

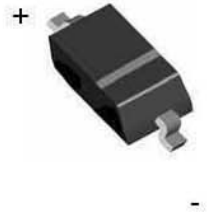


SOD-123C Plastic-Encapsulate Diode

Features

- Pb-Free Packages are Available
- For Additional Pb-Free Options, Please Consult Factory
- 500 mW Rating on FR-4 or FR-5 Board
- Wide Zener Reverse Voltage Range – 1.8 V to 43 V
- Package Designed for Optimal Automated Board Assembly
- Small Package Size for High Density Applications
- ESD Rating of Class 3 (>16 kV) per Human Body Model

SOD-123C



Mechanical Characteristics

CASE: Void-free, transfer-molded, thermosetting plastic case

FINISH: Corrosion resistant finish, easily solderable

MAXIMUM CASE TEMPERATURE FOR SOLDERING PURPOSES: 260°C for 10 Seconds

POLARITY: Cathode indicated by polarity band

MAXIMUM RATINGS

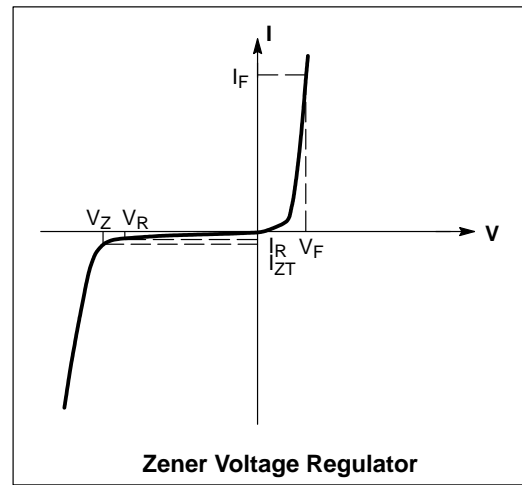
Rating	Symbol	Max	Unit
Total Power Dissipation on FR-5 Board, (Note 1) @ $T_L = 75^\circ\text{C}$ Derated above 75°C	P_D	500 6.7	mW mW/°C
Thermal Resistance, (Note 2) Junction-to-Ambient	$R_{\theta JA}$	340	°C/W
Thermal Resistance, (Note 2) Junction-to-Lead	$R_{\theta JL}$	150	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

- 1.FR-5 = 3.5 X 1.5 inches, using the minimum recommended footprint.
- 2.Thermal Resistance measurement obtained via infrared Scan Method.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 0.95\text{ V Max. @ } I_F = 10\text{ mA}$)

Symbol	Parameter
V_Z	Reverse Zener Voltage @ I_{ZT}
I_{ZT}	Reverse Current
I_R	Reverse Leakage Current @ V_R
V_R	Reverse Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 0.9\text{ V Max.}$ @ $I_F = 10\text{ mA}$)

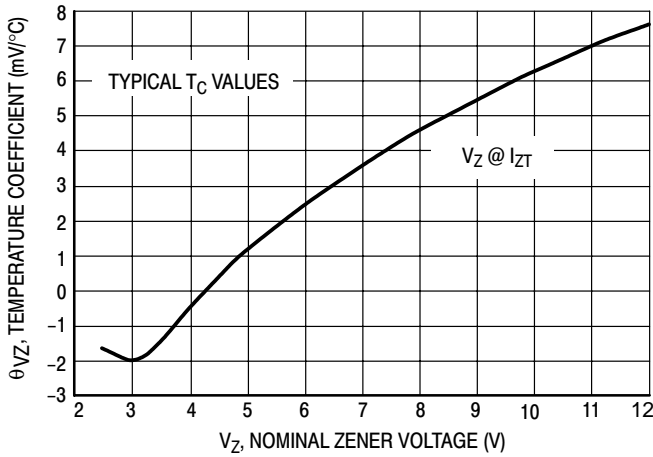
Device	Device Marking	Zener Voltage (Note 3)				Leakage Current	
		V_Z (Volts)			@ I_{ZT}	I_R @ V_R	
		Min	Nom	Max	μA	μA	Volts
MMSZ4678T1, G	CC	1.71	1.8	1.89	50	7.5	1
MMSZ4679T1, G	CD	1.90	2.0	2.10	50	5	1
MMSZ4680T1, G	CE	2.09	2.2	2.31	50	4	1
MMSZ4681T1, G	CF	2.28	2.4	2.52	50	2	1
MMSZ4682T1, G	CH	2.565	2.7	2.835	50	1	1
MMSZ4683T1	CJ	2.85	3.0	3.15	50	0.8	1
MMSZ4684T1, G	CK	3.13	3.3	3.47	50	7.5	1.5
MMSZ4685T1, G	CM	3.42	3.6	3.78	50	7.5	2
MMSZ4686T1	CN	3.70	3.9	4.10	50	5	2
MMSZ4687T1, G	CP	4.09	4.3	4.52	50	4	2
MMSZ4688T1	CT	4.47	4.7	4.94	50	10	3
MMSZ4689T1, G	CU	4.85	5.1	5.36	50	10	3
MMSZ4690T1, G	CV	5.32	5.6	5.88	50	10	4
MMSZ4691T1	CA	5.89	6.2	6.51	50	10	5
MMSZ4692T1, G	CX	6.46	6.8	7.14	50	10	5.1
MMSZ4693T1	CY	7.13	7.5	7.88	50	10	5.7
MMSZ4694T1	CZ	7.79	8.2	8.61	50	1	6.2
MMSZ4695T1, G	DC	8.27	8.7	9.14	50	1	6.6
MMSZ4696T1, G	DD	8.65	9.1	9.56	50	1	6.9
MMSZ4697T1, G	DE	9.50	10	10.50	50	1	7.6
MMSZ4698T1	DF	10.45	11	11.55	50	0.05	8.4
MMSZ4699T1, G	DH	11.40	12	12.60	50	0.05	9.1
MMSZ4700T1	DJ	12.35	13	13.65	50	0.05	9.8
MMSZ4701T1	DK	13.30	14	14.70	50	0.05	10.6
MMSZ4702T1, G	DM	14.25	15	15.75	50	0.05	11.4
MMSZ4703T1, G*	DN	15.20	16	16.80	50	0.05	12.1
MMSZ4704T1	DP	16.15	17	17.85	50	0.05	12.9
MMSZ4705T1	DT	17.10	18	18.90	50	0.05	13.6
MMSZ4706T1	DU	18.05	19	19.95	50	0.05	14.4
MMSZ4707T1	DV	19.00	20	21.00	50	0.01	15.2
MMSZ4708T1	DA	20.90	22	23.10	50	0.01	16.7
MMSZ4709T1, G	DX	22.80	24	25.20	50	0.01	18.2
MMSZ4710T1, G	DY	23.75	25	26.25	50	0.01	19.0
MMSZ4711T1*	EA	25.65	27	28.35	50	0.01	20.4
MMSZ4712T1	EC	26.60	28	29.40	50	0.01	21.2
MMSZ4713T1, G	ED	28.50	30	31.50	50	0.01	22.8
MMSZ4714T1	EE	31.35	33	34.65	50	0.01	25.0
MMSZ4715T1	EF	34.20	36	37.80	50	0.01	27.3
MMSZ4716T1	EH	37.05	39	40.95	50	0.01	29.6
MMSZ4717T1, G	EJ	40.85	43	45.15	50	0.01	32.6

3. Nominal Zener voltage is measured with the device junction in thermal equilibrium at $T_L = 30^\circ\text{C} \pm 1^\circ\text{C}$.

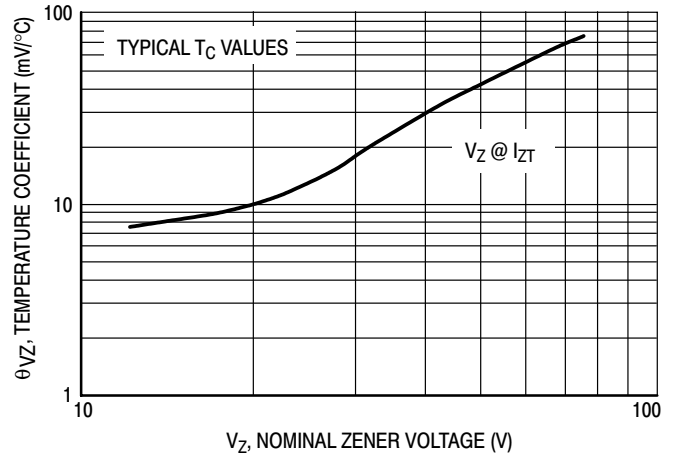
*Not Available in the 10,000/Tape & Reel.

**The "G" suffix indicates Pb-Free package available.

TYPICAL CHARACTERISTICS



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



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

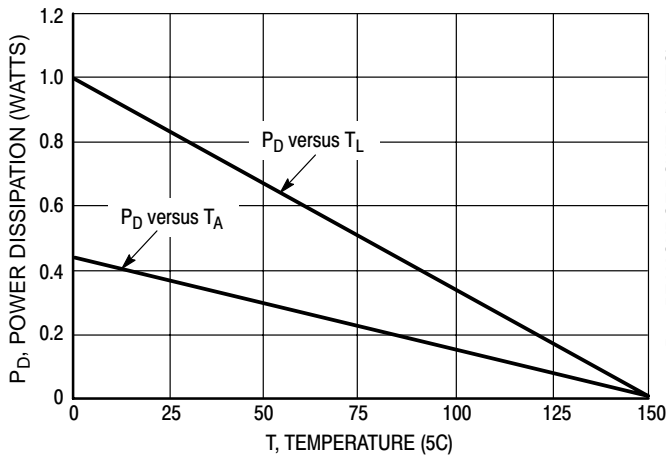


Figure 3. Steady State Power Derating

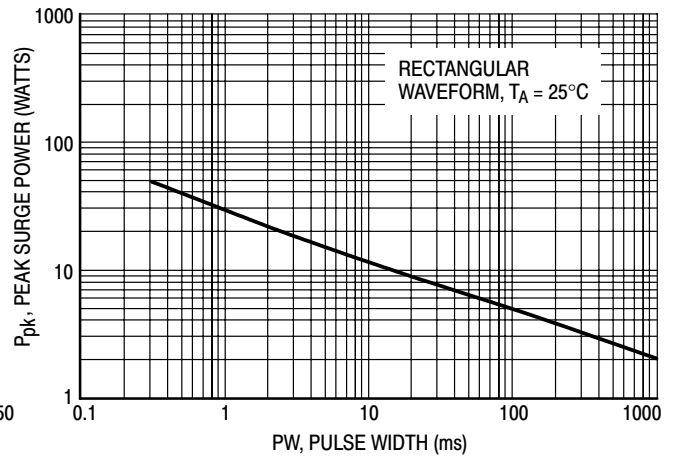
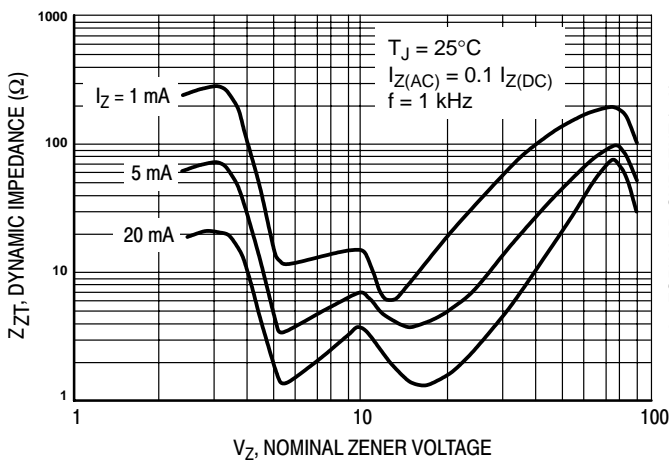


Figure 4. Maximum Nonrepetitive Surge Power



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

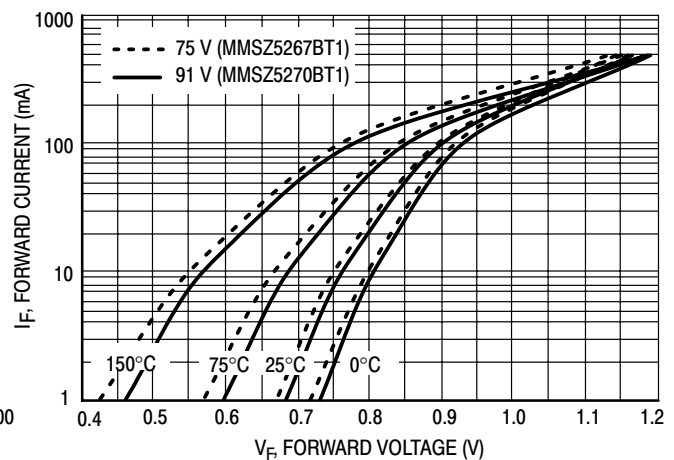


Figure 6. Typical Forward Voltage

TYPICAL CHARACTERISTICS

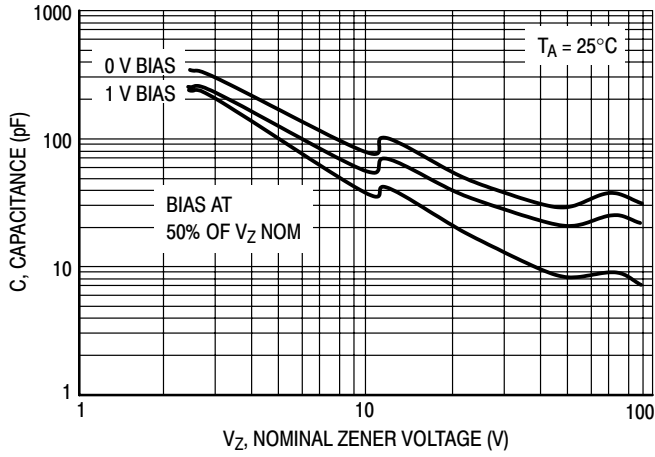


Figure 7. Typical Capacitance

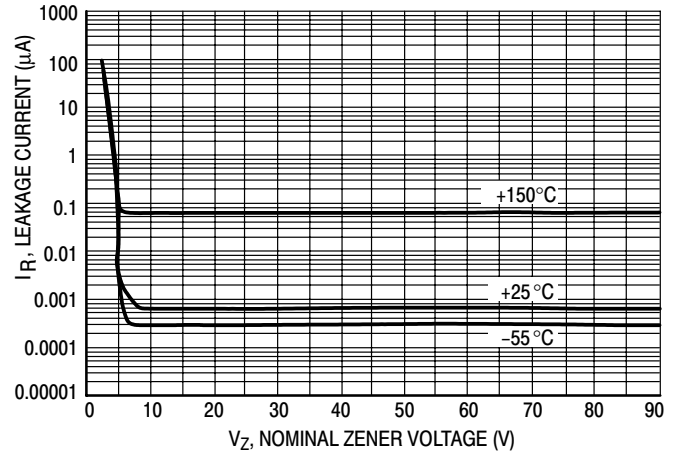


Figure 8. Typical Leakage Current

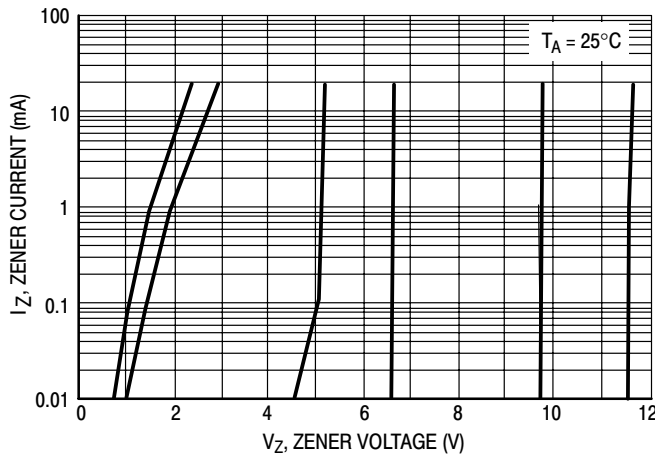


Figure 9. Zener Voltage versus Zener Current (V_Z Up to 12 V)

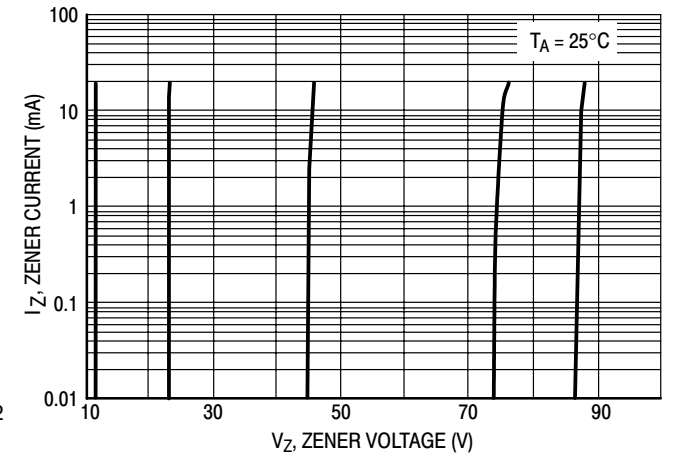


Figure 10. Zener Voltage versus Zener Current (12 V to 91 V)

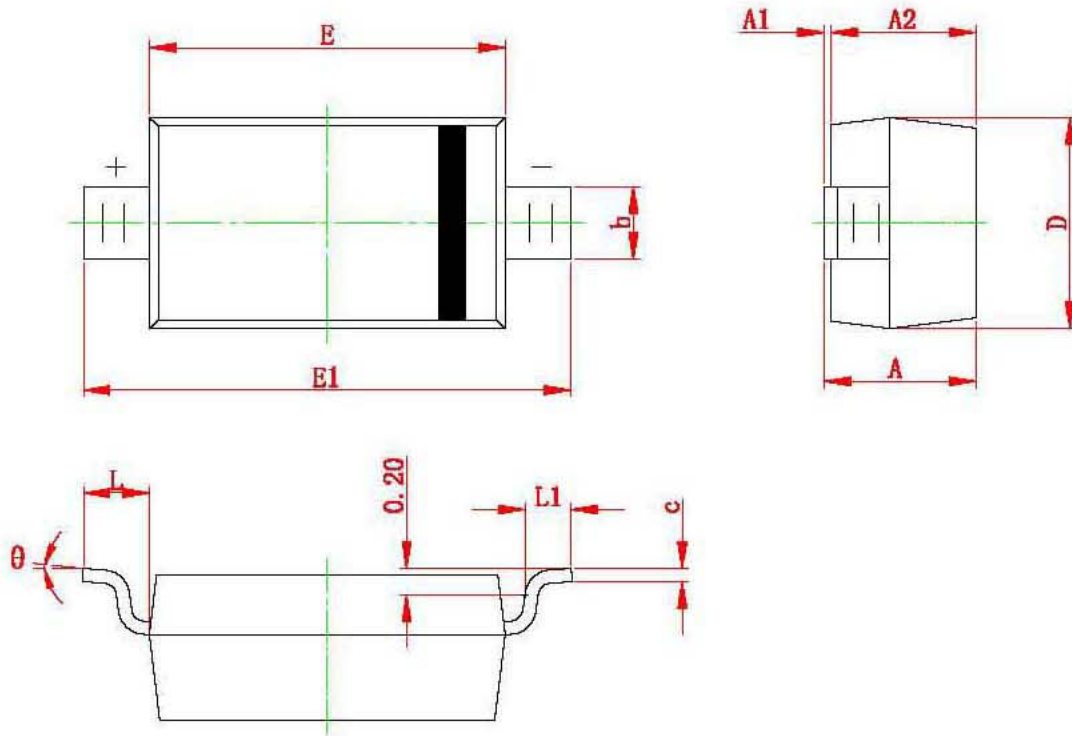


PACKAGING OF DIODE

REEL PACK

PACKAGE	PACKING CODE	REEL (EA)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER (CARTON)	GROSS (WEIGHT(Kg))
SOD-123C	-T	3,000	178	390*205*310	120,000	6

SOD-123C PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	1.500	1.700	0.059	0.067
E	2.600	2.800	0.102	0.110
E1	3.550	3.850	0.140	0.152
L	0.500 REF		0.020 REF	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°