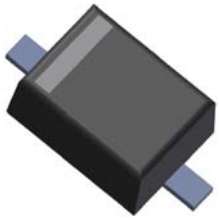
DATA SHEET

SEMICONDUCTOR

MM3ZxxVC Series

200mW SOD-323 SURFACE MOUNT
Small Outline Flat Lead Plastic Package
Zener Voltage Regulators



SOD-323 Flat Lead

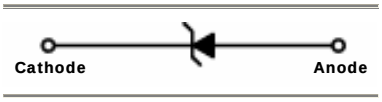
Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
P_D	Power Dissipation	200	mW
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_{OPR}	Operating Temperature Range	-55 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, 2.4V to 75V
- VZ Tolerance Selection of ±5% (C Series)
- Flat Lead SOD-323 Small Outline Plastic Package
- Surface Device Type Mounting
- Moisture Sensitivity Level 1
- Clip Bonding Construction, Good Thermal Capability
- Pb Free Version and RoHS Compliant
- Matte Tin(Sn) Lead Finish with Nickel(Ni) Underplate
- Band Indicates Cathode



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						
MM3Z2V4C	Z0	2.28	2.4	2.52	5	94	1	564	45	1
MM3Z2V7C	Z1	2.57	2.7	2.84	5	94	1	564	18	1
MM3Z3V0C	Z2	2.85	3.0	3.15	5	89	1	564	9	1
MM3Z3V3C	Z3	3.14	3.3	3.47	5	89	1	564	4.5	1
MM3Z3V6C	Z4	3.42	3.6	3.78	5	84	1	564	4.5	1
MM3Z3V9C	Z5	3.71	3.9	4.10	5	84	1	564	2.7	1
MM3Z4V3C	Z6	4.09	4.3	4.52	5	84	1	564	2.7	1
MM3Z4V7C	Z7	4.47	4.7	4.94	5	75	1	470	2.7	2
MM3Z5V1C	Z8	4.85	5.1	5.36	5	56	1	451	1.8	2
MM3Z5V6C	Z9	5.32	5.6	5.88	5	37	1	376	0.9	2
MM3Z6V2C	ZA	5.89	6.2	6.51	5	9	1	141	2.7	4
MM3Z6V8C	ZB	6.46	6.8	7.14	5	14	1	75	1.8	4
MM3Z7V5C	ZC	7.11	7.5	7.86	5	14	1	75	0.9	5
MM3Z8V2C	ZD	7.79	8.2	8.61	5	14	1	75	0.63	5
MM3Z9V1C	ZE	8.65	9.1	9.56	5	14	1	94	0.45	6
MM3Z10VC	ZF	9.50	10	10.50	5	18	1	141	0.18	7
MM3Z11VC	ZG	10.45	11	11.55	5	18	1	141	0.09	8
MM3Z12VC	ZH	11.40	12	12.60	5	23	1	141	0.09	8
MM3Z13VC	ZJ	12.35	13	13.65	5	28	1	160	0.09	8
MM3Z15VC	ZK	14.25	15	15.75	5	28	1	188	0.045	10.5
MM3Z16VC	ZL	15.20	16	16.80	5	37	1	188	0.045	11.2
MM3Z18VC	ZM	17.10	18	18.90	5	42	1	212	0.045	12.6
MM3Z20VC	ZN	19.00	20	21.00	5	51	1	212	0.045	14.0

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						
MM3Z22VC	ZP	20.90	22	23.10	5	51	1	235	0.045	15.4
MM3Z24VC	ZR	22.80	24	25.20	5	65	1	235	0.045	16.8
MM3Z27VC	ZS	25.65	27	28.35	5	75	0.5	282	0.045	18.9
MM3Z30VC	ZT	28.50	30	31.50	5	75	0.5	282	0.045	21.0
MM3Z33VC	ZU	31.35	33	34.65	5	75	0.5	306	0.045	23.0
MM3Z36VC	ZV	34.20	36	37.80	5	84	0.5	329	0.045	25.2
MM3Z39VC	ZW	37.05	39	40.95	5	122	0.5	329	0.045	27.3
MM3Z43VC	ZX	40.85	43	45.15	5	141	0.5	353	0.045	30.1
MM3Z47VC	ZY	44.65	47	49.35	5	160	0.5	353	0.045	33.0
MM3Z51VC	Z −	48.45	51	53.55	5	169	0.5	376	0.045	35.7
MM3Z56VC	Z=	53.20	56	58.80	5	188	0.5	400	0.045	39.2
MM3Z62VC	Z ≡	58.90	62	65.10	5	202	0.5	423	0.045	43.4
MM3Z68VC	Z>	64.60	68	71.40	5	226	0.5	447	0.045	47.6
MM3Z75VC	Z<	71.25	75	78.75	5	240	0.5	470	0.045	52.5

V_F Forward Voltage = 1 V 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 YEASHIN 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}.

DEVICE CHARACTERISTICS

MM3ZxxVC Series

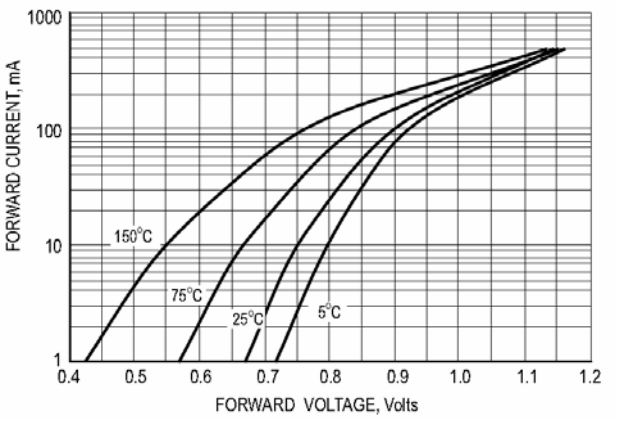


Fig.1 TYPICAL FORWARD VOLTAGE

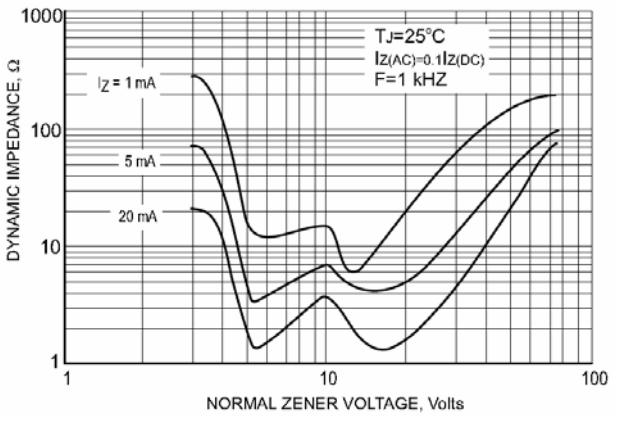


Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

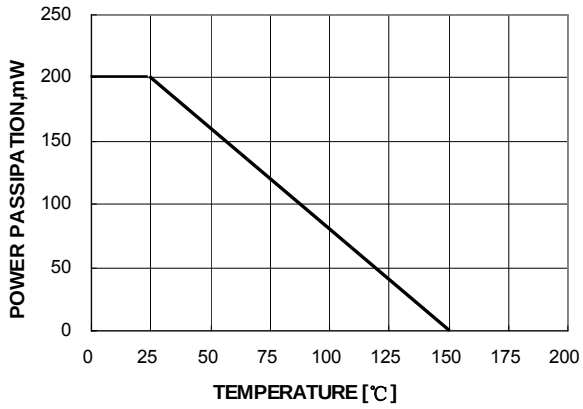


Fig.3 POWER DISSIPATION VS. AMBIENT TEMP.

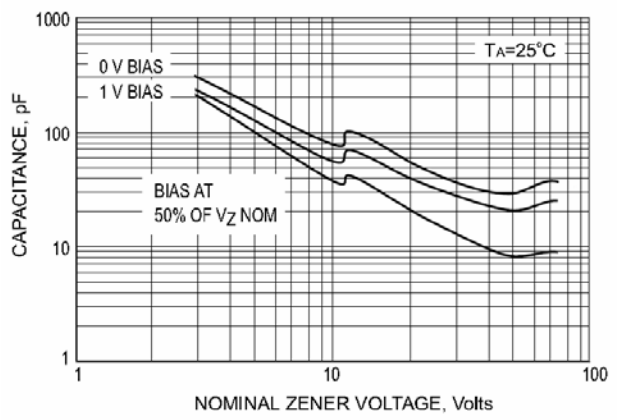


Fig.4 TYPICAL CAPACITANCE

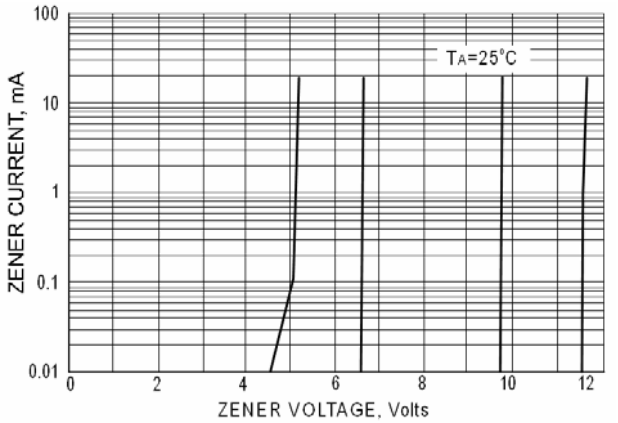


Fig.5 ZENER BREAKDOWN CHARACTERISTICS

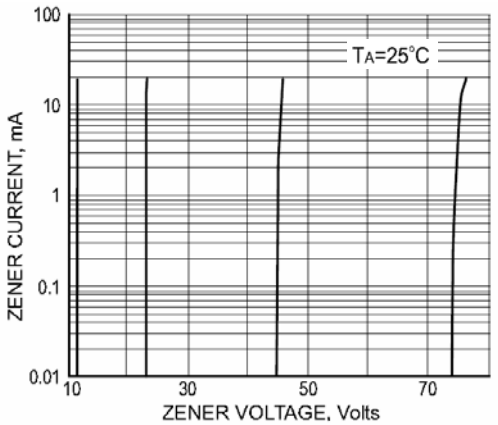


Fig.6 ZENER BREAKDOWN CHARACTERISTICS

PACKAGE OUTLINE & DIMENSIONS

MM3ZxxVC Series

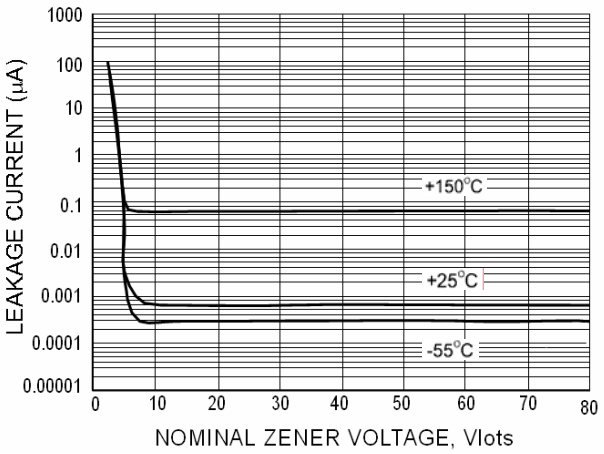
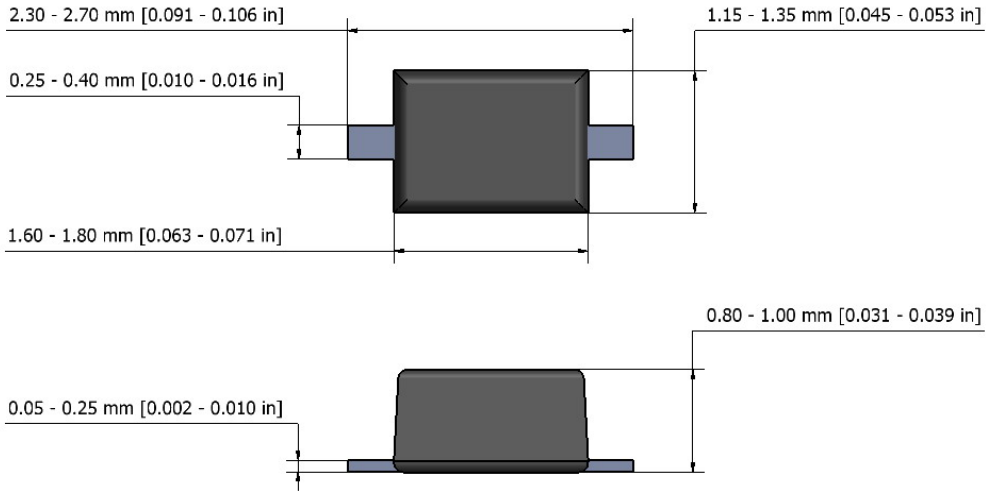


Fig.7 TYPICAL LEAKGE CURRENT

SOD-323 Package Outline



NOTES:
1. The above package outline is similar to JEITA SC-90.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.