



DATA SHEET

SEMICONDUCTOR

MM5ZxxVB

200mW SOD-523 SURFACE MOUNT Very Small Outline Flat Lead Plastic Package Zener Voltage Regulators



SOD-523 Flat Lead

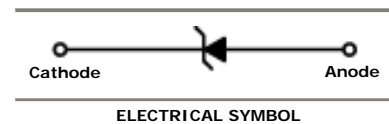
Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
P_D	Power Dissipation	200	mW
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_{OPR}	Operating Temperature Range	-55 to +150	$^\circ\text{C}$

These ratings are limiting values above which the serviceability of the diode may be impaired.

Specification Features:

- Wide Zener Voltage Range Selection, 2.0V to 75V
- Flat Lead SOD-523 Small Outline Plastic Package
- Extremely Small SOD-523 Package
- Surface Device Type Mounting
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Terminal Finish
- Band Indicates Cathode



Electrical Characteristics $T_A = 25^\circ\text{C}$ 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						
MM5Z2V0B	+5	1.95	2.0	2.05	5	100	1	564	120	0.5
MM5Z2V2B	$\perp 5$	2.14	2.2	2.26	5	100	1	564	120	0.7
MM5Z2V4B	05	2.35	2.4	2.45	5	100	1	564	45	1
MM5Z2V7B	15	2.65	2.7	2.75	5	100	1	564	18	1
MM5Z3V0B	25	2.94	3.0	3.06	5	100	1	564	9	1
MM5Z3V3B	35	3.23	3.3	3.37	5	95	1	564	4.5	1
MM5Z3V6B	45	3.53	3.6	3.67	5	90	1	564	4.5	1
MM5Z3V9B	+5	3.82	3.9	3.98	5	90	1	564	2.7	1
MM5Z4V3B	65	4.21	4.3	4.39	5	90	1	564	2.7	1
MM5Z4V7B	75	4.61	4.7	4.79	5	80	1	470	2.7	2
MM5Z5V1B	85	5.00	5.1	5.20	5	60	1	451	1.8	2
MM5Z5V6B	95	5.49	5.6	5.71	5	40	1	376	0.9	2
MM5Z6V2B	A5	6.08	6.2	6.32	5	10	1	141	2.7	4
MM5Z6V8B	B5	6.66	6.8	6.94	5	15	1	75	1.8	4
MM5Z7V5B	C5	7.35	7.5	7.65	5	15	1	75	0.9	5
MM5Z8V2B	D5	8.04	8.2	8.36	5	15	1	75	0.63	5
MM5Z9V1B	E5	8.92	9.1	9.28	5	15	1	94	0.45	6
MM5Z10VB	F5	9.80	10	10.20	5	20	1	141	0.18	7
MM5Z11VB	G5	10.78	11	11.22	5	20	1	141	0.09	8
MM5Z12VB	H5	11.76	12	12.24	5	25	1	141	0.09	8
MM5Z13VB	J5	12.74	13	13.26	5	30	1	160	0.09	8
MM5Z15VB	K5	14.70	15	15.30	5	30	1	188	0.045	10.5

DEVICE CHARACTERISTICS

MM5ZxxVB

Electrical Characteristics

$T_A = 25^\circ\text{C}$ 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						
MM5Z16VB	L5	15.68	16	16.32	5	40	1	188	0.045	11.2
MM5Z18VB	M5	17.64	18	18.36	5	45	1	212	0.045	12.6
MM5Z20VB	N5	19.60	20	20.40	5	55	1	212	0.045	14.0
MM5Z22VB	P5	21.56	22	22.44	5	55	1	235	0.045	15.4
MM5Z24VB	R5	23.52	24	24.48	5	70	1	235	0.045	16.8
MM5Z27VB	S5	26.46	27	27.54	2	80	0.5	282	0.045	18.9
MM5Z30VB	T5	29.40	30	30.60	2	80	0.5	282	0.045	21.0
MM5Z33VB	U5	32.34	33	33.66	2	80	0.5	306	0.045	23.0
MM5Z36VB	V5	35.28	36	36.72	2	90	0.5	329	0.045	25.2
MM5Z39VB	X5	38.22	39	39.78	2	130	0.5	329	0.045	27.3
MM5Z43VB	Y5	42.14	43	43.86	2	150	0.5	353	0.045	30.1
MM5Z47VB	Z5	46.06	47	47.94	2	170	0.5	353	0.045	33.0
MM5Z51VB	-5	49.98	51	52.02	2	180	0.5	376	0.045	35.7
MM5Z56VB	=5	54.88	56	57.12	2	200	0.5	400	0.045	39.2
MM5Z62VB	≅5	60.76	62	63.24	2	215	0.5	423	0.045	43.4
MM5Z68VB	>5	66.64	68	69.36	2	240	0.5	447	0.045	47.6
MM5Z75VB	<5	73.50	75	76.50	2	255	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. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong Electronics representative.
3. 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

MM5ZxxVB

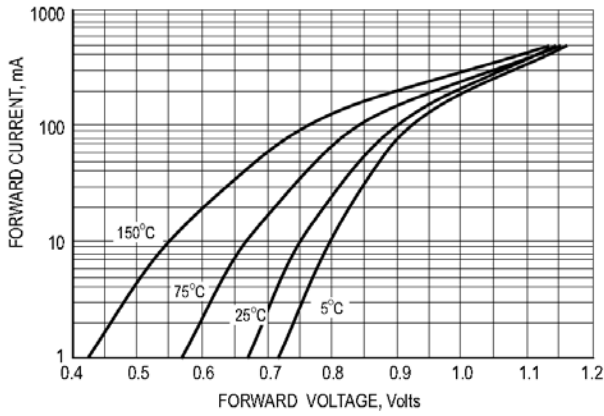


Fig.1 TYPICAL FORWARD VOLTAGE

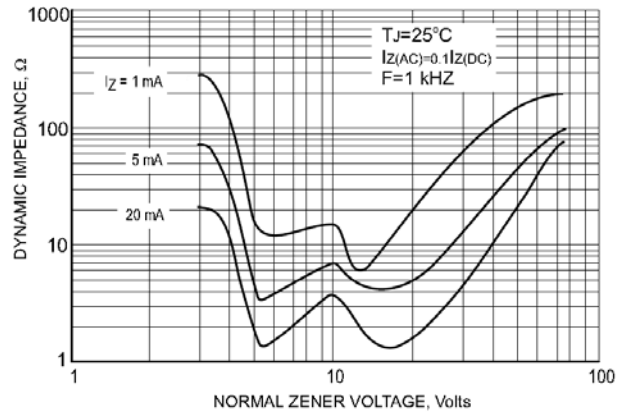


Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

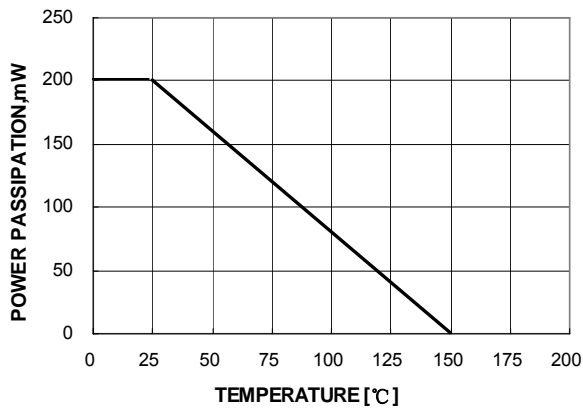


Fig.3 POWER DISSIPATION VS. AMBIENT TEMP.

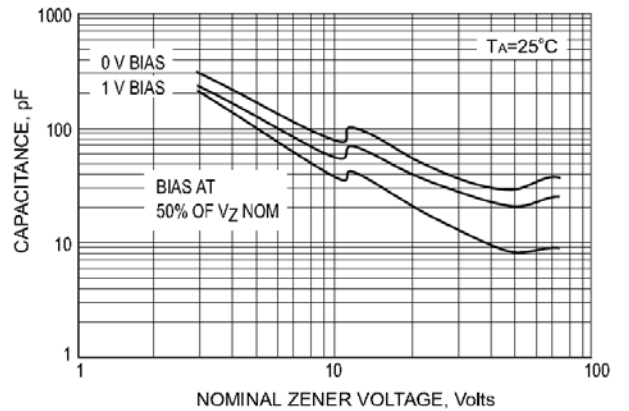


Fig.4 TYPICAL CAPACITANCE

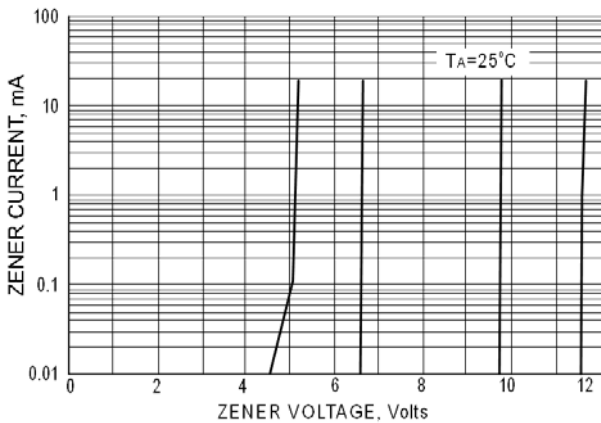


Fig.5 ZENER BREAKDOWN CHARACTERISTICS

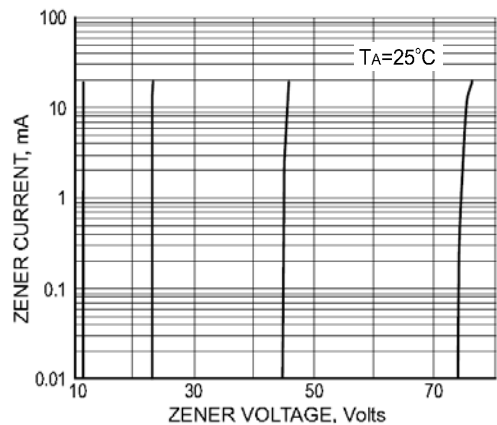


Fig.6 ZENER BREAKDOWN CHARACTERISTICS

PACKAGE OUTLINE & DIMENSIONS

MM5ZxxVB

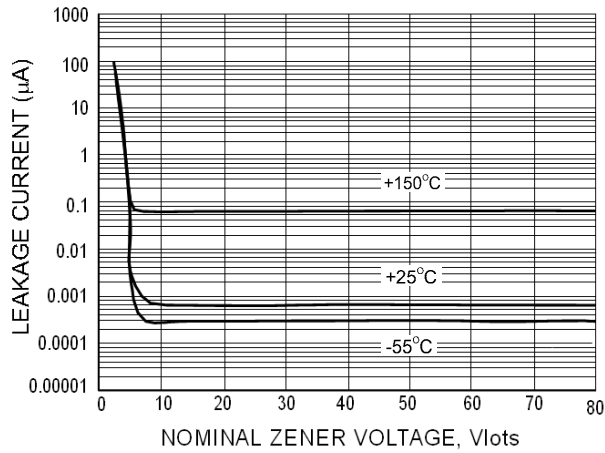
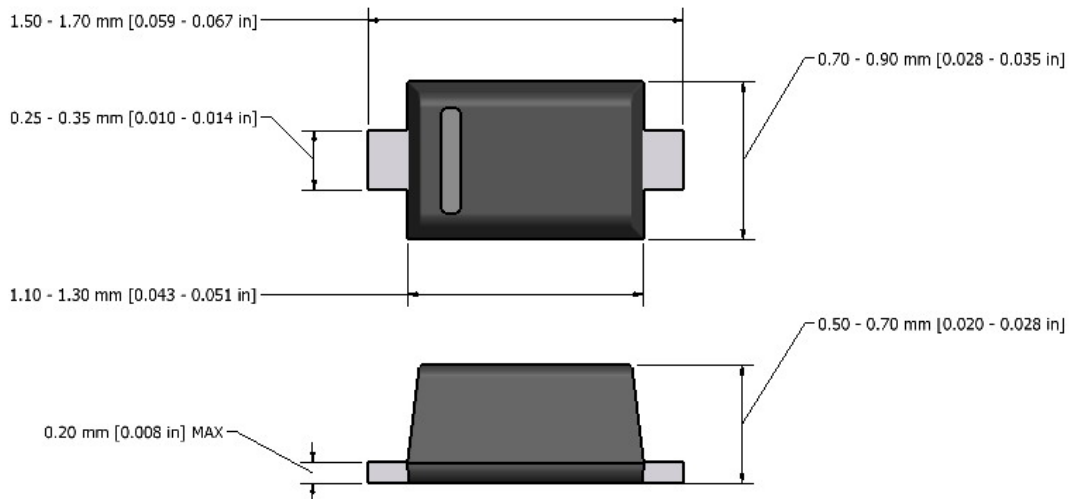


Fig.7 TYPICAL LEAKGE CURRENT

Flat Lead SOD-523 Package Outline



Note: Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.