200mW, 2V - 75V Zener Diode

FEATURES

- Constant voltage control
- Wide voltage range selection 2.0V to 75V
- V_Z tolerance selection of ±5%
- Surface mount device type
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
P_D	200	mW
V_Z	2 - 75	V
$T_{J\ MAX}$	150	°C
Package	SOD-323F	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

SOD-323F

APPLICATIONS

- Low voltage stabilizers or voltage references
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 3.40mg (approximately)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Power dissipation	P_D	200	mW
Junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PART NUMBER	MARKING CODE	ZENER VOLTAGE			REGULAR IMPEDANCE	TEST CURRENT	REGULAR IMPEDANCE	TEST CURRENT	LEAKAGE CURRENT	
		V_Z @ I_Z[1]			Z_{ZT} @ I_Z	I_Z	Z_{ZK}@ I_{ZK}	I_{ZK}	I_R @ V_R	
		V			Ω	mA	Ω	mA	μA	V
		Min	Typ	Max	Max		Max		Max	
M3Z2V0C	2v0	1.9	2.0	2.1	100	5	600	1	120	1
M3Z2V2C	2v2	2.09	2.2	2.31	100	5	600	1	120	1
M3Z2V4C	2v4	2.2	2.4	2.6	90	5	600	1	120	1
M3Z2V7C	2v7	2.5	2.7	2.90	90	5	600	1	100	1
M3Z3V0C	3v0	2.8	3.0	3.2	85	5	600	1	50	1
M3Z3V3C	3v3	3.1	3.3	3.5	85	5	600	1	20	1
M3Z3V6C	3v6	3.4	3.6	3.8	85	5	600	1	10	1
M3Z3V9C	3v9	3.7	3.9	4.1	85	5	600	1	5	1
M3Z4V3C	4v3	4.0	4.3	4.6	80	5	600	1	5	1
M3Z4V7C	4v7	4.4	4.7	5.0	70	5	500	1	2	1
M3Z5V1C	5v1	4.8	5.1	5.4	50	5	480	1	2	1.5
M3Z5V6C	5v6	5.32	5.6	5.88	30	5	400	1	1	2
M3Z6V2C	6v2	5.89	6.2	6.51	10	5	150	1	1	3
M3Z6V8C	6v8	6.46	6.8	7.14	10	5	80	1	0.5	4
M3Z7V5C	7v5	7.11	7.5	7.86	10	5	50	1	0.5	5
M3Z8V2C	8v2	7.79	8.2	8.61	10	5	50	1	0.5	6
M3Z9V1C	9v1	8.65	9.1	9.56	10	5	50	1	0.5	7
M3Z10VC	10	9.5	10	10.5	15	5	70	1	0.1	7.5
M3Z11VC	11	10.45	11	11.55	20	5	70	1	0.1	8
M3Z12VC	12	11.4	12	12.6	20	5	90	1	0.1	9
M3Z13VC	13	12.35	13	13.65	26	5	110	1	0.1	10
M3Z15VC	15	14.25	15	15.75	30	5	110	1	0.1	11
M3Z16VC	16	15.2	16	16.8	40	5	170	1	0.1	12
M3Z18VC	18	17.1	18	18.9	45	5	170	1	0.1	14
M3Z20VC	20	19	20	21	55	5	220	1	0.1	15
M3Z22VC	22	20.9	22	23.1	55	5	220	1	0.1	17
M3Z24VC	24	22.8	24	25.2	70	5	220	1	0.1	19
M3Z27VC	27	25.65	27	28.35	80	5	220	1	0.1	20
M3Z30VC	30	28.5	30	31.5	80	5	220	1	0.1	22
M3Z33VC	33	31.35	33	34.65	80	5	220	1	0.1	24
M3Z36VC	36	34.2	36	37.8	80	5	220	1	0.1	27
M3Z39VC	39	37.05	39	40.95	90	2.5	500	0.5	0.1	29
M3Z43VC	43	40.85	43	45.15	90	2.5	600	0.5	0.1	32
M3Z47VC	47	44.65	47	49.35	110	2.5	700	0.5	0.1	35
M3Z51VC	51	48.45	51	53.55	125	2.5	700	0.5	0.1	38
M3Z56VC	56	53.2	56	58.8	135	2.5	1000	0.5	0.1	42
M3Z62VC	62	58.9	62	65.1	150	2.5	1000	0.5	0.1	47
M3Z68VC	68	64.6	68	71.4	200	2.5	1000	0.5	0.1	51
M3Z75VC	75	71.25	75	78.75	250	2.5	1500	0.5	0.1	56

Notes:

1. Pulse test with PW = 10ms

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
M3ZxC RRG	SOD-323F	3K / 7" Reel

Notes:

1. "x" defines voltage from 2V(M3Z2V0C) to 75V(M3Z75VC)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Zener Breakdown Characteristics

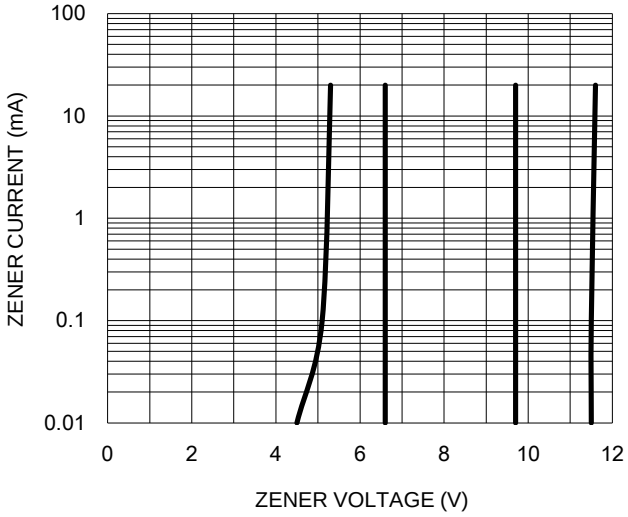


Fig.2 Zener Breakdown Characteristics

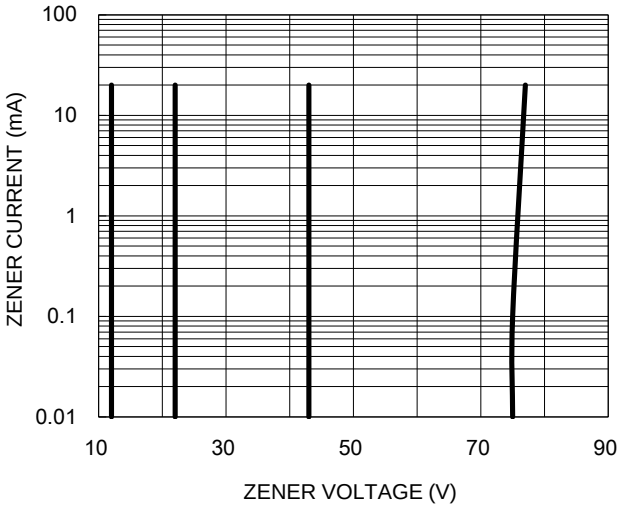


Fig.3 Typical Forward Voltage

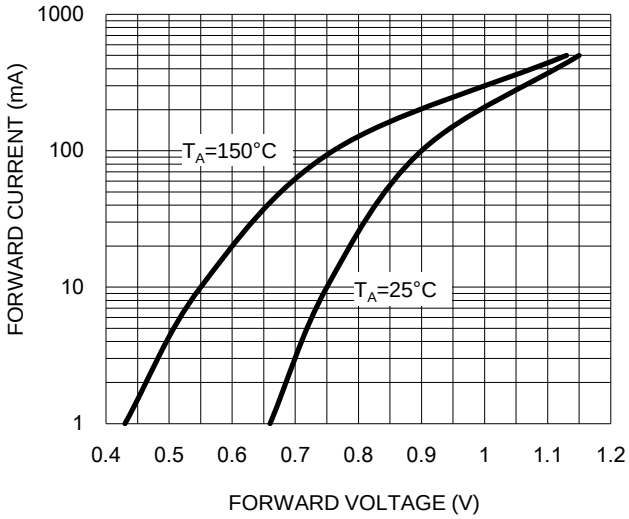
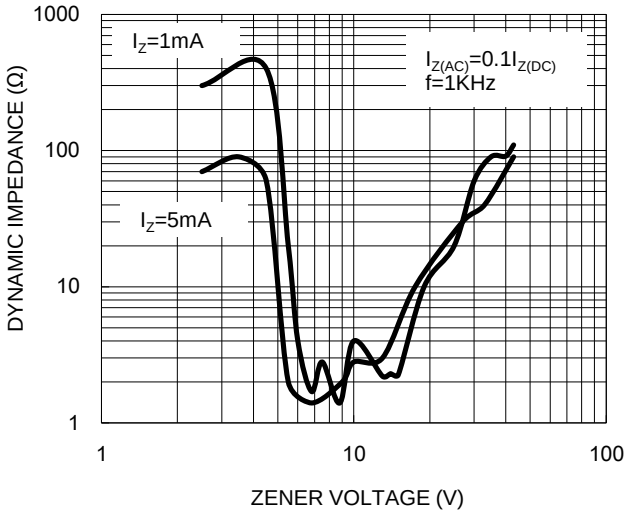


Fig.4 Vz vs. Z_{ZT}



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.5 Typical Capacitance

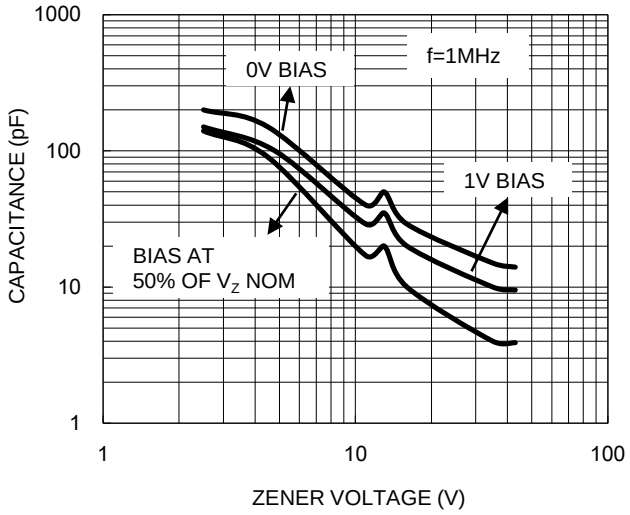


Fig.6 Typical Leakage Current

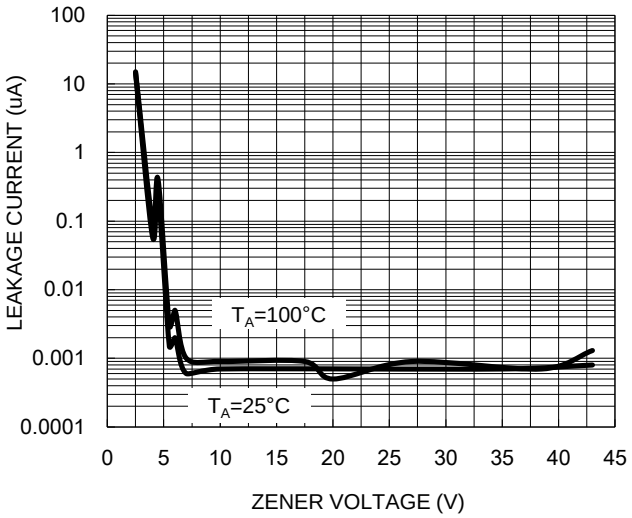
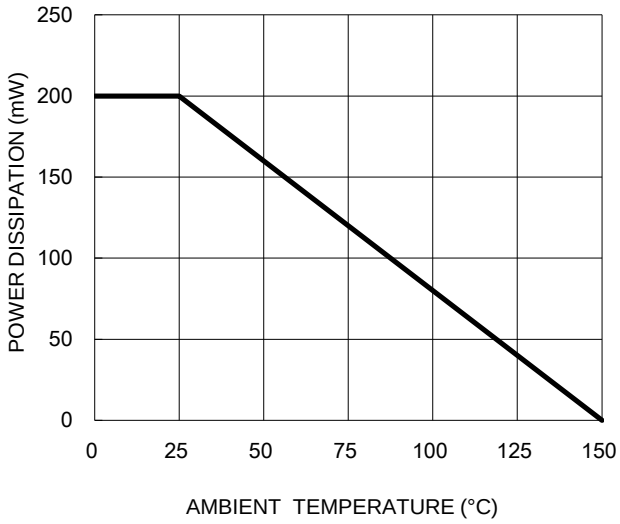
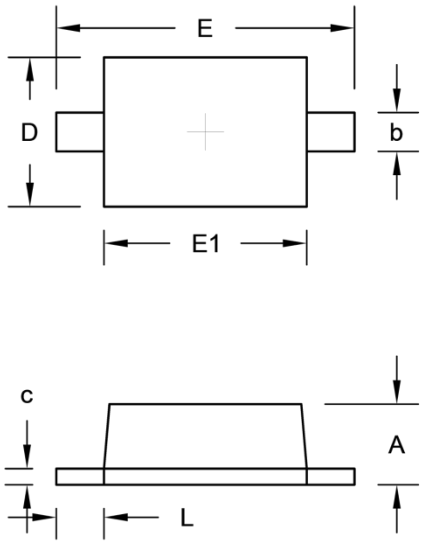


Fig.7 Power Dissipation



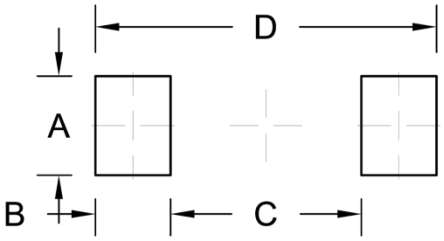
PACKAGE OUTLINE DIMENSION

SOD-323F



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.60	0.75	0.024	0.030
b	0.25	0.40	0.010	0.016
c	0.06	0.21	0.002	0.008
D	1.15	1.35	0.045	0.053
E	2.30	2.70	0.091	0.106
E1	1.60	1.80	0.063	0.071
L	0.30	0.50	0.012	0.020

SUGGEST PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	0.83	0.033
B	0.63	0.025
C	1.60	0.063
D	2.86	0.113

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