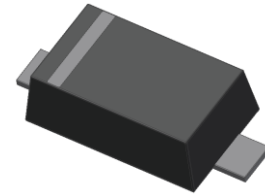


# 500mW SOD-123 SURFACE MOUNT Flat Lead Surface Mount Plastic Package Zener Voltage Regulators

Green Product



SOD-123 Flat Lead

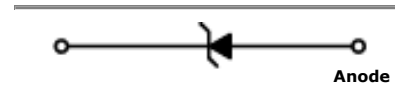
### Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$P_D$	Power Dissipation	500	mW
$T_{STG}$	Storage Temperature Range	-65 to +150	$^\circ\text{C}$
$T_{OPR}$	Operating Temperature Range	-65 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, 2.4V to 75V
- VZ Tolerance Selection of  $\pm 5\%$
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Lead Finish
- Band Indicates Cathode
- Weight: approx. 0.01g
- AEC-Q101 Qualified



ELECTRICAL SYMBOL

### 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	$Z_{ZK} @ I_{ZK} = 0.25\text{mA}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
		Min	Nom	Max					
MMSZ5221BW	Z2V4	2.28	2.4	2.52	20	30	1200	100	1
MMSZ5222BW	Z2V5	2.38	2.5	2.63	20	30	1250	100	1
MMSZ5223BW	Z2V7	2.57	2.7	2.84	20	30	1300	75	1
MMSZ5224BW	Z2V8	2.66	2.8	2.94	20	30	1400	75	1
MMSZ5225BW	Z3V0	2.85	3.0	3.15	20	29	1600	50	1
MMSZ5226BW	Z3V3	3.14	3.3	3.47	20	28	1600	25	1
MMSZ5227BW	Z3V6	3.42	3.6	3.78	20	24	1700	15	1
MMSZ5228BW	Z3V9	3.71	3.9	4.10	20	23	1900	10	1
MMSZ5229BW	Z4V3	4.09	4.3	4.52	20	22	2000	5	1
MMSZ5230BW	Z4V7	4.47	4.7	4.94	20	19	1900	5	2
MMSZ5231BW	Z5V1	4.85	5.1	5.36	20	17	1600	5	2
MMSZ5232BW	Z5V6	5.32	5.6	5.88	20	11	1600	5	3
MMSZ5233BW	Z6V0	5.70	6.0	6.30	20	7	1600	5	3.5
MMSZ5234BW	Z6V2	5.89	6.2	6.51	20	7	1000	5	4
MMSZ5235BW	Z6V8	6.46	6.8	7.14	20	5	750	3	5
MMSZ5236BW	Z7V5	7.13	7.5	7.88	20	6	500	3	6
MMSZ5237BW	Z8V2	7.79	8.2	8.61	20	8	500	3	6.5
MMSZ5238BW	Z8V7	8.27	8.7	9.14	20	8	600	3	6.5
MMSZ5239BW	Z9V1	8.65	9.1	9.56	20	10	600	3	7
MMSZ5240BW	Z10V	9.50	10	10.50	20	17	600	3	8
MMSZ5241BW	Z11V	10.45	11	11.55	20	22	600	2	8.4
MMSZ5242BW	Z12V	11.40	12	12.60	20	30	600	1	9.1
MMSZ5243BW	Z13V	12.35	13	13.65	9.5	13	600	0.5	9.9

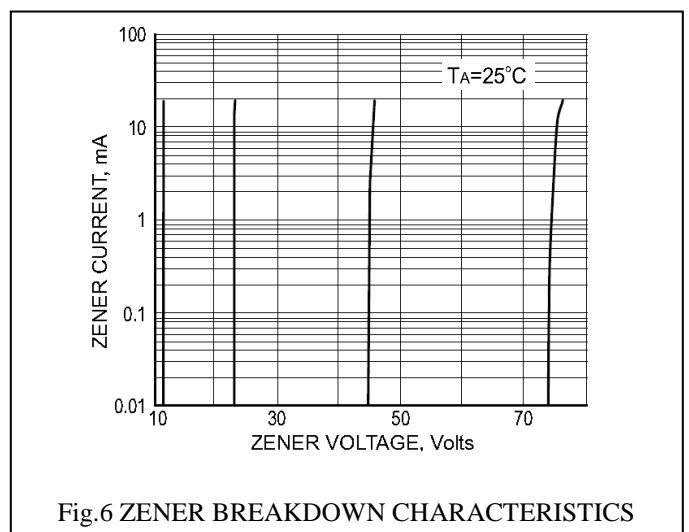
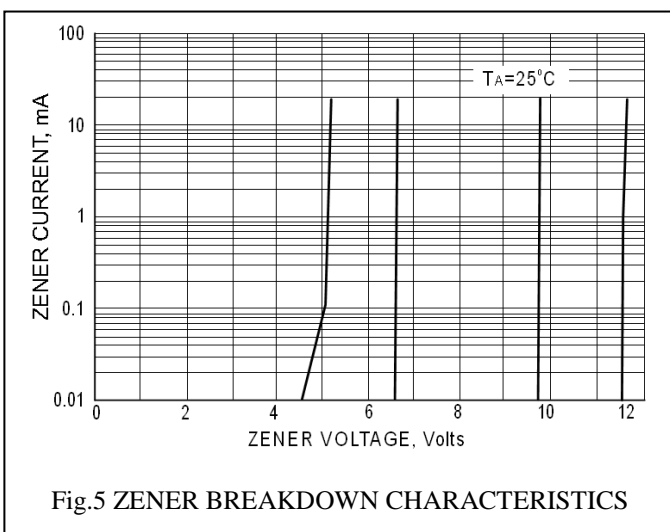
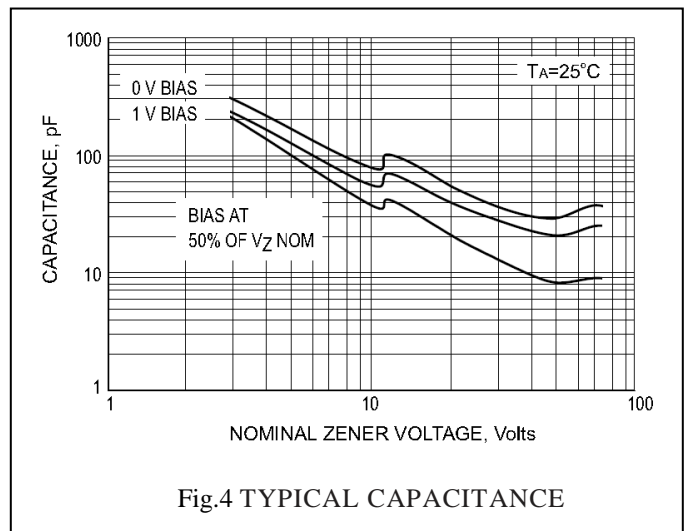
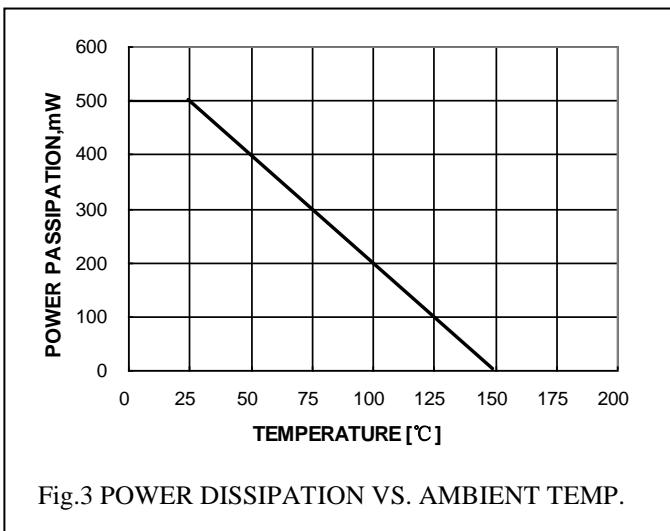
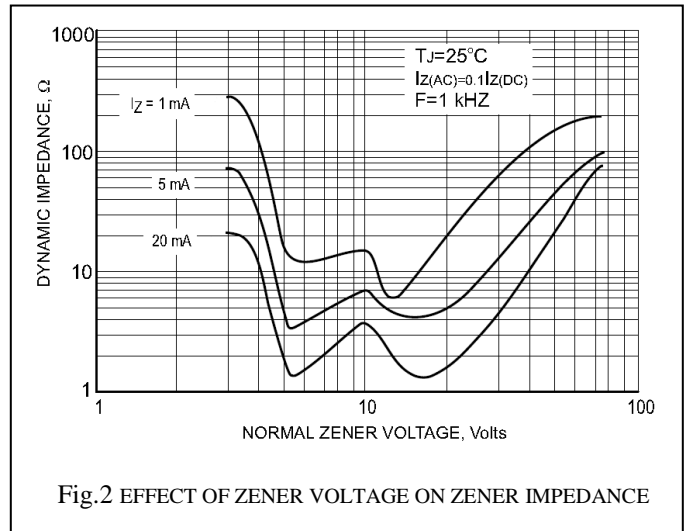
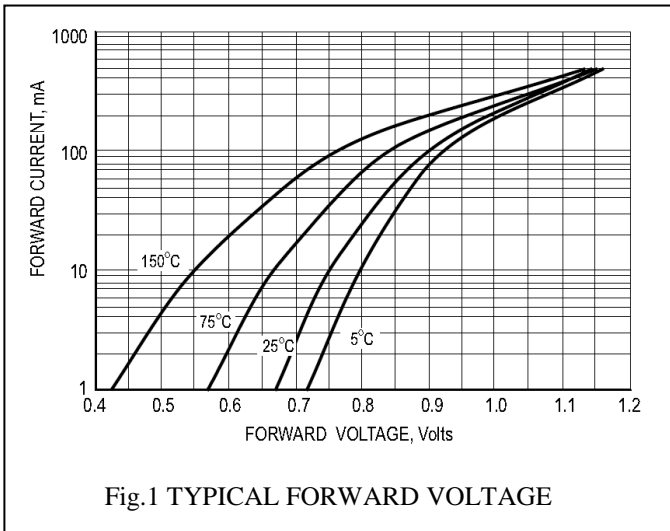
**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

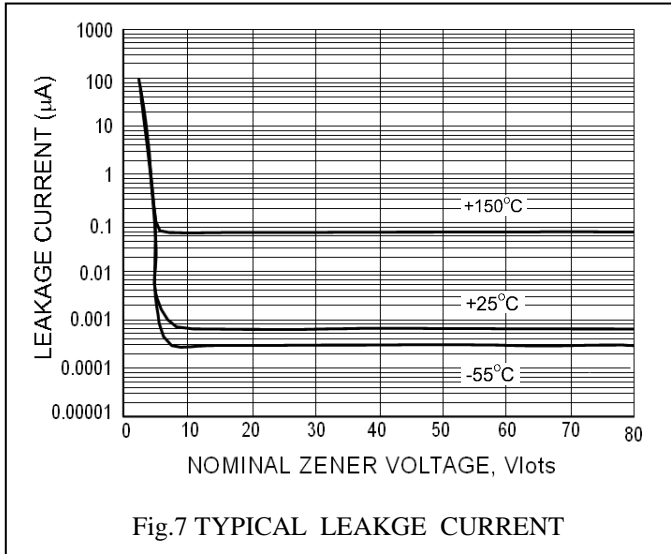
Device Type	Device Marking	$V_Z @ I_{ZT}$ (Volts)			$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$Z_{ZK} @ I_{ZK} = 0.25\text{mA}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
		Min	Nom	Max					
MMSZ5244BW	Z14V	13.30	14	14.70	9	15	600	0.1	10
MMSZ5245BW	Z15V	14.25	15	15.75	8.5	16	600	0.1	11
MMSZ5246BW	Z16V	15.20	16	16.80	7.8	17	600	0.1	12
MMSZ5247BW	Z17V	16.15	17	17.85	7.4	19	600	0.1	13
MMSZ5248BW	Z18V	17.10	18	18.90	7	21	600	0.1	14
MMSZ5249BW	Z19V	18.05	19	19.95	6.6	23	600	0.1	14
MMSZ5250BW	Z20V	19.00	20	21.00	6.2	25	600	0.1	15
MMSZ5251BW	Z22V	20.90	22	23.10	5.6	29	600	0.1	17
MMSZ5252BW	Z24V	22.80	24	25.20	5.2	33	600	0.1	18
MMSZ5253BW	Z25V	23.75	25	26.25	5	35	600	0.1	19
MMSZ5254BW	Z27V	25.65	27	28.35	4.6	41	600	0.1	21
MMSZ5255BW	Z28V	26.60	28	29.40	4.5	44	600	0.1	21
MMSZ5256BW	Z30V	28.50	30	31.50	4.2	49	600	0.1	23
MMSZ5257BW	Z33V	31.35	33	34.65	3.8	58	700	0.1	25
MMSZ5258BW	Z36V	34.20	36	37.80	3.4	70	700	0.1	27
MMSZ5259BW	Z39V	37.05	39	40.95	3.2	80	800	0.1	30
MMSZ5260BW	Z43V	40.85	43	45.15	3	93	900	0.1	33
MMSZ5261BW	Z47V	44.65	47	49.35	2.7	105	1000	0.1	36
MMSZ5262BW	Z51V	48.45	51	53.55	2.5	125	1100	0.1	39
MMSZ5263BW	Z56V	53.20	56	58.80	2.2	150	1300	0.1	43
MMSZ5264BW	Z60V	57.00	60	63.00	2.1	170	1400	0.1	46
MMSZ5265BW	Z62V	58.90	62	65.10	2.0	185	1400	0.1	47
MMSZ5266BW	Z68V	64.60	68	71.40	1.8	230	1600	0.1	52
MMSZ5267BW	Z75V	71.25	75	78.75	1.7	270	1700	0.1	56

$V_F$  Forward Voltage = 900mV Maximum @  $I_F = 10\text{ mA}$  for all types

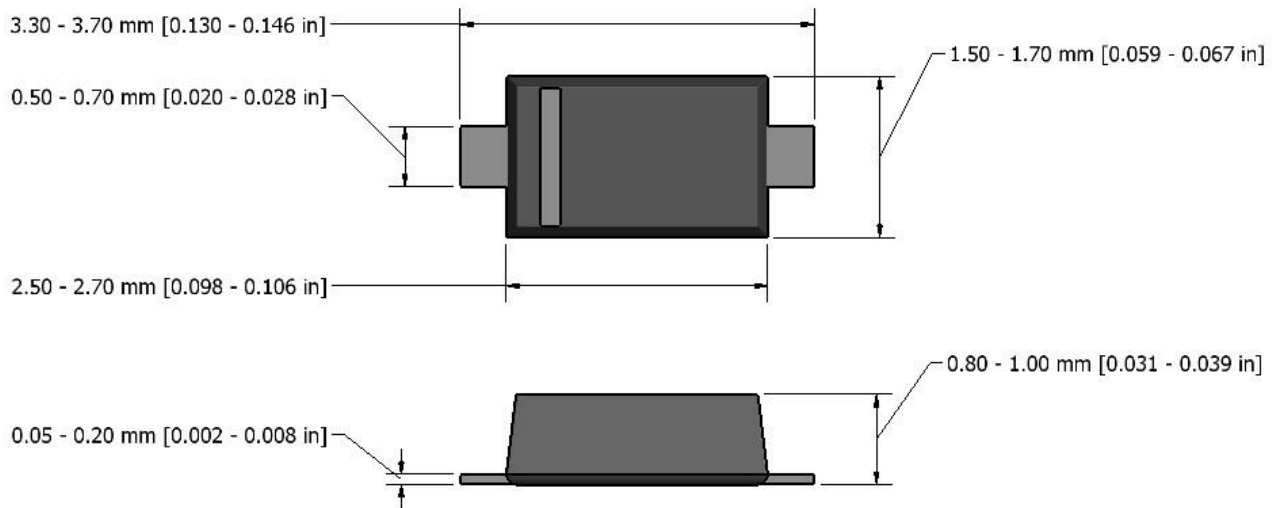
**Notes:**

1. The zener voltage ( $V_Z$ ) is tested under pulse condition of 1mS.
2. The device numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .
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  $I_{ZK}$ .
4. 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.

**RATING AND CHARACTERISTIC CURVES**




### Flat Lead SOD-123 Package Outline



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

## **NOTICE**

The information presented in this document is for reference only. Tak Cheong reserves the right to make changes without notice for the specification of the products displayed herein.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Tak Cheong Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.takcheong.com>, or consult your nearest Tak Cheong's sales office for further assistance.

### **“AEC-Q101 QUALIFIED” Statement:**

Tak Cheong has the capabilities to conduct tests for product packages by grouping in selective bases. Tak Cheong reserves the rights for making necessary arrangement for the subject test due to the amount of time and resources involved.