



DATA SHEET

MMBZ5221BW SERIES

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 to 39 Volts **POWER** 200 mWatts

SOT-323

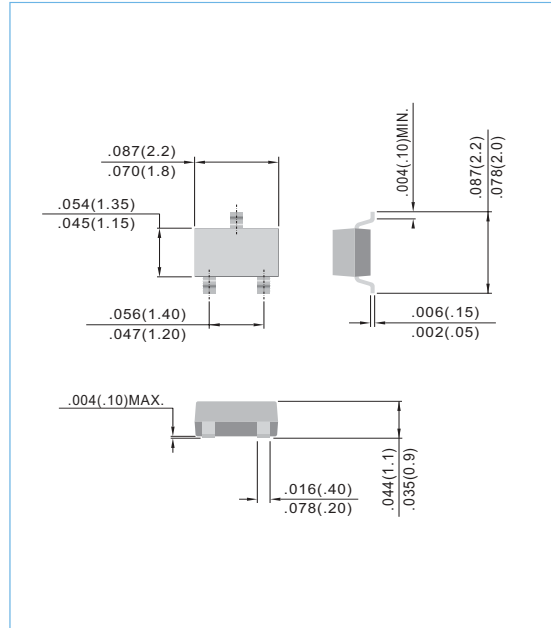
Unit: inch (mm)

FEATURES

- Planar Die construction
- 200mW Power Dissipation
- Zener Voltages from 2.4V~39V
- Ideally Suited for Automated Assembly Processes
- Both normal and Pb free product are available :
 - Normal : 80~95% Sn, 5~20% Pb
 - Pb free: 98.5% Sn above

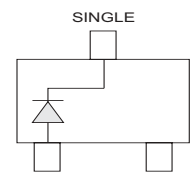
MECHANICAL DATA

Case: SOT-323, Plastic
 Terminals: Solderable per MIL-STD-202, Method 208
 Approx. Weight: 0.0052 gram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Maximum Forward Voltage Drop at IF=100mA	V _F	1.0	V
Maximum Power Dissipation (Notes A) at 25°C	P _D	200	mW
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Notes B)	I _{FSM}	4.0	Amps
Operating Junction and Storage Temperature Range	T _J	-55 to +150	°C



NOTES:

- A. Mounted on 5.0mm²(.013mm thick) land areas.
 B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.



Part Number	Marking Code	Nominal Zener Voltage			Max. Zener Impedance				Max Reverse Leakage Current	
		V _Z @ I _{ZT}			Z _{TT} @ I _{ZT}		Z _{ZK} @ I _{ZK}		I _R @ V _R	
		Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA	V
200 mWatts Zener Diodes										
MMBZ5221BW	C1	2.4	2.28	2.52	30	20.0	1200	0.25	100	1.0
MMBZ5222BW	C2	2.5	2.38	2.63	30	20.0	1250	0.25	100	1.0
MMBZ5223BW	C3	2.7	2.57	2.84	30	20.0	1300	0.25	75	1.0
MMBZ5225BW	C5	3	2.85	3.15	30	20.0	1600	0.25	50	1.0
MMBZ5226BW	D1	3.3	3.14	3.47	28	20.0	1600	0.25	25	1.0
MMBZ5227BW	D2	3.6	3.42	3.78	24	20.0	1700	0.25	15	1.0
MMBZ5228BW	D3	3.9	3.71	4.10	23	20.0	1900	0.25	10	1.0
MMBZ5229BW	D4	4.3	4.09	4.52	22	20.0	2000	0.25	5.0	1.0
MMBZ5230BW	D5	4.7	4.47	4.94	19	20.0	1900	0.25	5.0	2.0
MMBZ5231BW	E1	5.1	4.85	5.36	17	20.0	1600	0.25	5.0	2.0
MMBZ5232BW	E2	5.6	5.32	5.88	11	20.0	1600	0.25	5.0	3.0
MMBZ5234BW	E4	6.2	5.89	6.51	7	20.0	1000	0.25	5.0	4.0
MMBZ5235BW	E5	6.8	6.46	7.14	5	20.0	750	0.25	3.0	5.0
MMBZ5236BW	F1	7.5	7.13	7.88	6	20.0	500	0.25	3.0	6.0
MMBZ5237BW	F2	8.2	7.79	8.61	8	20.0	500	0.25	3.0	6.0
MMBZ5239BW	F4	9.1	8.65	9.56	10	20.0	600	0.25	3.0	6.5
MMBZ5240BW	F5	10	9.50	10.50	17	20.0	600	0.25	3.0	8.0
MMBZ5241BW	H1	11	10.45	11.55	22	20.0	600	0.25	3.0	8.4
MMBZ5242BW	H2	12	11.40	12.60	30	20.0	600	0.25	2.0	9.1
MMBZ5243BW	H3	13	12.35	13.65	13	9.5	600	0.25	1.0	9.9
MMBZ5245BW	H5	15	14.25	15.75	16	8.5	600	0.25	0.5	11.0
MMBZ5246BW	J1	16	15.20	16.80	17	7.8	600	0.25	0.1	12.0
MMBZ5248BW	J3	18	17.10	18.90	21	7.0	600	0.25	0.1	14.0
MMBZ5250BW	J5	20	19.00	21.00	25	6.2	600	0.25	0.1	15.0
MMBZ5251BW	K1	22	20.90	23.10	29	5.6	600	0.25	0.1	17.0
MMBZ5252BW	K2	24	22.80	25.20	33	5.2	600	0.25	0.1	18.0
MMBZ5254BW	K4	27	25.65	28.35	41	5.0	600	0.25	0.1	21.0
MMBZ5255BW	K5	28	26.60	29.40	44	4.5	600	0.25	0.1	21.0
MMBZ5256BW	M1	30	28.50	31.50	49	4.2	600	0.25	0.1	23.0
MMBZ5257BW	M2	33	31.35	34.65	58	3.8	700	0.25	0.1	25.0
MMBZ5258BW	M3	36	34.20	37.80	70	3.4	700	0.25	0.1	27.0
MMBZ5259BW	M4	39	37.05	40.95	80	3.2	800	0.25	0.1	30.0

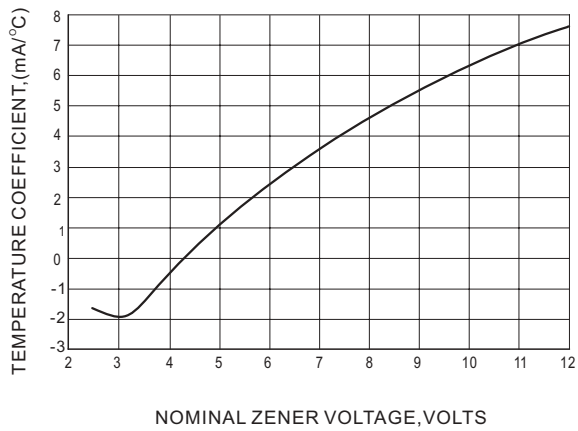


Fig.1 TEMPERATURE COEFFICIENTS

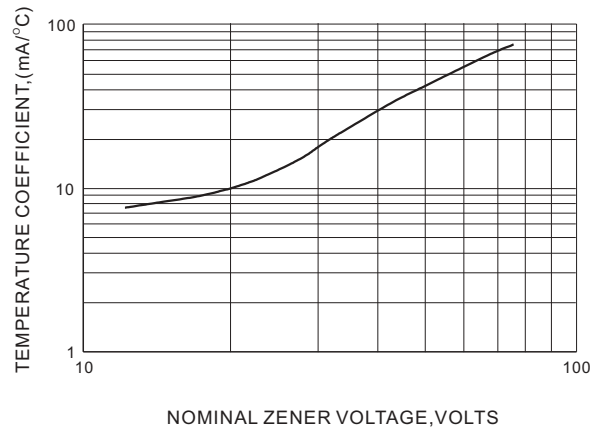


Fig.2 TEMPERATURE COEFFICIENTS

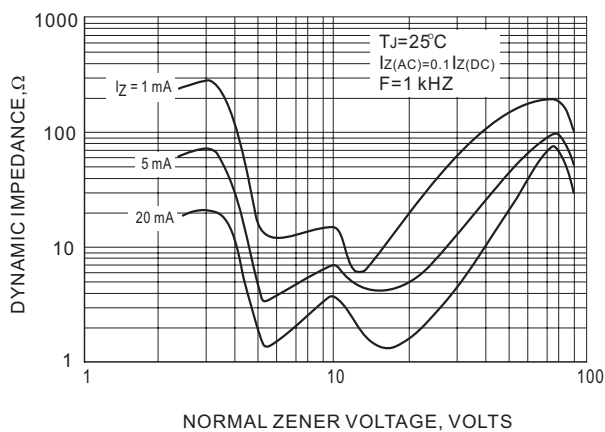


Fig.3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

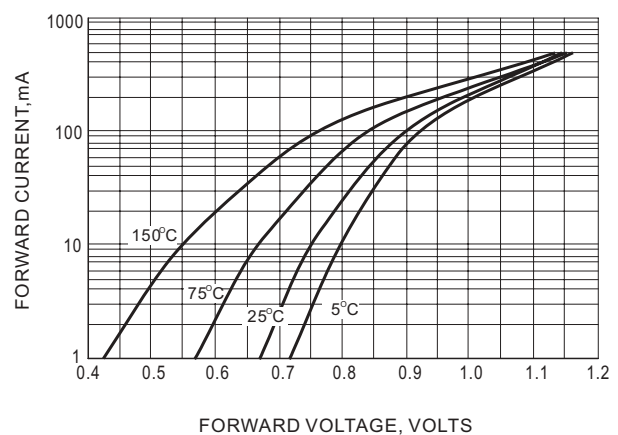


Fig.4 TYPICAL FORWARD VOLTAGE

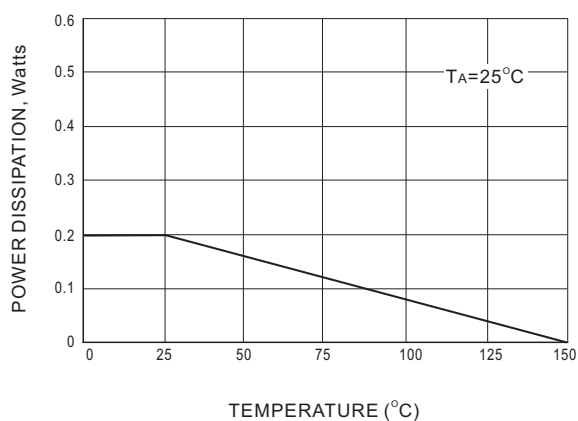


Fig.5 STEADY STATE POWER DERATING

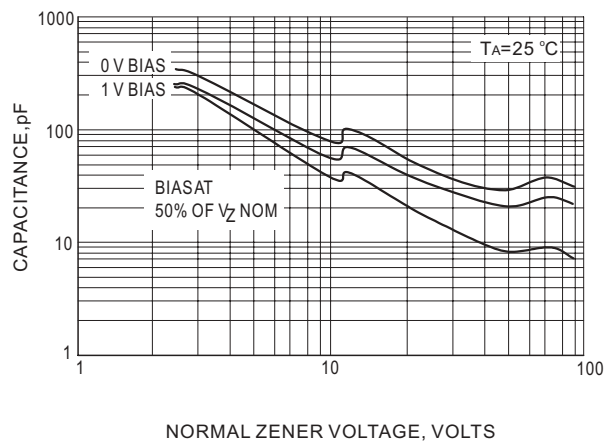


Fig.6 TYPICAL CAPACITANCE

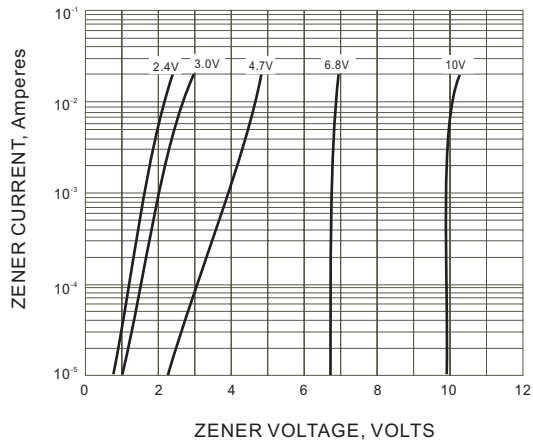


Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

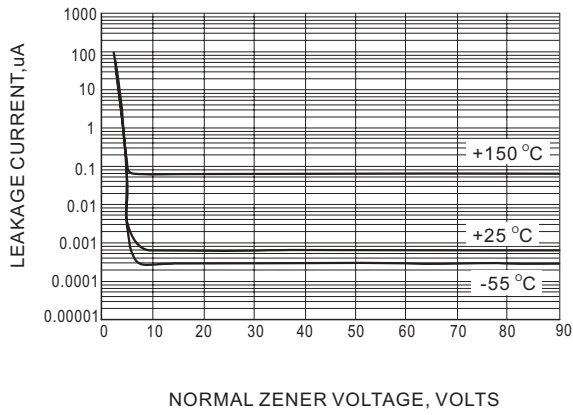
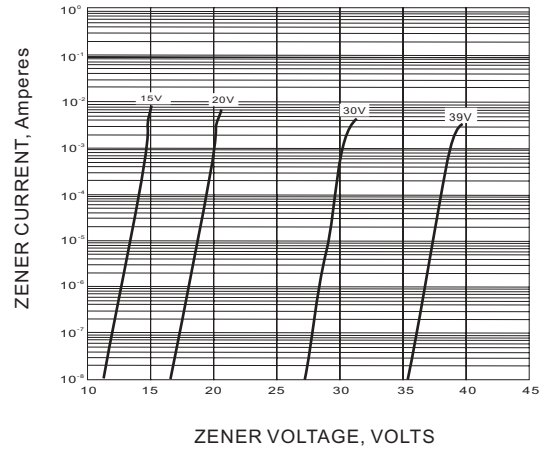


Fig.9 TYPICAL LEAKAGE CURRENT