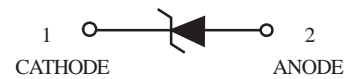


# Zener Diode

200mW SOD-323 Surface Mount

• **Features**

- 1) Non-wire bonding structure improves
- 2) High demand voltage range (2.4V-75V)
- 3) Nominal Voltage Tolerance About  $\pm 5\%$
- 4) ESD Rating of Class 3 ( $>16\text{kV}$ ) per Human Body Model
- 5) This is a Pb-Free device
- 6) We declare that the material of product compliance with RoHS requirements
- 7) AEC-Q101 qualified



• **Device Marking and Ordering Information**

Device	Package	Shipping
FDZ**	SOD-323	3000/Tape&Reel

\* See specific marking table.

• **ABSOLUTE MAXIMUM RATINGS** ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Limit	Unit
Power dissipation	P	200	mW
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature	$T_{sg}$	$-55 \sim +150$	$^\circ\text{C}$
Operating temperature	$T_{opr}$	$-55 \sim +150$	$^\circ\text{C}$



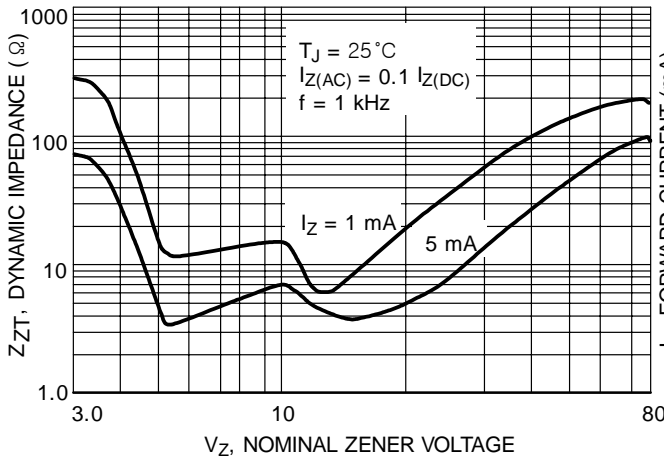
# FDZ2.4 ~ FDZ75

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise noted, V<sub>F</sub>=0.9V Max. @ I<sub>F</sub>=10mA for all types)

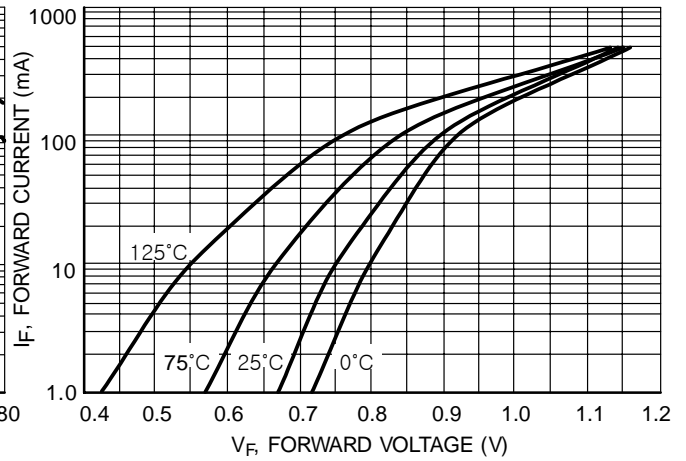
Device	Device Marking	Zener Voltage (Note 2.)				Zener Impedance			Leakage Current		ΘV <sub>Z</sub> (mV/K) @I <sub>ZT</sub>		C @V <sub>R</sub> =0 f=1MHz pF
		V <sub>Z</sub> (Volts)			@I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>		I <sub>R</sub> @V <sub>R</sub>		Min.	Max.	
		Min.	Nom.	Max.	mA	Ω	Ω	mA	μA	Volts			
FDZ2.4	00	2.2	2.4	2.6	5	100	1000	0.5	50	1.0	-3.5	0	450
FDZ2.7	01	2.5	2.7	2.9	5	100	1000	0.5	20	1.0	-3.5	0	450
FDZ3.0	02	2.8	3.0	3.2	5	100	1000	0.5	10	1.0	-3.5	0	450
FDZ3.3	05	3.1	3.3	3.5	5	95	1000	0.5	5	1.0	-3.5	0	450
FDZ3.6	06	3.4	3.6	3.8	5	90	1000	0.5	5	1.0	-3.5	0	450
FDZ3.9	07	3.7	3.9	4.1	5	90	1000	0.5	3	1.0	-3.5	-2.5	450
FDZ4.3	08	4.0	4.3	4.6	5	90	1000	0.5	3	1.0	-3.5	0	450
FDZ4.7	09	4.4	4.7	5.0	5	80	800	0.5	3	2.0	-3.5	0.2	260
FDZ5.1	0A	4.8	5.1	5.4	5	60	500	0.5	2	2.0	-2.7	1.2	225
FDZ5.6	0C	5.2	5.6	6.0	5	40	200	0.5	1	2.0	-2.0	2.5	200
FDZ6.2	0E	5.8	6.2	6.6	5	10	100	0.5	3	4.0	0.4	3.7	185
FDZ6.8	0F	6.4	6.8	7.2	5	15	160	0.5	2	4.0	1.2	4.5	155
FDZ7.5	0G	7.0	7.5	7.9	5	15	160	0.5	1	5.0	2.5	5.3	140
FDZ8.2	0H	7.7	8.2	8.7	5	15	160	0.5	0.7	5.0	3.2	6.2	135
FDZ9.1	0K	8.5	9.1	9.6	5	15	160	0.5	0.2	7.0	3.8	7.0	130
FDZ10	0L	9.4	10	10.6	5	20	160	0.5	0.1	8.0	4.5	8.0	130
FDZ11	0M	10.4	11	11.6	5	20	160	0.5	0.1	8.0	5.4	9.0	130
FDZ12	0N	11.4	12	12.7	5	25	80	0.5	0.1	8.0	6.0	10	130
FDZ13	0P	12.4	13.25	14.1	5	30	80	0.5	0.1	8.0	7.0	11	120
FDZ15	0T	14.3	15	15.8	5	30	80	0.5	0.05	10.5	9.2	13	110
FDZ16	0U	15.3	16.2	17.1	5	40	80	0.5	0.05	11.2	10.4	14	105
FDZ18	0W	16.8	18	19.1	5	45	80	0.5	0.05	12.6	12.4	16	100
FDZ20	0Z	18.8	20	21.2	5	55	100	0.5	0.05	14.0	14.4	18	85
FDZ22	10	20.8	22	23.3	5	55	100	0.5	0.05	15.4	16.4	20	85
FDZ24	11	22.8	24.2	25.6	5	70	120	0.5	0.05	16.8	18.4	22	80
FDZ27	12	25.1	27	28.9	2	80	300	0.5	0.05	18.9	21.4	25.3	70
FDZ30	14	28	30	32	2	80	300	0.5	0.05	21.0	24.4	29.4	70
FDZ33	18	31	33	35	2	80	300	0.5	0.05	23.2	27.4	33.4	70
FDZ36	19	34	36	38	2	90	500	0.5	0.05	25.2	30.4	37.4	70
FDZ39	20	37	39	41	2	130	500	0.5	0.05	27.3	33.4	41.2	45
FDZ43	21	40	43	46	2	150	500	0.5	0.05	30.1	37.6	46.6	40
FDZ47	1A	44	47	50	2	170	500	0.5	0.05	32.9	42.0	51.8	40
FDZ51	1C	48	51	54	2	180	500	0.5	0.05	35.7	46.6	57.2	40
FDZ56	1D	52	56	60	2	200	500	0.5	0.05	39.2	52.2	63.8	40
FDZ62	1E	58	62	66	2	215	500	0.5	0.05	43.4	58.8	71.6	35
FDZ68	1F	64	68	72	2	240	500	0.5	0.05	47.6	65.6	79.8	35
FDZ75	1G	70	75	79	2	255	500	0.5	0.05	52.5	73.4	88.6	35

Notes) 2. Zender voltage is measured with a pulse test current I<sub>Z</sub> at an ambient temperature of 25°C)

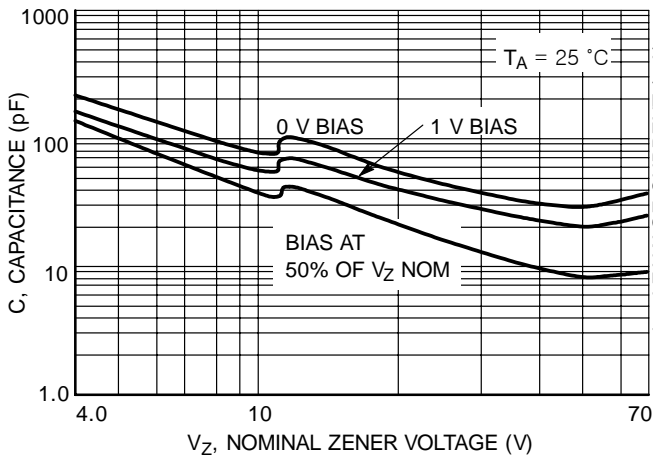
## Typical Characteristics



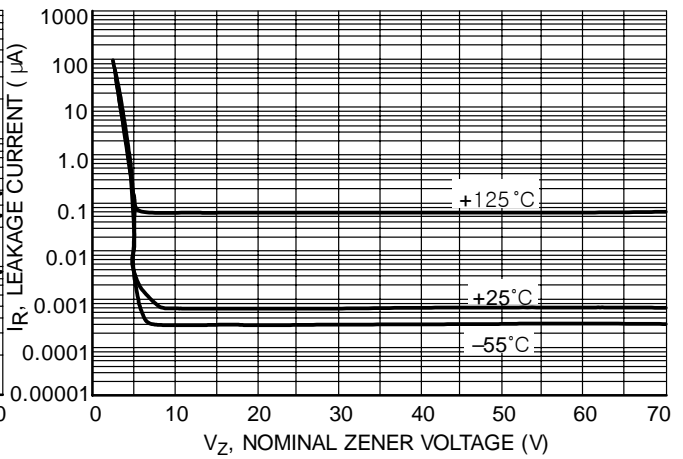
**Figure 1. Effect of Zener Voltage on Zener Impedance**



**Figure 2. Typical Forward Voltage**



**Figure 3. Typical Capacitance**



**Figure 4. Typical Leakage Current**

## Typical Characteristics

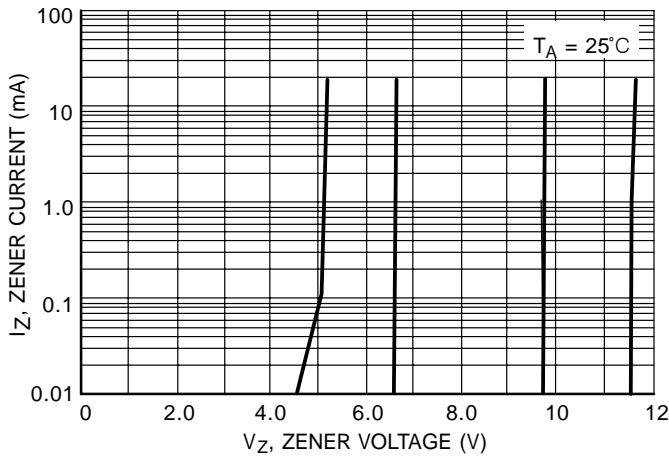


Figure 5. Zener Voltage versus Zener Current  
( $V_Z$  Up to 12 V)

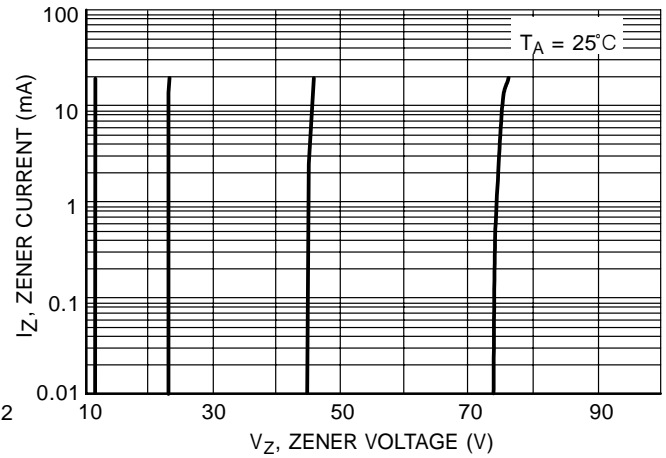


Figure 6. Zener Voltage versus Zener Current  
(12 V to 75 V)

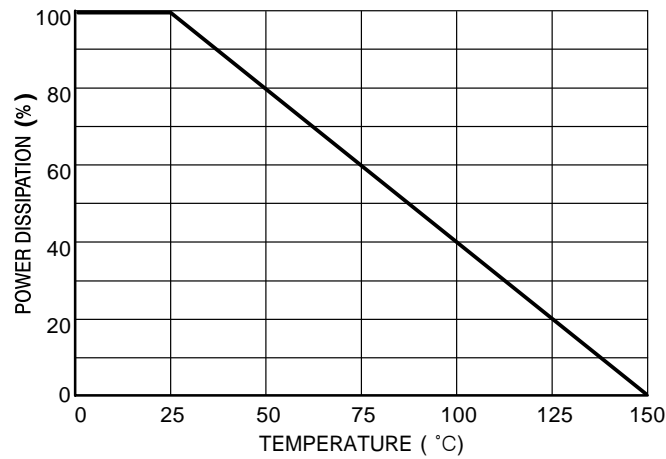
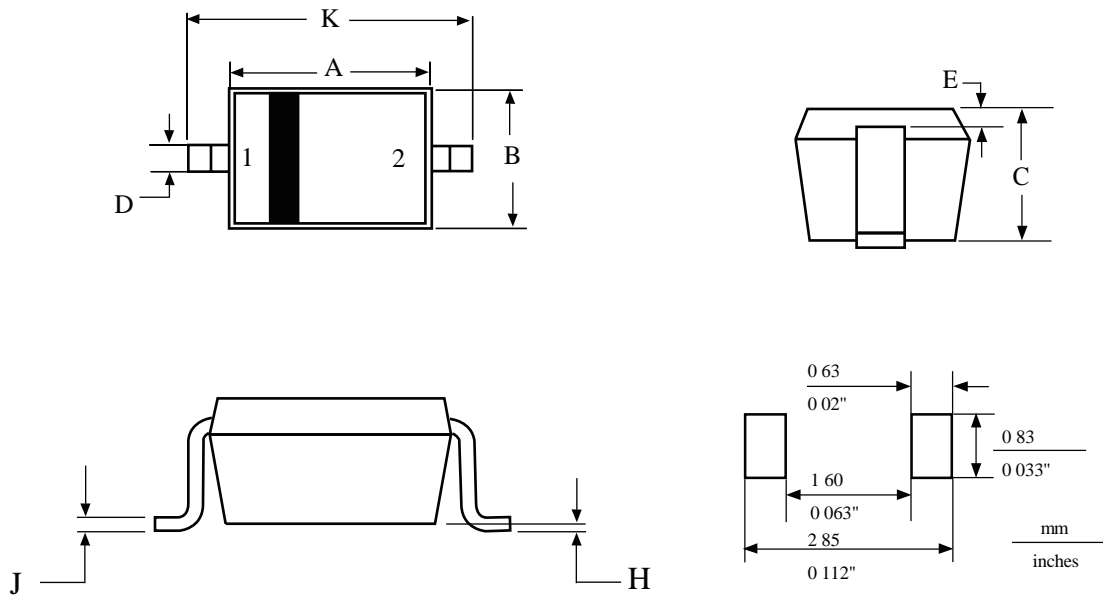


Figure 7. Steady State Power Derating

## SOD-323 / SC-76 / USC



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.60	1.80	0.063	0.071
b	1.15	1.35	0.045	0.053
C	0.80	1.00	0.031	0.039
D	0.25	0.40	0.010	0.016
E	0.15 REF		0.006 REF	
H	0.00	0.10	0.000	0.004
J	0.089	0.177	0.0035	0.0070
K	2.30	2.70	0.091	0.106

### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. 477-01 OBSOLETE, NEW STANDARD 477-22.

PIN: 1: CATHODE

2: ANODE