MM3Z2V4T1 SERIES

Zener Voltage Regulator Diodes

200 mW SOD323 Surface Mount

This series of Zener diodes is packaged in a SOD323 surface mount package which has a power dissipation of 200 milliwatts. They are designed to provide voltage regulation protection and are especially attractive in situations where space is at a premium. They are well suited for applications such as cellular phones, hand held portables, and high density PC boards.

Special Features

- Voltage Range is 2.4 to 75 Volts
- Steady State Power Rating of 200 mW
- Small Body Outline Dimensions: 0.067″ X 0.049″ (1.7 mm X 1.25 mm)
- Low Body Height: 0.035″ (0.9 mm)

Mechanical Characteristics

- Void Free, Transfer–molded Plastic
- All External Surfaces are Corrosion Resistant
- Leads are Plated with Pb/Sn for Ease of Solderability
- Flammability Rating: UL94 V–0
- Package Weight (per unit): 4.507 mg/unit

Marking and Packing

- 8 mm Wide Tape
- Cathode Indicated with a Band
- Part is marked with three characters. The first two digits are found in the attached table. The third digit is a date code.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR–5 Board,* T_A = 25°C Derate above 25°C	P_D	200 1.57	mW mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	635	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	–55 to +150	°C

* FR–4 Minimum Pad

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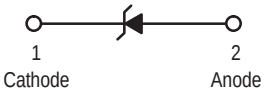

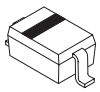

CASE 477–02, STYLE 1
SOD323

ORDERING INFORMATION

Device	Package	Shipping
MM3Zxxxxx	SOD323	3000 / Tape & Reel

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ELECTRICAL CHARACTERISTICS (V_F = 0.9 V Max @ I_F = 10 mA for all types.)

Device	Marking	Test Current I_{ZT} mA	Zener Voltage V_Z (±5%) Nominal (Note 1)	Z_{ZK} I_Z = 0.5 mA Ω Max	Z_{ZT} $I_Z = I_{ZT}$ @ 10% Mod Ω Max	Max I_R μA @ V_R V		d_{VZ}/dt (mV/k) @ I_{ZT1} = 5 mA Min	d_{VZ}/dt (mV/k) @ I_{ZT1} = 5 mA Max	C pF Max @ V_R = 0 f = 1 MHz
MM3Z2V4T1	00	5	2.4	1000	100	50	1	–3.5	0	450
MM3Z3V9T1	07	5	3.9	1000	90	3	1	–3.5	–2.5	450
MM3Z4V3T1	08	5	4.3	1000	90	3	1	–3.5	0	450
MM3Z4V7T1	09	5	4.7	800	80	3	2	–3.5	0.2	260
MM3Z5V1T1	0A	5	5.1	500	60	2	2	–2.7	1.2	225
MM3Z5V6T1	0C	5	5.6	200	40	1	2	–2.0	2.5	200
MM3Z6V2T1	0E	5	6.2	100	10	3	4	0.4	3.7	185
MM3Z6V8T1	0F	5	6.8	60	15	2	4	1.2	4.5	155
MM3Z7V5T1	0G	5	7.5	60	15	1	5	2.5	5.3	140
MM3Z8V2T1	0H	5	8.2	60	15	0.7	5	3.2	6.2	135
MM3Z9V1T1	0K	5	9.1	60	15	0.5	6	3.8	7.0	130
MM3Z10VT1	0L	5	10	60	20	0.2	7	4.5	8.0	130
MM3Z11VT1	0M	5	11	60	20	0.1	8	5.4	9.0	130
MM3Z12VT1	0N	5	12	80	25	0.1	8	6.0	10.0	130
MM3Z13VT1	0P	5	13	80	30	0.1	8	7.0	11.0	120
MM3Z15VT1	0T	5	15	80	30	0.05	10.5	9.2	13.0	110
MM3Z16VT1	0U	5	16	80	40	0.05	11.2	10.4	14.0	105
MM3Z18VT1	0W	5	18	80	45	0.05	12.6	12.4	16.0	100
MM3Z20VT1	0Z	5	20	100	55	0.05	14	14.4	18.0	85
MM3Z22VT1	10	5	22	100	55	0.05	15.4	16.4	20.0	85
MM3Z24VT1	11	5	24	120	70	0.05	16.8	18.4	22.0	80
Device	**Marking**	**Test Current I_{ZT} mA**	**Zener Voltage V_Z (±5%) Nominal (Note 1)**	**Z_{ZK} I_Z = 0.5 mA Ω Max**	**Z_{ZT} $I_Z = I_{ZT}$ @ 10% Mod Ω Max**	**Max I_R μA @ V_R V**		**d_{VZ}/dt (mV/k) Below @ I_{ZT1} = 2 mA Min**	**d_{VZ}/dt (mV/k) Below @ I_{ZT1} = 2 mA Max**	**C pF Max @ V_R = 0 f = 1 MHz**
MM3Z27VT1	12	2	27	300	80	0.05	18.9	21.4	25.3	70
MM3Z33VT1	18	2	33	300	80	0.05	23.2	27.4	33.4	70
MM3Z75VT1	1G	2	75	500	255	0.05	52.5	73.4	88.6	35

NOTE 1. Zener voltage is measured with a pulse test current (I_{ZT}) applied at an ambient temperature of 25°C.

Typical Characteristics

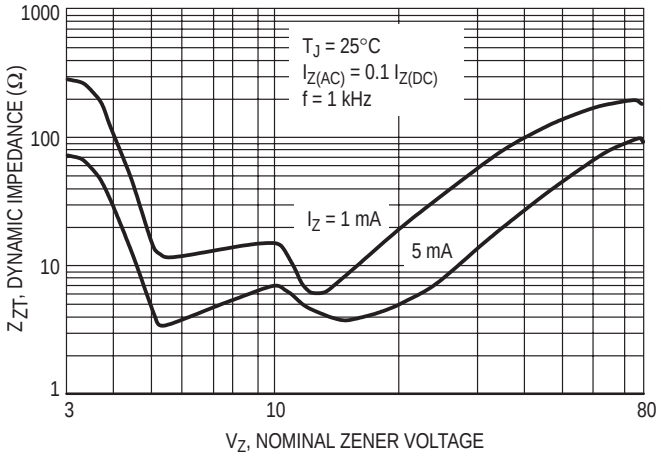


Figure 1. Effect of Zener Voltage on Zener Impedance

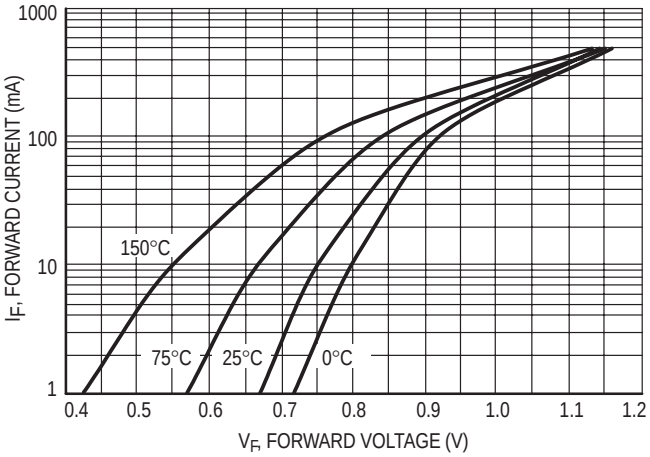


Figure 2. Typical Forward Voltage

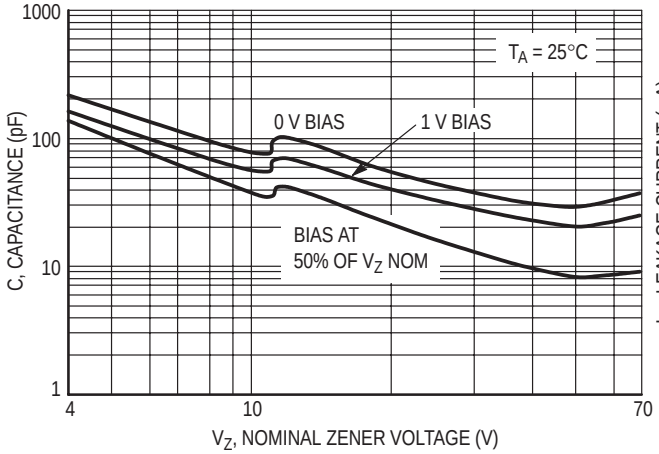


Figure 3. Typical Capacitance

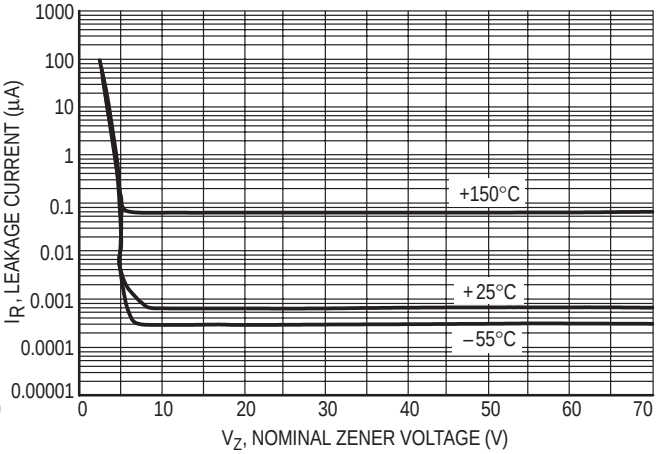


Figure 4. Typical Leakage Current

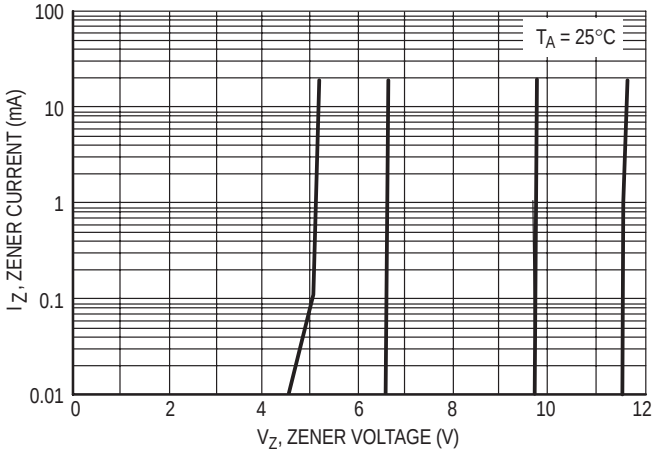


Figure 5. Zener Voltage versus Zener Current (V_Z Up to 12 V)

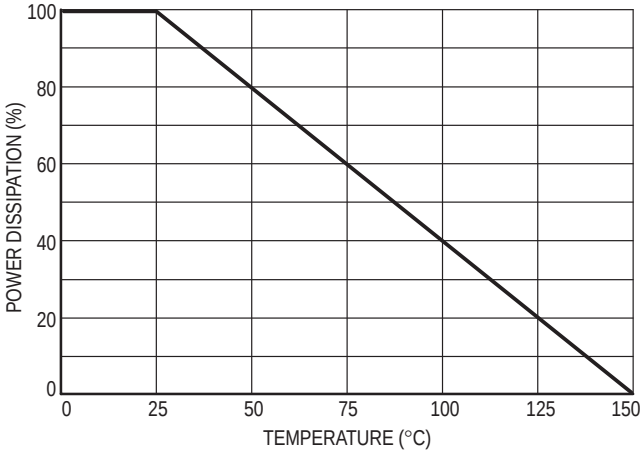
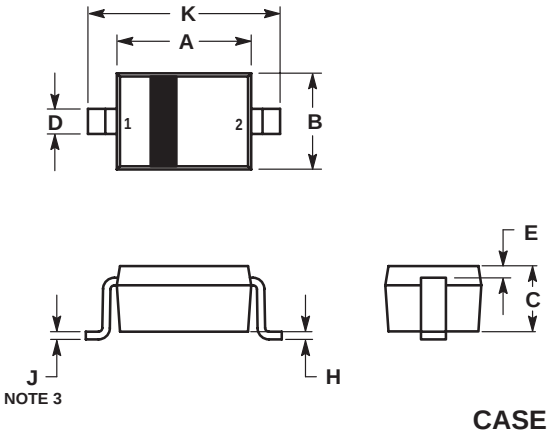


Figure 6. Steady State Power Derating

MM3Z2V4T1 SERIES

PACKAGE DIMENSIONS

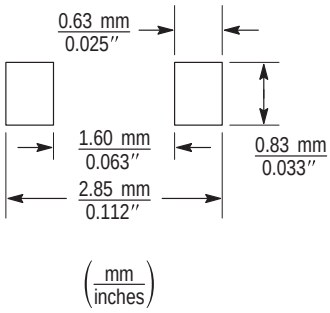


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	1.60	1.80	0.063	0.071
B	1.15	1.35	0.045	0.053
C	0.80	1.00	0.031	0.039
D	0.25	0.40	0.010	0.016
E	0.15 REF		0.006 REF	
H	0.00	0.10	0.000	0.004
J	0.089	0.177	0.0035	0.0070
K	2.30	2.70	0.091	0.106

STYLE 1:
PIN 1. CATHODE
2. ANODE

CASE 477–02
ISSUE A
SOD323



SOD–323

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