

## SOD-123 Plastic-Encapsulate Zener Diode

### Features

- Low Zener Impedance
- Power Dissipation of 500mW
- High Stability and High Reliability

### Mechanical Data

- SOD-123 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Epoxy UL: 94V-0
- Mounting Position: Any

SOD-123



### Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

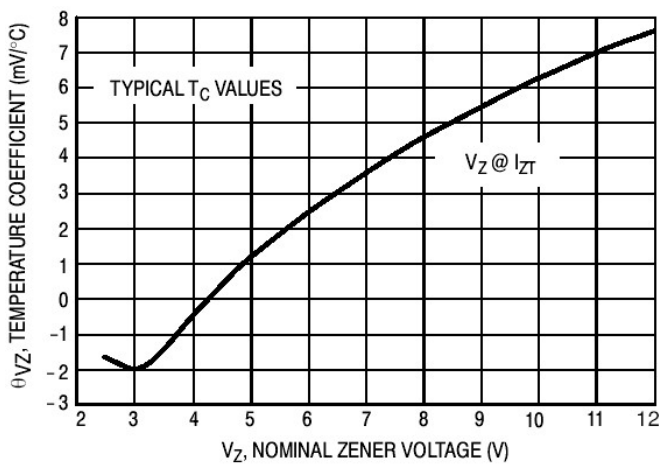
Parameters	Symbol	Value	Unit
Power Dissipation	Pd	500 <sup>1)</sup>	mW
Forward Voltage @IF=10mA	Vf	0.9 <sup>2)</sup>	V
Storage temperature range	Ts	-65-+150	°C

- 1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>  
 2) Short duration test pulse used to minimize self-heating effect  
 3) f=1KHz

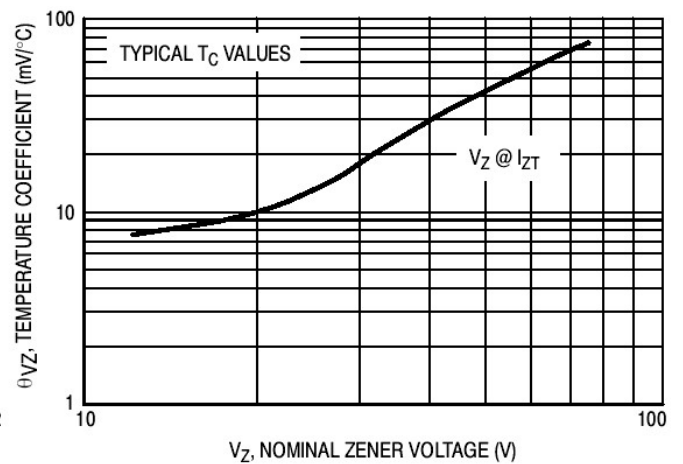
### Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Device	Marking	Zener Voltage Range				Maximum Reverse Current	
		Vz@Izt			Izt	IR	VR
		Nom (V)	Min(V)	Max(V)	uA	uA	V
MMSZ4678	CC	1.8	1.71	1.89	50	7.5	1
MMSZ4679	CD	2.0	1.90	2.10	50	5	1
MMSZ4680	CE	2.2	2.09	2.31	50	4	1
MMSZ4681	CF	2.4	2.28	2.52	50	2	1
MMSZ4682	CH	2.7	2.57	2.84	50	1	1
MMSZ4683	CJ	3.0	2.85	3.15	50	0.8	1
MMSZ4684	CK	3.3	3.13	3.47	50	7.5	1.5
MMSZ4685	CM	3.6	3.42	3.78	50	7.5	2
MMSZ4686	CN	3.9	3.70	4.10	50	5	2
MMSZ4687	CP	4.3	4.09	4.52	50	4	2
MMSZ4688	CT	4.7	4.47	4.94	50	10	3
MMSZ4689	CU	5.1	4.85	5.36	50	10	3
MMSZ4690	CV	5.6	5.32	5.88	50	10	4
MMSZ4691	CA	6.2	5.89	6.51	50	10	5
MMSZ4692	CX	6.8	6.46	7.14	50	10	5.1
MMSZ4693	CY	7.5	7.13	7.88	50	10	5.7
MMSZ4694	CZ	8.2	7.79	8.61	50	1	6.2
MMSZ4695	DC	8.7	8.27	9.14	50	1	6.6

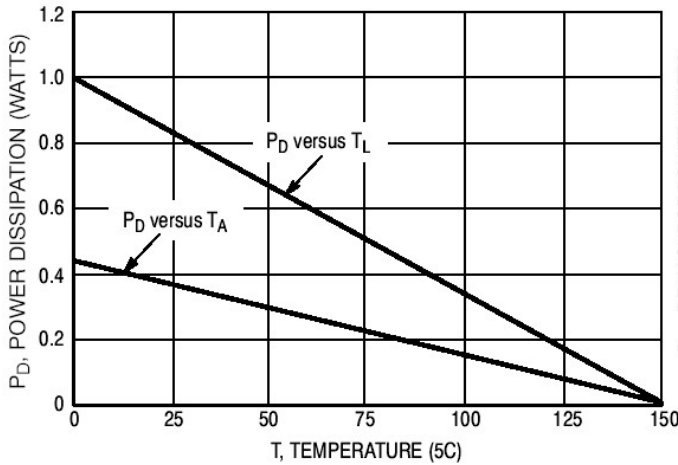
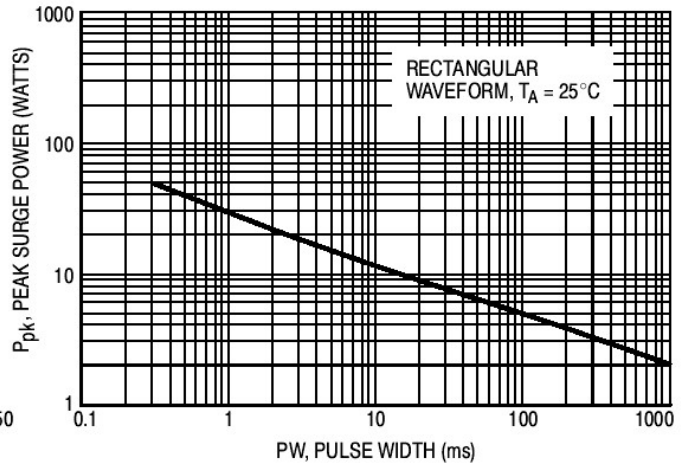
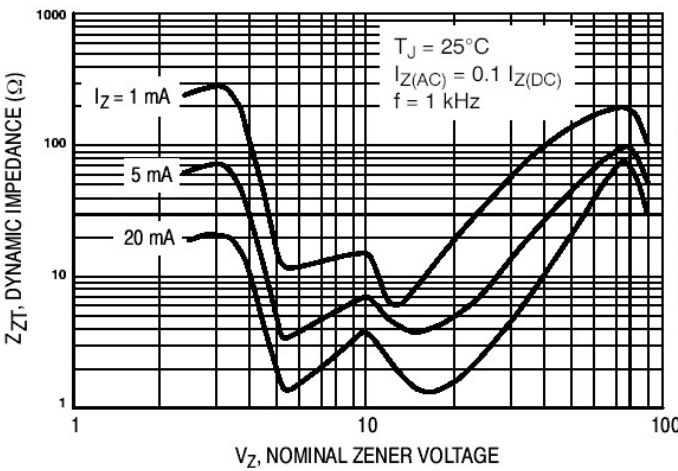
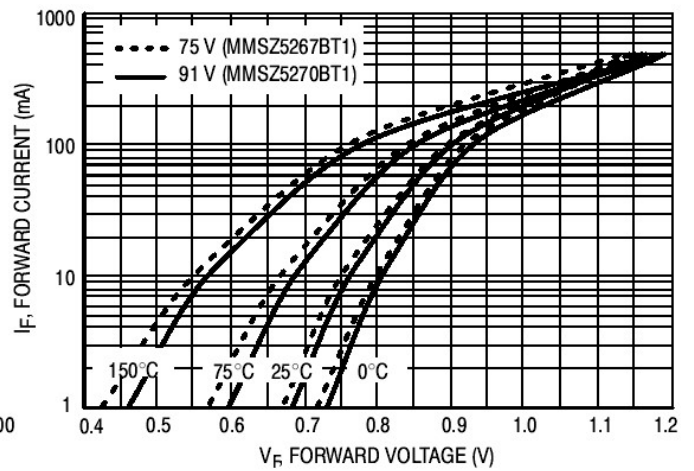
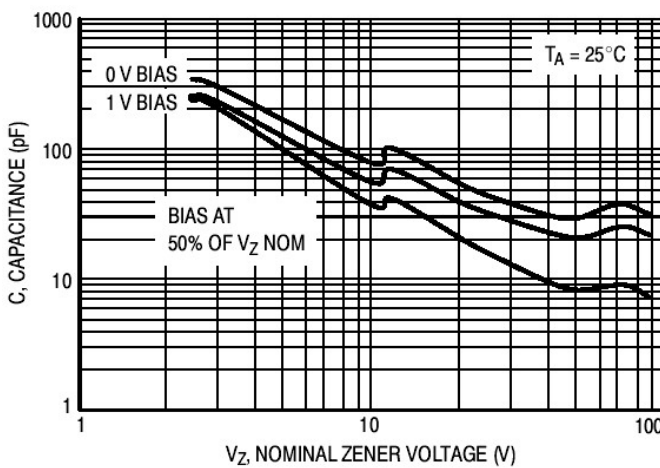
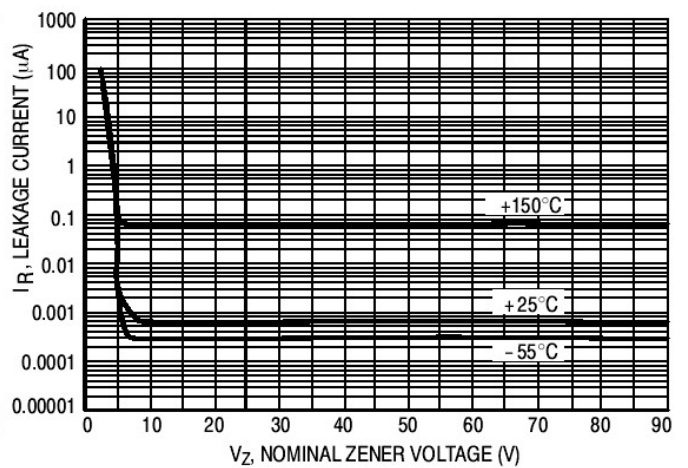
Device	Marking	Zener Voltage Range				Maximum Reverse Current	
		V <sub>Z</sub> @I <sub>ZT</sub>			I <sub>ZT</sub> uA	I <sub>R</sub> uA	V <sub>R</sub> V
		Nom(V)	Min(V)	Max(V)			
MMSZ4696	DD	9.1	8.65	9.56	50	1	6.9
MMSZ4697	DE	10.0	9.50	10.50	50	1	7.6
MMSZ4698	DF	11.0	10.45	11.55	50	0.05	8.4
MMSZ4699	DH	12.0	11.40	12.60	50	0.05	9.1
MMSZ4700	DJ	13.0	12.35	13.65	50	0.05	9.8
MMSZ4701	DK	14.0	13.30	14.70	50	0.05	10.6
MMSZ4702	DM	15.0	14.25	15.75	50	0.05	11.4
MMSZ4703	DN	16.0	15.20	16.80	50	0.05	12.1
MMSZ4704	DP	17.0	16.15	17.85	50	0.05	12.9
MMSZ4705	DT	18.0	17.10	18.90	50	0.05	13.6
MMSZ4706	DU	19.0	18.05	19.95	50	0.05	14.4
MMSZ4707	DV	20.0	19.00	21.00	50	0.01	15.2
MMSZ4708	DA	22.0	20.90	23.10	50	0.01	16.7
MMSZ4709	DX	24.0	22.80	25.20	50	0.01	18.2
MMSZ4710	DY	25.0	23.75	26.25	50	0.01	19
MMSZ4711	EA	27.0	25.65	28.35	50	0.01	20.4
MMSZ4712	EC	28.0	26.60	29.40	50	0.01	21.2
MMSZ4713	ED	30.0	28.50	31.50	50	0.01	22.8
MMSZ4714	EE	33.0	31.35	34.65	50	0.01	25
MMSZ4715	EF	36.0	34.20	37.80	50	0.01	27.3
MMSZ4716	EH	39.0	37.05	40.95	50	0.01	29.6
MMSZ4717	EJ	43.0	40.85	45.15	50	0.01	32.6

**TYPICAL CHARACTERISTICS**


**Figure 1. Temperature Coefficients**  
(Temperature Range -55°C to +150°C)



**Figure 2. Temperature Coefficients**  
(Temperature Range -55°C to +150°C)


**Figure 3. Steady State Power Derating**

**Figure 4. Maximum Nonrepetitive Surge Power**

**Figure 5. Effect of Zener Voltage on Zener Impedance**

**Figure 6. Typical Forward Voltage**

**Figure 7. Typical Capacitance**

**Figure 8. Typical Leakage Current**

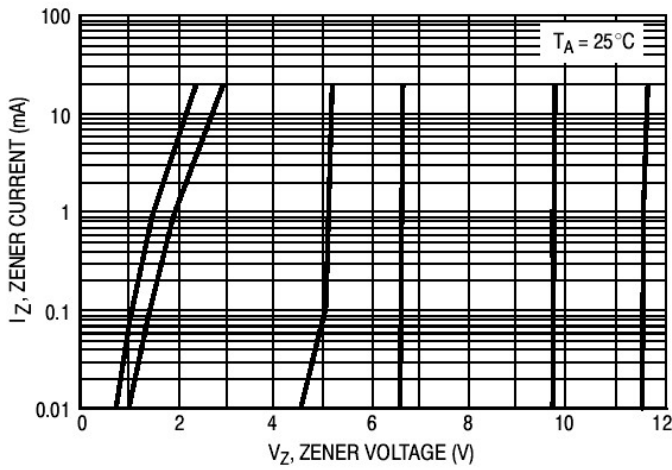


Figure 9. Zener Voltage versus Zener Current  
( $V_Z$  Up to 12 V)

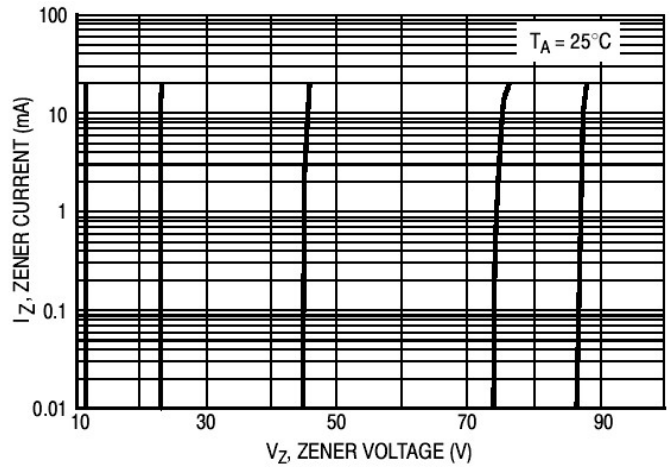
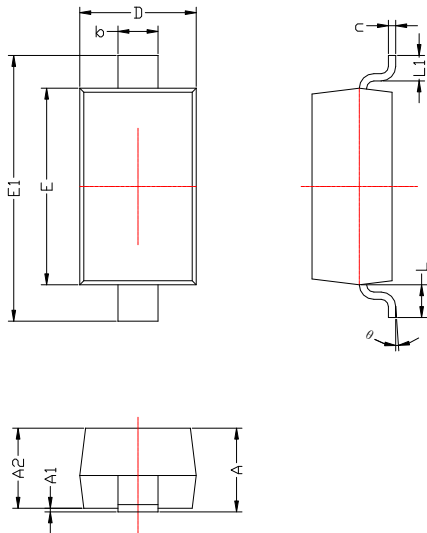


Figure 10. Zener Voltage versus Zener Current  
(12 V to 91 V)

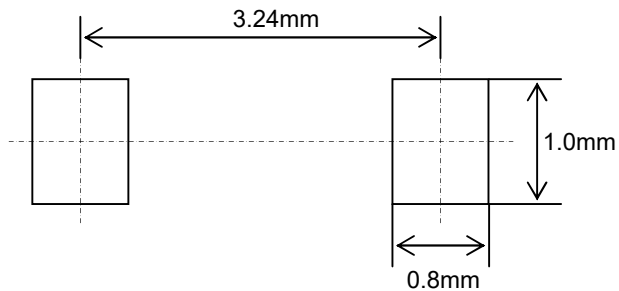
### SOD-123 PACKAGE OUTLINE Plastic surface mounted package



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.450	0.650
c	0.080	0.150
D	1.500	1.700
E	2.600	2.800
E1	3.550	3.850
L	0.500REF	
L1	0.250	0.450
$\theta$	0°	8°

#### Precautions: PCB Design

Recommended land dimensions for SOD-123 diode. Electrode patterns for PCBs



Unspecified dimension tolerance:  $\pm 0.5$  mm

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