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

Green Product

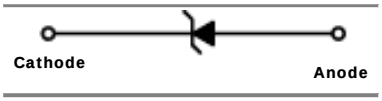
Absolute Maximum Ratings T_A = 25°C unless otherwise noted

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.



SOD-123 Gull Wing Lead



ELECTRICAL SYMBOL

Specification Features:

- Wide Zener Voltage Range Selection, 2.0V to 75V
- VZ Tolerance Selection of ±5% (C Series)
- Gull Wing Lead SOD-123 Plastic Package
- Surface Device Type Mounting
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Lead Finish
- Band Indicates Cathode
- Weight: approx. 0.01g

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						
MMSZ2V0CWG	2V0Z	1.90	2.0	2.10	5	100	1	564	120	0.5
MMSZ2V2CWG	2V2Z	2.09	2.2	2.31	5	100	1	564	120	0.7
MMSZ2V4CWG	2V4Z	2.28	2.4	2.52	5	100	1	564	45	1
MMSZ2V7CWG	2V7Z	2.57	2.7	2.84	5	100	1	564	18	1
MMSZ3V0CWG	3V0Z	2.85	3.0	3.15	5	100	1	564	9	1
MMSZ3V3CWG	3V3Z	3.14	3.3	3.47	5	95	1	564	4.5	1
MMSZ3V6CWG	3V6Z	3.42	3.6	3.78	5	90	1	564	4.5	1
MMSZ3V9CWG	3V9Z	3.71	3.9	4.10	5	90	1	564	2.7	1
MMSZ4V3CWG	4V3Z	4.09	4.3	4.52	5	90	1	564	2.7	1
MMSZ4V7CWG	4V7Z	4.47	4.7	4.94	5	80	1	470	2.7	2
MMSZ5V1CWG	5V1Z	4.85	5.1	5.36	5	60	1	451	1.8	2
MMSZ5V6CWG	5V6Z	5.32	5.6	5.88	5	40	1	376	0.9	2
MMSZ6V2CWG	6V2Z	5.89	6.2	6.51	5	10	1	141	2.7	4
MMSZ6V8CWG	6V8Z	6.46	6.8	7.14	5	15	1	75	1.8	4
MMSZ7V5CWG	7V5Z	7.11	7.5	7.86	5	15	1	75	0.9	5
MMSZ8V2CWG	8V2Z	7.79	8.2	8.61	5	15	1	75	0.63	5
MMSZ9V1CWG	9V1Z	8.65	9.1	9.56	5	15	1	94	0.45	6
MMSZ10VCWG	10VZ	9.50	10	10.50	5	20	1	141	0.18	7
MMSZ11VCWG	11VZ	10.45	11	11.55	5	20	1	141	0.09	8
MMSZ12VCWG	12VZ	11.40	12	12.60	5	25	1	141	0.09	8
MMSZ13VCWG	13VZ	12.35	13	13.65	5	30	1	160	0.09	8

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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						
MMSZ15VCWG	15VZ	14.25	15	15.75	5	30	1	188	0.045	10.5
MMSZ16VCWG	16VZ	15.20	16	16.80	5	40	1	188	0.045	11.2
MMSZ18VCWG	18VZ	17.10	18	18.90	5	45	1	212	0.045	12.6
MMSZ20VCWG	20VZ	19.00	20	21.00	5	55	1	212	0.045	14.0
MMSZ22VCWG	22VZ	20.90	22	23.10	5	55	1	235	0.045	15.4
MMSZ24VCWG	24VZ	22.80	24	25.20	5	70	1	235	0.045	16.8
MMSZ27VCWG	27VZ	25.65	27	28.35	2	80	0.5	282	0.045	18.9
MMSZ30VCWG	30VZ	28.50	30	31.50	2	80	0.5	282	0.045	21.0
MMSZ33VCWG	33VZ	31.35	33	34.65	2	80	0.5	306	0.045	23.0
MMSZ36VCWG	36VZ	34.20	36	37.80	2	90	0.5	329	0.045	25.2
MMSZ39VCWG	39VZ	37.05	39	40.95	2	130	0.5	329	0.045	27.3
MMSZ43VCWG	43VZ	40.85	43	45.15	2	150	0.5	353	0.045	30.1
MMSZ47VCWG	47VZ	44.65	47	49.35	2	170	0.5	353	0.045	33.0
MMSZ51VCWG	51VZ	48.45	51	53.55	2	180	0.5	376	0.045	35.7
MMSZ56VCWG	56VZ	53.20	56	58.80	2	200	0.5	400	0.045	39.2
MMSZ62VCWG	62VZ	58.90	62	65.10	2	215	0.5	423	0.045	43.4
MMSZ68VCWG	68VZ	64.60	68	71.40	2	240	0.5	447	0.045	47.6
MMSZ75VCWG	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}.

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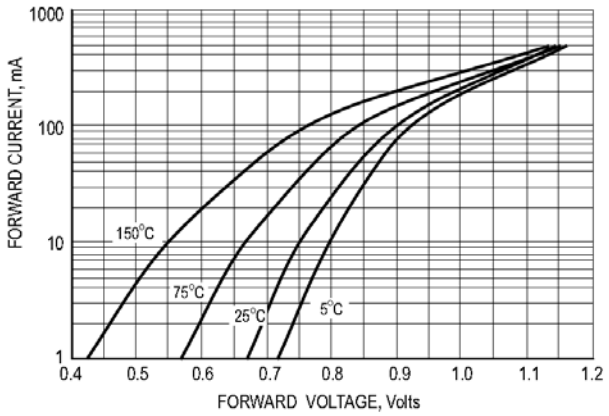

Fig.1 TYPICAL FORWARD VOLTAGE

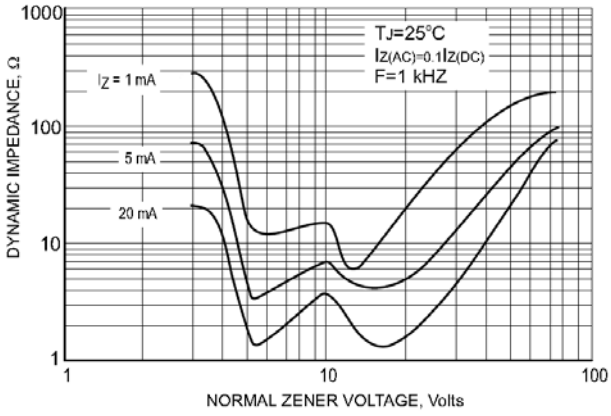

Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

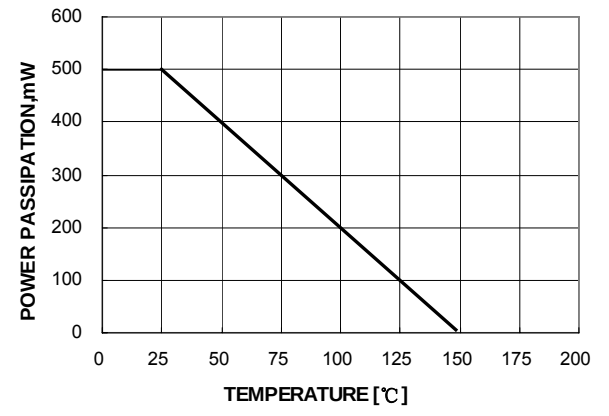

Fig.3 POWER DISSIPATION VS. AMBIENT TEMP.

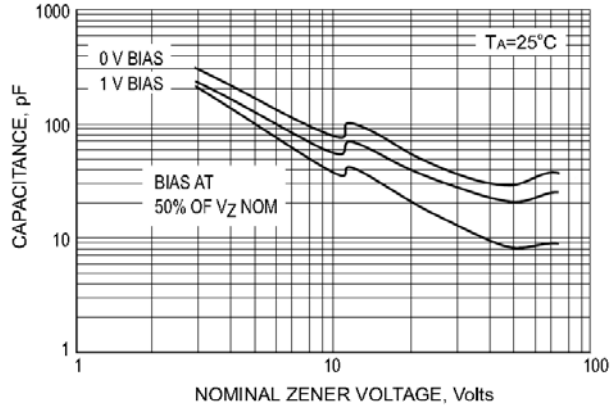

Fig.4 TYPICAL CAPACITANCE

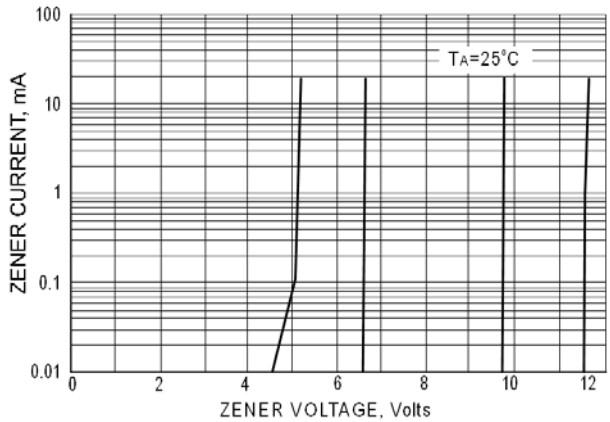

Fig.5 ZENER BREAKDOWN CHARACTERISTICS

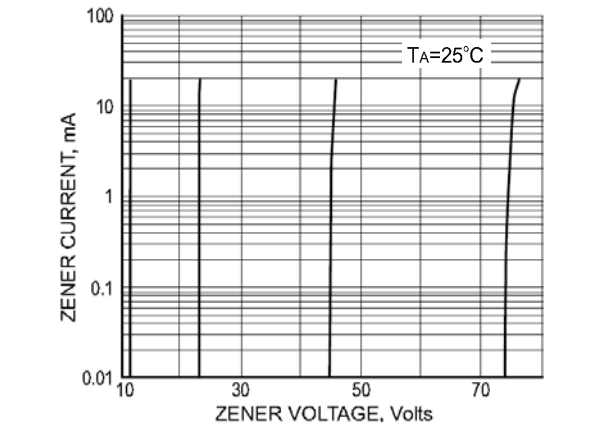

Fig.6 ZENER BREAKDOWN CHARACTERISTICS

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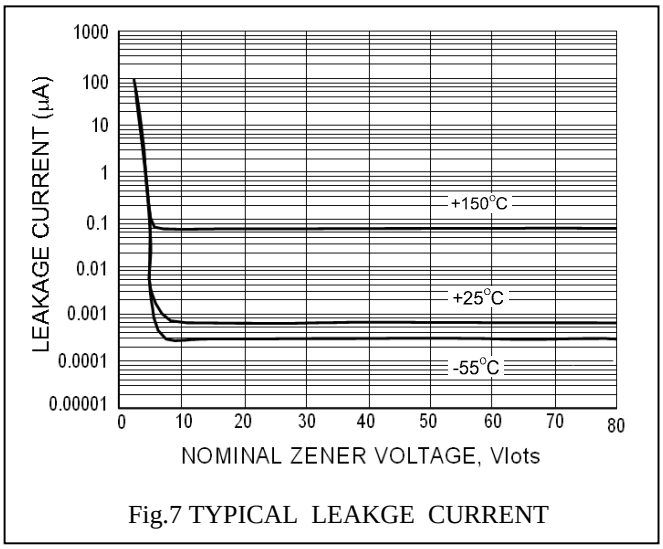
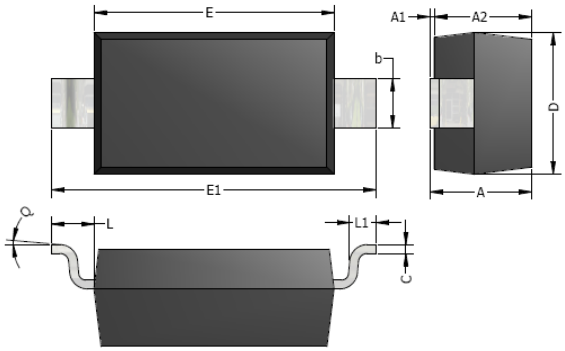
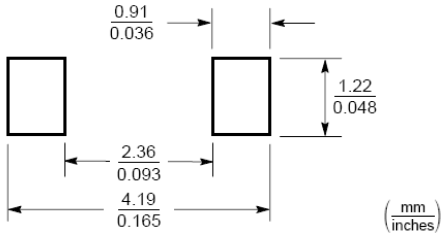


Fig.7 TYPICAL LEAKGE CURRENT

SOD123 Gull Wing Lead Package Outline



Typical Soldering Pattern:



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.05	1.25	0.041	0.049
A1	0.00	0.10	0.000	0.004
A2	1.05	1.15	0.041	0.045
b	0.50	0.70	0.020	0.028
c	0.08	0.15	0.003	0.006
D	1.50	1.70	0.059	0.067
E	2.60	2.80	0.102	0.110
E1	3.55	3.85	0.140	0.152
L	0.50 REF.		0.020 REF.	
L1	0.25	0.45	0.010	0.018
θ	0^0	8^0	0^0	8^0

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

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