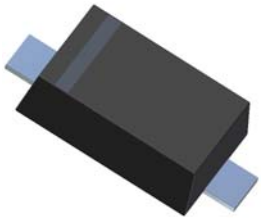
TAK CHEONG®

SEMICONDUCTOR

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

Green Product



SOD-123 Flat Lead

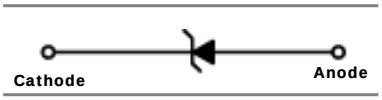
Absolute Maximum Ratings T_A = 25°C unless otherwise noted

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



ELECTRICAL SYMBOL

Electrical Characteristics T_A = 25°C unless otherwise noted

Device Type	Device Marking	V_Z @ I_{ZT} (Volts)			I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	I_{ZK} (mA)	Z_{ZK} @ I_{ZK} (Ω) Max	I_R @ V_R (μA) Max	V_R (Volts)
		Min	Nom	Max						
MMSZ2V0CW	2V0Z	1.90	2.0	2.10	5	100	1	564	120	0.5
MMSZ2V2CW	2V2Z	2.09	2.2	2.31	5	100	1	564	120	0.7
MMSZ2V4CW	2V4Z	2.28	2.4	2.52	5	100	1	564	45	1
MMSZ2V7CW	2V7Z	2.57	2.7	2.84	5	100	1	564	18	1
MMSZ3V0CW	3V0Z	2.85	3.0	3.15	5	100	1	564	9	1
MMSZ3V3CW	3V3Z	3.14	3.3	3.47	5	95	1	564	4.5	1
MMSZ3V6CW	3V6Z	3.42	3.6	3.78	5	90	1	564	4.5	1
MMSZ3V9CW	3V9Z	3.71	3.9	4.10	5	90	1	564	2.7	1
MMSZ4V3CW	4V3Z	4.09	4.3	4.52	5	90	1	564	2.7	1
MMSZ4V7CW	4V7Z	4.47	4.7	4.94	5	80	1	470	2.7	2
MMSZ5V1CW	5V1Z	4.85	5.1	5.36	5	60	1	451	1.8	2
MMSZ5V6CW	5V6Z	5.32	5.6	5.88	5	40	1	376	0.9	2
MMSZ6V2CW	6V2Z	5.89	6.2	6.51	5	10	1	141	2.7	4
MMSZ6V8CW	6V8Z	6.46	6.8	7.14	5	15	1	75	1.8	4
MMSZ7V5CW	7V5Z	7.11	7.5	7.86	5	15	1	75	0.9	5
MMSZ8V2CW	8V2Z	7.79	8.2	8.61	5	15	1	75	0.63	5
MMSZ9V1CW	9V1Z	8.65	9.1	9.56	5	15	1	94	0.45	6
MMSZ10VCW	10VZ	9.50	10	10.50	5	20	1	141	0.18	7
MMSZ11VCW	11VZ	10.45	11	11.55	5	20	1	141	0.09	8
MMSZ12VCW	12VZ	11.40	12	12.60	5	25	1	141	0.09	8
MMSZ13VCW	13VZ	12.35	13	13.65	5	30	1	160	0.09	8

Electrical Characteristics

T_A = 25°C unless otherwise noted

Device Type	Device Marking	V_Z @ I_{ZT} (Volts)			I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	I_{ZK} (mA)	Z_{ZK} @ I_{ZK} (Ω) Max	I_R @ V_R (μA) Max	V_R (Volts)
		Min	Nom	Max						
MMSZ15VCW	15VZ	14.25	15	15.75	5	30	1	188	0.045	10.5
MMSZ16VCW	16VZ	15.20	16	16.80	5	40	1	188	0.045	11.2
MMSZ18VCW	18VZ	17.10	18	18.90	5	45	1	212	0.045	12.6
MMSZ20VCW	20VZ	19.00	20	21.00	5	55	1	212	0.045	14.0
MMSZ22VCW	22VZ	20.90	22	23.10	5	55	1	235	0.045	15.4
MMSZ24VCW	24VZ	22.80	24	25.20	5	70	1	235	0.045	16.8
MMSZ27VCW	27VZ	25.65	27	28.35	2	80	0.5	282	0.045	18.9
MMSZ30VCW	30VZ	28.50	30	31.50	2	80	0.5	282	0.045	21.0
MMSZ33VCW	33VZ	31.35	33	34.65	2	80	0.5	306	0.045	23.0
MMSZ36VCW	36VZ	34.20	36	37.80	2	90	0.5	329	0.045	25.2
MMSZ39VCW	39VZ	37.05	39	40.95	2	130	0.5	329	0.045	27.3
MMSZ43VCW	43VZ	40.85	43	45.15	2	150	0.5	353	0.045	30.1
MMSZ47VCW	47VZ	44.65	47	49.35	2	170	0.5	353	0.045	33.0
MMSZ51VCW	51VZ	48.45	51	53.55	2	180	0.5	376	0.045	35.7
MMSZ56VCW	56VZ	53.20	56	58.80	2	200	0.5	400	0.045	39.2
MMSZ62VCW	62VZ	58.90	62	65.10	2	215	0.5	423	0.045	43.4
MMSZ68VCW	68VZ	64.60	68	71.40	2	240	0.5	447	0.045	47.6
MMSZ75VCW	75VZ	71.25	75	78.75	2	255	0.5	470	0.045	52.5

V_F Forward Voltage = 900mV Maximum @ I_F = 10 mA for all types

Notes:

1. The Zener Voltage (V_Z) is tested under pulse condition of 10mS.
2. The device numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
3. 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.
4. 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

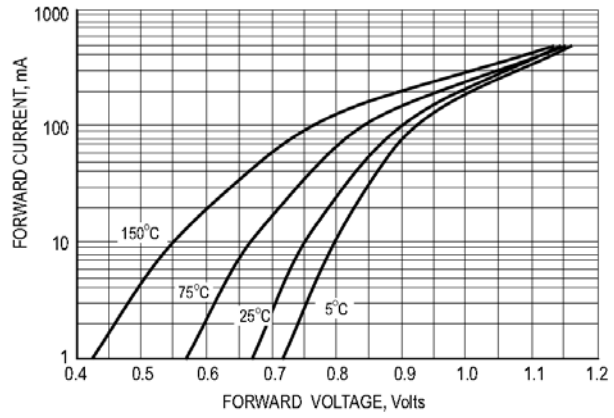


Fig.1 TYPICAL FORWARD VOLTAGE

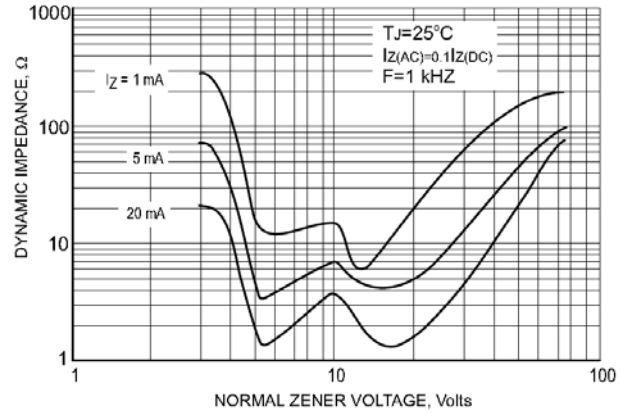


Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

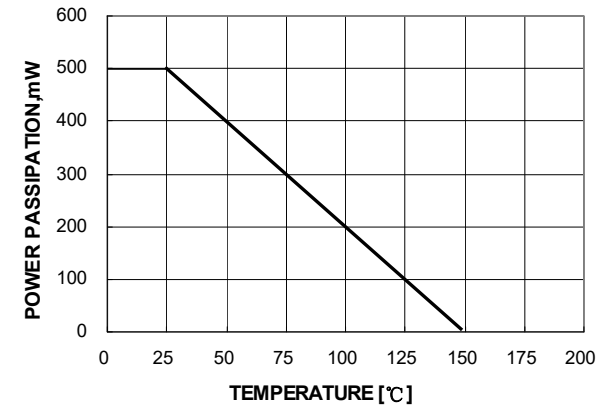


Fig.3 POWER DISSIPATION VS. AMBIENT TEMP.

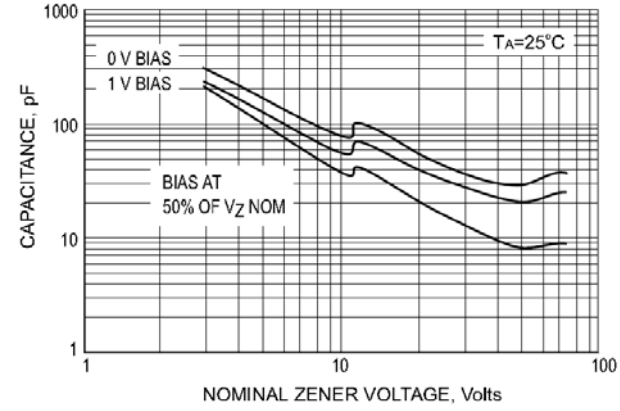


Fig.4 TYPICAL CAPACITANCE

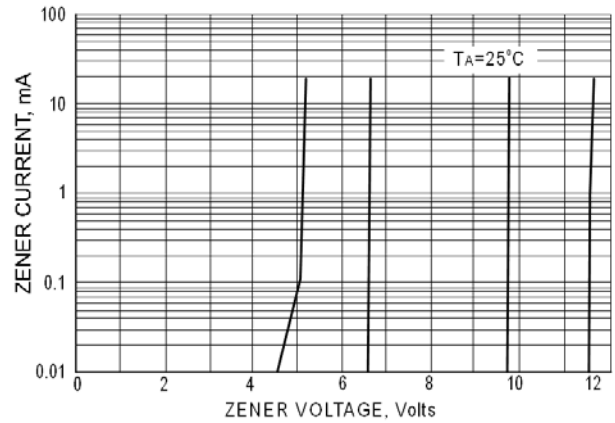


Fig.5 ZENER BREAKDOWN CHARACTERISTICS

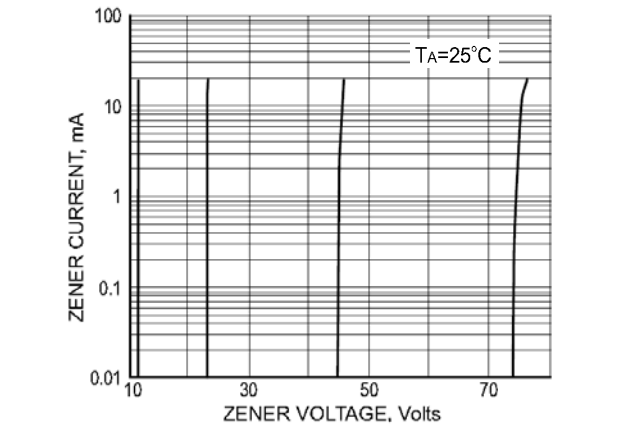


Fig.6 ZENER BREAKDOWN CHARACTERISTICS

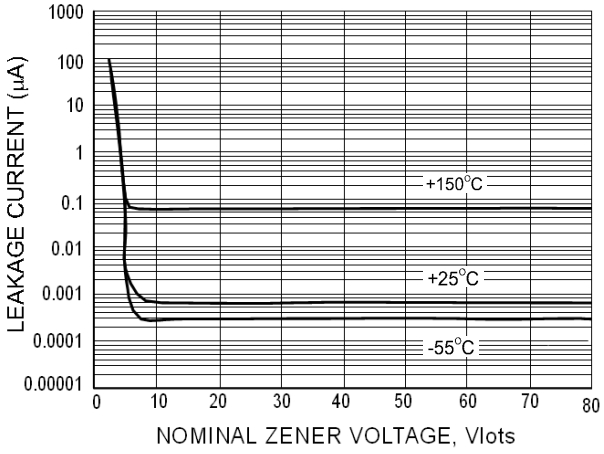
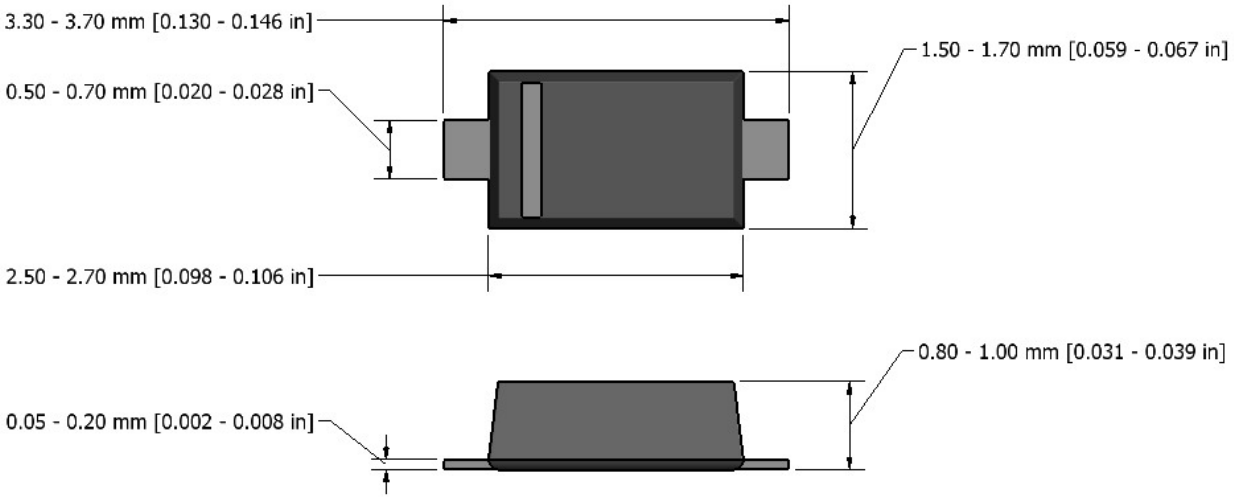


Fig.7 TYPICAL LEAKGE CURRENT

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 with 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 damagers resulting from such improper use of sale.

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"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.