
Thermal Resistance Junction to Ambient Air <sup>(1)</sup>	RθJA	625	°C/W
Forward Voltage @ IF=10mA	VF	0.9	V
Junction and Storage Temperature Range	Tj,TSTG	-65 to+150	°C

NOTES:1.FR-4 Minimun Pad

## ELECTRICAL CHARACTERISTICS

(Pinout: 1-Anode, 2-No Connection, 3-Cathode) (TA = 25 °C unless otherwise noted, VF = 0.9 V Max. @ IF = 10 mA)

Symbol	Parameter
VZ	Reverse Zener Voltage @ IZT
IZT	Reverse Current
ZZT	Maximum Zener Impedance @ IZT
IR	Reverse Leakage Current @ VR
VR	Reverse Voltage
IF	Forward Current
VF	Forward Voltage @ IF
ΘVZ	Maximum Temperature Coefficient of VZ
C	Max. Capacitance @ VR = 0 and f = 1 MHz



## Device Marking

Item	Marking	Equivalent Circuit Diagram
MM3Z Series	XX=Specific Device Code (See Table on page3)	

ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 0.9\text{ V Max.}$  @  $I_F = 10\text{ mA}$  for all types)

Device	Device Marking	Zener Voltage (Note)			Zener Impedance			Leakage Current		$\Theta V_Z$ (mV/k) @ $I_{ZT}$		C @ $V_R=0$ f=1MHz	
		$V_Z$ (Volts)			$Z_{ZT}$ @ $I_{ZT}$	$Z_{ZK}$ @ $I_{ZK}$		$I_R$ @ $V_R$		Min	Max		
		Min	Nom	Max	mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$			Volts	pF
MM3Z2V4T1	00	2.2	2.4	2.6	5	100	1000	0.5	50	1.0	$\pm 3.5$	0	450
MM3Z2V7T1	01	2.5	2.7	2.9	5	100	1000	0.5	20	1.0	$\pm 3.5$	0	450
MM3Z3V0T1	02	2.8	3.0	3.2	5	100	1000	0.5	10	1.0	$\pm 3.5$	0	450
MM3Z3V3T1	05	3.1	3.3	3.5	5	95	1000	0.5	5	1.0	$\pm 3.5$	0	450
MM3Z3V6T1	06	3.4	3.6	3.8	5	90	1000	0.5	5	1.0	$\pm 3.5$	0	450
MM3Z3V9T1	07	3.7	3.9	4.1	5	90	1000	0.5	3	1.0	$\pm 3.5$	$\pm 2.5$	450
MM3Z4V3T1	08	4.0	4.3	4.6	5	90	1000	0.5	3	1.0	$\pm 3.5$	0	450
MM3Z4V7T1	09	4.4	4.7	5.0	5	80	800	0.5	3	2.0	$\pm 3.5$	0.2	260
MM3Z5V1T1	0A	4.8	5.1	5.4	5	60	500	0.5	2	2.0	$\pm 2.7$	1.2	225
MM3Z5V6T1	0C	5.2	5.6	6.0	5	40	200	0.5	1	2.0	$\pm 2.0$	2.5	200
MM3Z6V2T1	0E	5.8	6.2	6.6	5	10	100	0.5	3	4.0	0.4	3.7	185
MM3Z6V8T1	0F	6.4	6.8	7.2	5	15	160	0.5	2	4.0	1.2	4.5	155
MM3Z7V5T1	0G	7.0	7.5	7.9	5	15	160	0.5	1	5.0	2.5	5.3	140
MM3Z8V2T1	0H	7.7	8.2	8.7	5	15	160	0.5	0.7	5.0	3.2	6.2	135
MM3Z9V1T1	0K	8.5	9.1	9.6	5	15	160	0.5	0.2	7.0	3.8	7.0	130
MM3Z10VT1	0L	9.4	10	10.6	5	20	160	0.5	0.1	8.0	4.5	8.0	130
MM3Z11VT1	0M	10.4	11	11.6	5	20	160	0.5	0.1	8.0	5.4	9.0	130
MM3Z12VT1	0N	11.4	12	12.7	5	25	80	0.5	0.1	8.0	6.0	10	130
MM3Z13VT1	0P	12.4	13.25	14.1	5	30	80	0.5	0.1	8.0	7.0	11	120
MM3Z15VT1	0T	14.3	15	15.8	5	30	80	0.5	0.05	10.5	9.2	13	110
MM3Z16VT1	0U	15.3	16.2	17.1	5	40	80	0.5	0.05	11.2	10.4	14	105
MM3Z18VT1	0W	16.8	18	19.1	5	45	80	0.5	0.05	12.6	12.4	16	100
MM3Z20VT1	0Z	18.8	20	21.2	5	55	100	0.5	0.05	14.0	14.4	18	85
MM3Z22VT1	10	20.8	22	23.3	5	55	100	0.5	0.05	15.4	16.4	20	85
MM3Z24VT1	11	22.8	24.2	25.6	5	70	120	0.5	0.05	16.8	18.4	22	80
MM3Z27VT1	12	25.1	27	28.9	2	80	300	0.5	0.05	18.9	21.4	25.3	70
MM3Z30VT1	14	28	30	32	2	80	300	0.5	0.05	21.0	24.4	29.4	70
MM3Z33VT1	18	31	33	35	2	80	300	0.5	0.05	23.2	27.4	33.4	70
MM3Z36VT1	19	34	36	38	2	90	500	0.5	0.05	25.2	30.4	37.4	70
MM3Z39VT1	20	37	39	41	2	130	500	0.5	0.05	27.3	33.4	41.2	45
MM3Z43VT1	21	40	43	46	2	150	500	0.5	0.05	30.1	37.6	46.6	40
MM3Z47VT1	1A	44	47	50	2	170	500	0.5	0.05	32.9	42.0	51.8	40
MM3Z51VT1	1C	48	51	54	2	180	500	0.5	0.05	35.7	46.6	57.2	40
MM3Z56VT1	1D	52	56	60	2	200	500	0.5	0.05	39.2	52.2	63.8	40
MM3Z62VT1	1E	58	62	66	2	215	500	0.5	0.05	43.4	58.8	71.6	35
MM3Z68VT1	1F	64	68	72	2	240	500	0.5	0.05	47.6	65.6	79.8	35
MM3Z75VT1	1G	70	75	79	2	255	500	0.5	0.05	52.5	73.4	88.6	35

Note: Zener voltage is measured with a pulse test current  $I_Z$  at an ambient temperature of  $25^\circ\text{C}$ .

## Typical Characteristics

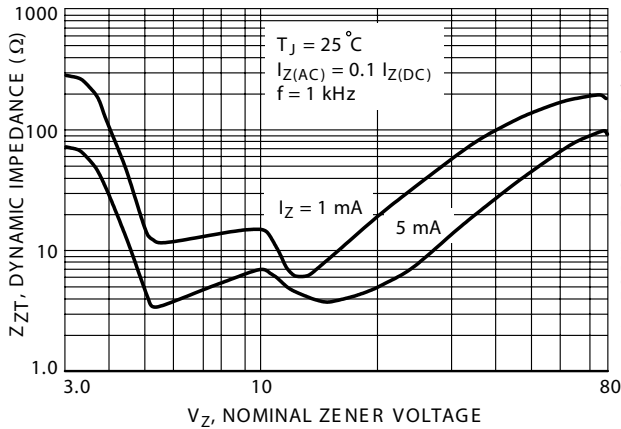


Figure 1. Effect of Zener Voltage on Zener Impedance

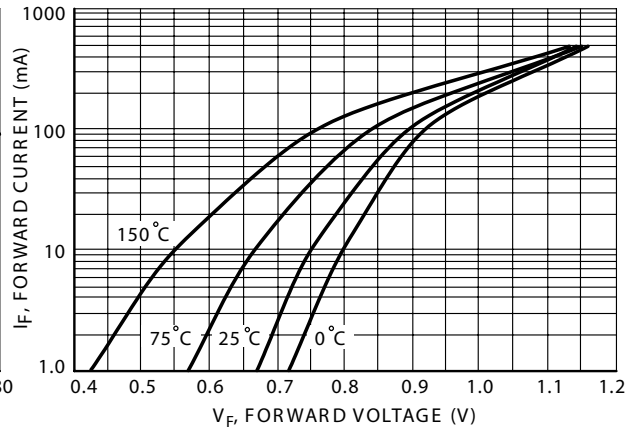


Figure 2. Typical Forward Voltage

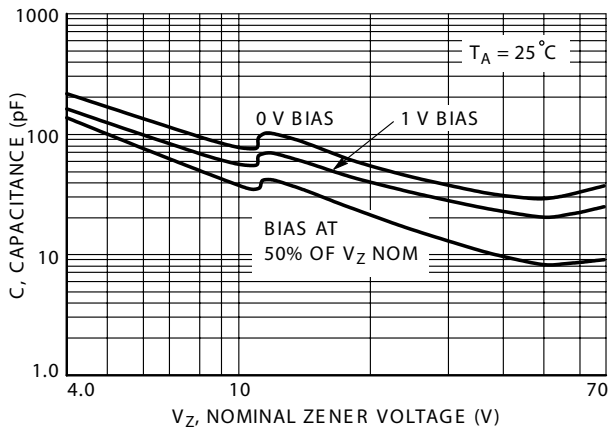


Figure 3. Typical Capacitance

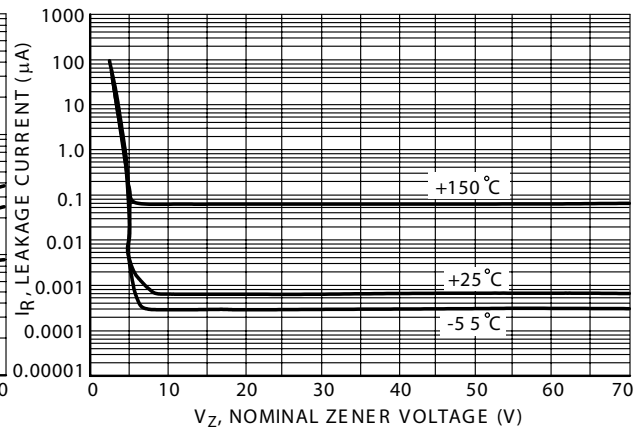
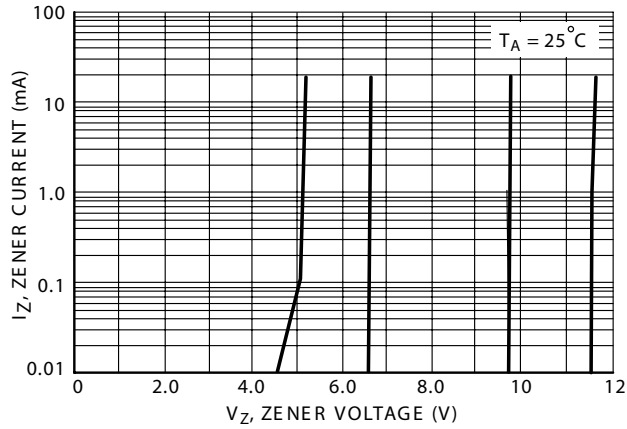
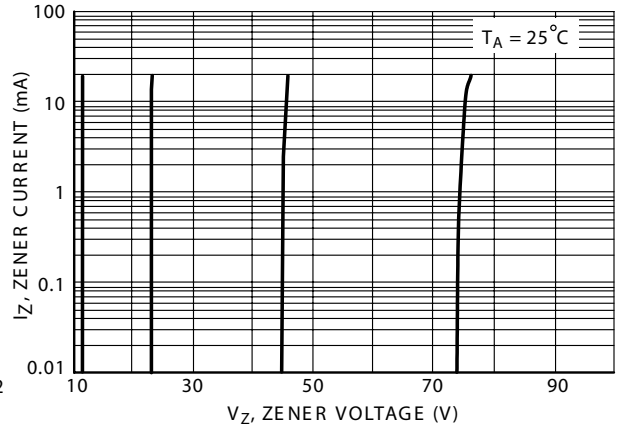


Figure 4. Typical Leakage Current

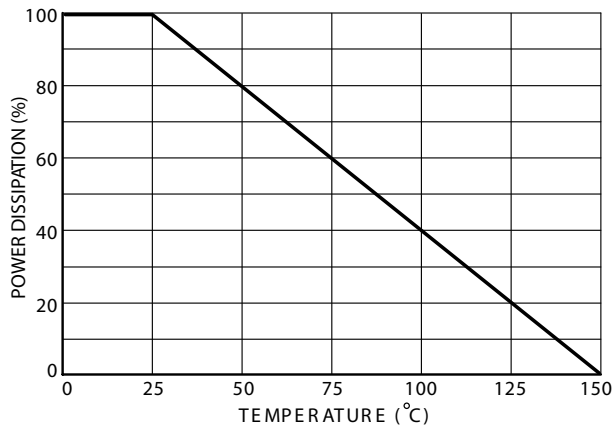
### Typical Characteristics



**Figure 5. Zener Voltage versus Zener Current  
( $V_Z$  Up to 12 V)**



**Figure 6. Zener Voltage versus Zener Current  
(12 V to 75 V)**



**Figure 7. Steady State Power Derating**