

## 200mW SOD-523 SURFACE MOUNT Very Small Outline Flat Lead Plastic Package Zener Voltage Regulators

Green Product



SOD-523 Flat Lead

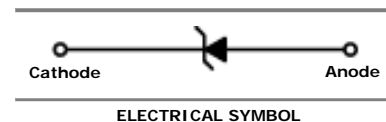
### Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$P_D$	Power Dissipation	200	mW
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$T_{OPR}$	Operating Temperature Range	-55 to +150	$^\circ\text{C}$

These ratings are limiting values above which the serviceability of the diode may be impaired.

### Specification Features:

- Wide Zener Voltage Range Selection, 2.0V to 75V
- Flat Lead SOD-523 Small Outline Plastic Package
- Extremely Small SOD-523 Package
- Surface Device Type Mounting
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Lead Finish
- Band Indicates Cathode



### Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	Device Marking	$V_Z @ I_{ZT}$ (Volts)			$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_{ZK}$ (mA)	$Z_{ZK} @ I_{ZK}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
		Min	Nom	Max						
TCMM5Z2V0	5 $\pm$	1.90	2.0	2.10	5	100	1	564	120	0.5
TCMM5Z2V2	5 $\perp$	2.09	2.2	2.31	5	100	1	564	120	0.7
TCMM5Z2V4	50	2.2	2.4	2.6	5	100	1	1000	50	1
TCMM5Z2V7	51	2.5	2.7	2.9	5	100	1	1000	20	1
TCMM5Z3V0	52	2.8	3.0	3.2	5	100	1	1000	10	1
TCMM5Z3V3	53	3.1	3.3	3.5	5	95	1	1000	5	1
TCMM5Z3V6	54	3.4	3.6	3.8	5	90	1	1000	5	1
TCMM5Z3V9	55	3.7	3.9	4.1	5	90	1	1000	3	1
TCMM5Z4V3	56	4.0	4.3	4.6	5	90	1	1000	3	1
TCMM5Z4V7	57	4.4	4.7	5.0	5	80	1	800	3	2
TCMM5Z5V1	58	4.8	5.1	5.4	5	60	1	500	2	2
TCMM5Z5V6	59	5.2	5.6	6.0	5	40	1	200	1	2
TCMM5Z6V2	5A	5.8	6.2	6.6	5	10	1	100	3	4
TCMM5Z6V8	5B	6.4	6.8	7.2	5	15	1	160	2	4
TCMM5Z7V5	5C	7.0	7.5	7.9	5	15	1	160	1	5
TCMM5Z8V2	5D	7.7	8.2	8.7	5	15	1	160	0.7	5
TCMM5Z9V1	5E	8.5	9.1	9.6	5	15	1	160	0.2	7
TCMM5Z10V	5F	9.4	10	10.6	5	20	1	160	0.1	8
TCMM5Z11V	5G	10.4	11	11.6	5	20	1	160	0.1	8
TCMM5Z12V	5H	11.4	12	12.7	5	25	1	80	0.1	8
TCMM5Z13V	5J	12.4	13	14.1	5	30	1	80	0.1	8
TCMM5Z15V	5K	14.3	15	15.8	5	30	1	80	0.05	10.5
TCMM5Z16V	5L	15.3	16	17.1	5	40	1	80	0.05	11.2

**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

Device Type	Device Marking	$V_Z @ I_{ZT}$ (Volts)			$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_{ZK}$ (mA)	$Z_{ZK} @ I_{ZK}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
		Min	Nom	Max						
TCMM5Z18V	5M	16.8	18	19.1	5	45	1	80	0.05	12.6
TCMM5Z20V	5N	18.8	20	21.2	5	55	1	100	0.05	14
TCMM5Z22V	5P	20.8	22	23.3	5	55	1	100	0.05	15.4
TCMM5Z24V	5R	22.8	24	25.6	5	70	1	120	0.05	16.8
TCMM5Z27V	5S	25.1	27	28.9	2	80	0.5	300	0.05	18.9
TCMM5Z30V	5T	28	30	32	2	80	0.5	300	0.05	21
TCMM5Z33V	5U	31	33	35	2	80	0.5	300	0.05	23.2
TCMM5Z36V	5V	34	36	38	2	90	0.5	500	0.05	25.2
TCMM5Z39V	5X	37	39	41	2	130	0.5	500	0.05	27.3
TCMM5Z43V	5Y	40	43	46	2	150	0.5	500	0.05	30.1
TCMM5Z47V	5Z	44	47	50	2	170	0.5	500	0.05	32.9
TCMM5Z51V	5-	48	51	54	2	180	0.5	500	0.05	35.7
TCMM5Z56V	5=	52	56	60	2	200	0.5	500	0.05	39.2
TCMM5Z62V	5≡	58	62	66	2	215	0.5	500	0.05	43.4
TCMM5Z68V	5>	64	68	72	2	240	0.5	500	0.05	47.6
TCMM5Z75V	5<	70	75	79	2	255	0.5	500	0.05	52.5

 $V_F$  Forward Voltage = 1 V Maximum @  $I_F = 10$  mA for all types

**Notes:**

1. The Zener Voltage ( $V_Z$ ) is tested under pulse condition of 10mS.
2. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong Electronics representative.
3. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed to  $I_{ZT}$  or  $I_{ZK}$ .

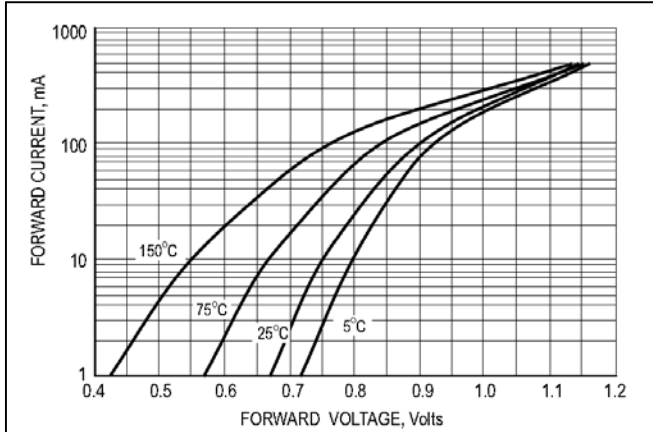
**RATING AND CHARACTERISTIC CURVES**


Fig.1 TYPICAL FORWARD VOLTAGE

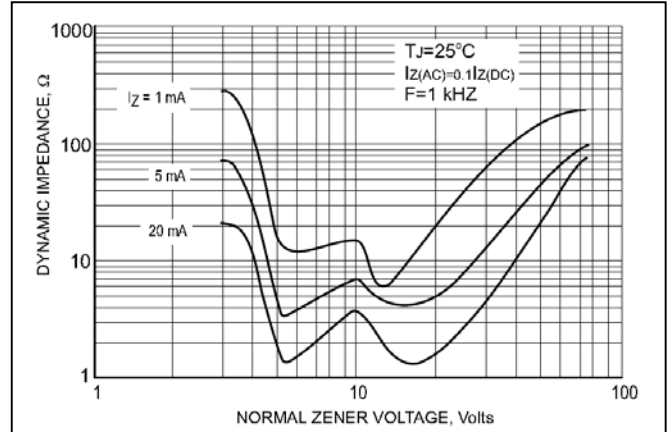


Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

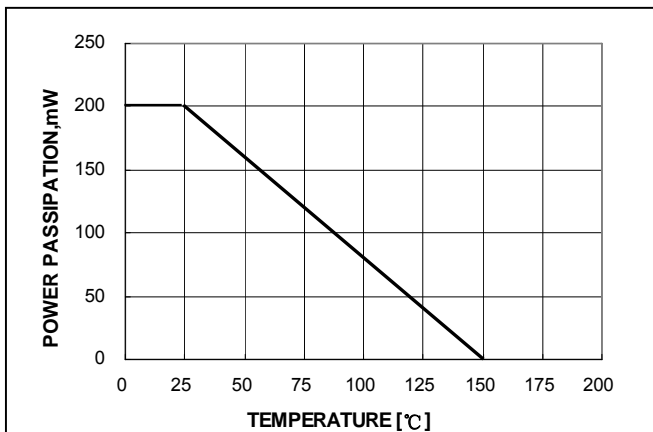


Fig.3 POWER DISSIPATION VS. AMBIENT TEMP.

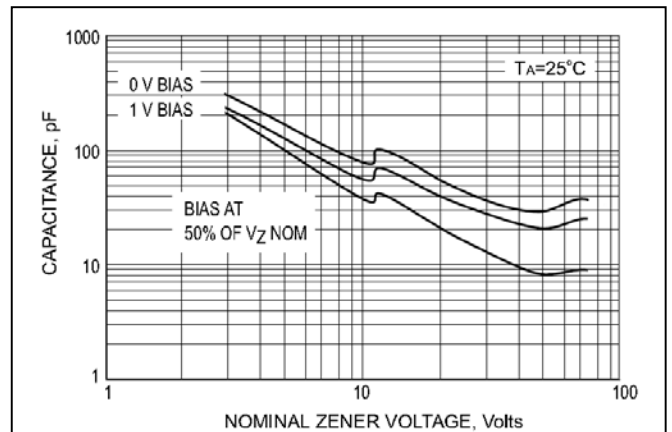


Fig.4 TYPICAL CAPACITANCE

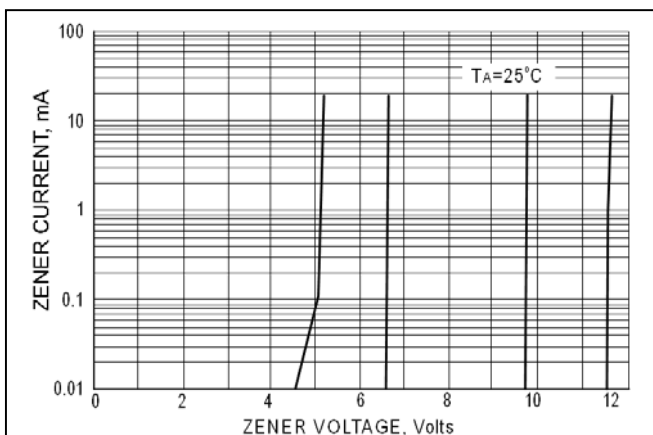


Fig.5 ZENER BREAKDOWN CHARACTERISTICS

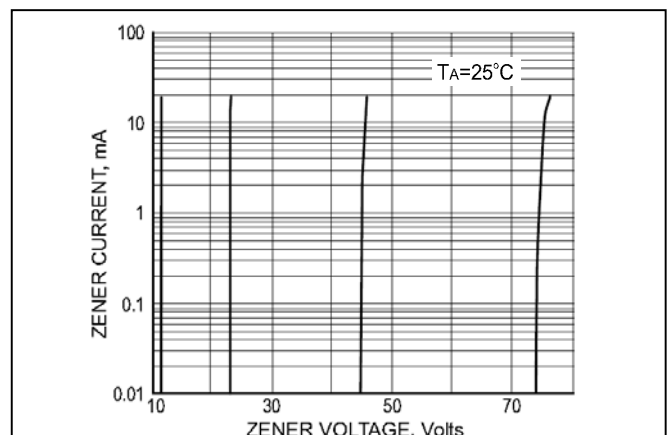
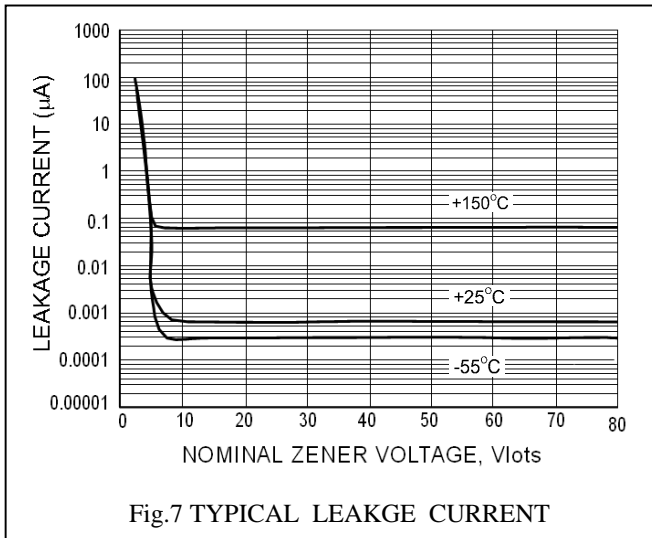
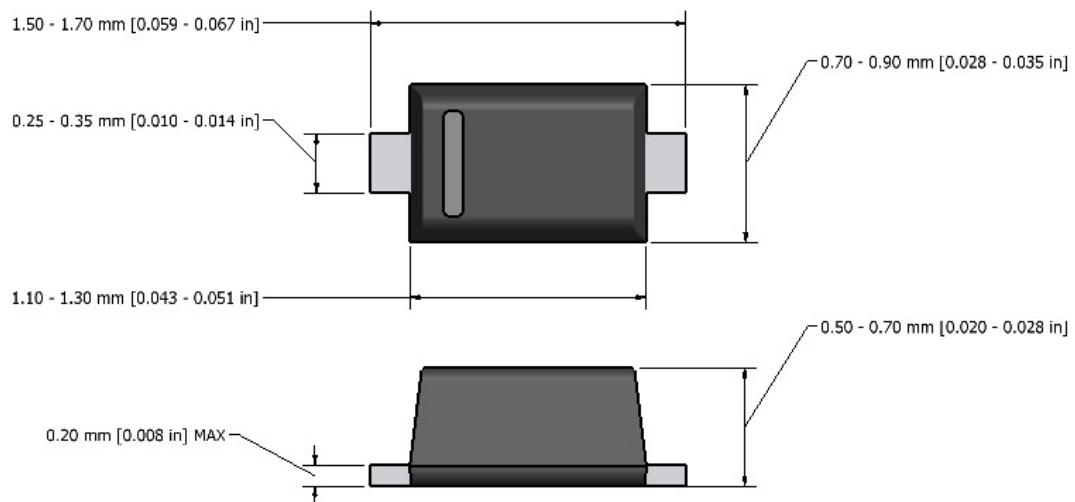


Fig.6 ZENER BREAKDOWN CHARACTERISTICS



**Flat Lead SOD-523 Package Outline**



**Note:** Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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