



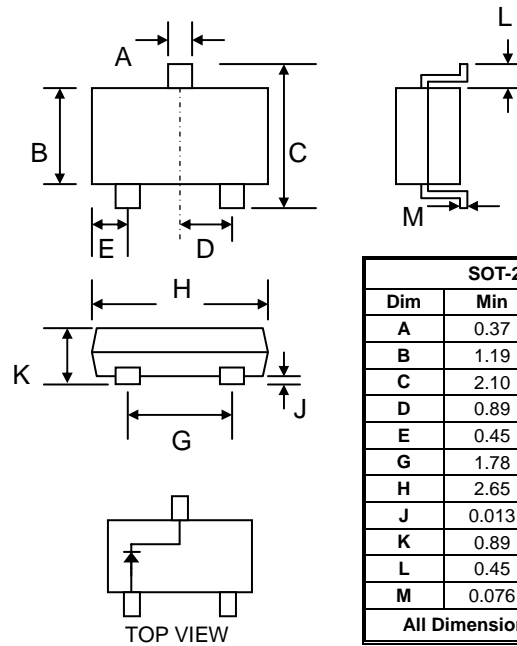
# MMBZ5221B – MMBZ5262B



## 350mW SURFACE MOUNT ZENER DIODE

### Features

- Planar Die Construction
- 350mW Power Dissipation
- 2.4 – 51V Nominal Zener Voltage
- 5% Standard Vz Tolerance
- Designed for Surface Mount Application
- Plastic Material – UL Recognition Flammability Classification 94V-O



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
G	1.78	2.05
H	2.65	3.05
J	0.013	0.15
K	0.89	1.10
L	0.45	0.61
M	0.076	0.178
All Dimensions in mm		

### Mechanical Data

- Case: SOT-23, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.008 grams (approx.)
- Mounting Position: Any
- Marking: Device Code, See Page 2
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 4**

### Maximum Ratings @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation at $T_A = 25^{\circ}\text{C}$ (Note 1)	$P_d$	350	mW
Forward Voltage @ $I_F = 10\text{mA}$	$V_F$	0.9	V
Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150	$^{\circ}\text{C}$

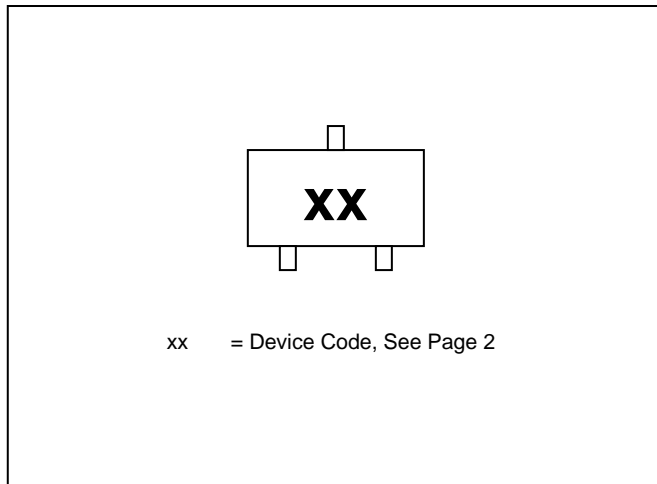
Note: 1. Valid provided that device terminals are kept at ambient temperature.

**Electrical Characteristics** @ $T_A=25^{\circ}\text{C}$  unless otherwise specified

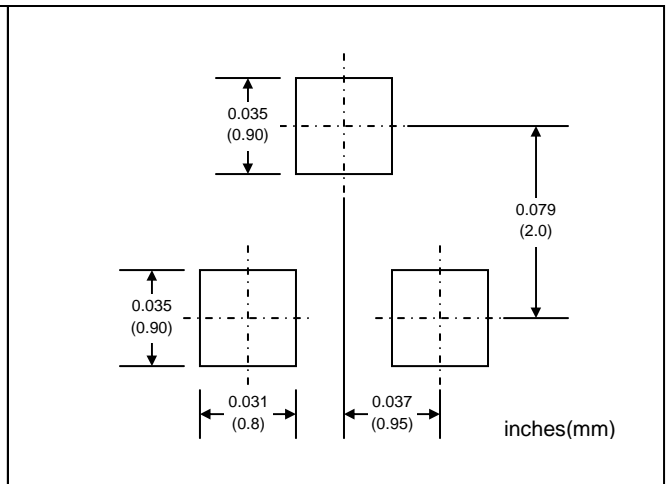
Type Number (Note 1)	Device Marking Code	Zener Voltage Range (Note 2)			Maximum Zener Impedance (Note 3)				Max Reverse Leakage Current		Typical Temp. Coefficient of Zener Voltage (%/K)
		V <sub>Z</sub> @ I <sub>ZT</sub>			Z <sub>ZT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub>	@ V <sub>R</sub>	
		Nom (V)	Min (V)	Max (V)	( $\Omega$ )	(mA)	( $\Omega$ )	(mA)	( $\mu\text{A}$ )	(V)	
MMBZ5221B	C1	2.4	2.28	2.52	30	20	1200	0.25	100	1.0	-0.075
MMBZ5222B	C2	2.5	2.38	2.63	30	20	1250	0.25	100	1.0	-0.075
MMBZ5223B	C3	2.7	2.57	2.84	30	20	1300	0.25	75	1.0	-0.075
MMBZ5225B	C5	3.0	2.85	3.15	30	20	1600	0.25	50	1.0	-0.075
MMBZ5226B	D1	3.3	3.14	3.47	28	20	1600	0.25	25	1.0	-0.070
MMBZ5227B	D2	3.6	3.42	3.78	24	20	1700	0.25	15	1.0	-0.065
MMBZ5228B	D3	3.9	3.71	4.10	23	20	1900	0.25	10	1.0	-0.060
MMBZ5229B	D4	4.3	4.09	4.52	22	20	2000	0.25	5.0	1.0	-0.055
MMBZ5230B	D5	4.7	4.47	4.94	19	20	1900	0.25	5.0	2.0	$\pm 0.030$
MMBZ5231B	E1	5.1	4.85	5.36	17	20	1600	0.25	5.0	2.0	$\pm 0.030$
MMBZ5232B	E2	5.6	5.32	5.88	11	20	1600	0.25	5.0	3.0	+0.038
MMBZ5234B	E4	6.2	5.89	6.51	7.0	20	1000	0.25	5.0	4.0	+0.045
MMBZ5235B	E5	6.8	6.46	7.14	5.0	20	750	0.25	3.0	5.0	+0.050
MMBZ5236B	F1	7.5	7.13	7.88	6.0	20	500	0.25	3.0	6.0	+0.058
MMBZ5237B	F2	8.2	7.79	8.61	8.0	20	500	0.25	3.0	6.0	+0.062
MMBZ5239B	F4	9.1	8.65	9.56	10	20	600	0.25	3.0	6.5	+0.068
MMBZ5240B	F5	10	9.50	10.50	17	20	600	0.25	3.0	8.0	+0.075
MMBZ5241B	H1	11	10.45	11.55	22	20	600	0.25	2.0	8.4	+0.076
MMBZ5242B	H2	12	11.40	12.60	30	20	600	0.25	1.0	9.1	+0.077
MMBZ5243B	H3	13	12.35	13.65	13	9.5	600	0.25	0.5	9.9	+0.079
MMBZ5245B	H5	15	14.25	15.75	16	8.5	600	0.25	0.1	11	+0.082
MMBZ5246B	J1	16	15.20	16.80	17	7.8	600	0.25	0.1	12	+0.083
MMBZ5248B	J3	18	17.10	18.90	21	7.0	600	0.25	0.1	14	+0.085
MMBZ5250B	J5	20	19.00	21.00	25	6.2	600	0.25	0.1	15	+0.086
MMBZ5251B	K1	22	20.90	23.10	29	5.6	600	0.25	0.1	17	+0.087
MMBZ5252B	K2	24	22.80	25.20	33	5.2	600	0.25	0.1	18	+0.087
MMBZ5254B	K4	27	25.65	28.35	41	5.0	600	0.25	0.1	21	+0.090
MMBZ5255B	K5	28	26.60	29.40	44	4.5	600	0.25	0.1	21	+0.091
MMBZ5256B	M1	30	28.50	31.50	49	4.2	600	0.25	0.1	23	+0.091
MMBZ5257B	M2	33	31.35	34.65	58	3.8	700	0.25	0.1	25	+0.092
MMBZ5258B	M3	36	34.20	37.80	70	3.4	700	0.25	0.1	27	+0.093
MMBZ5259B	M4	39	37.05	40.95	80	3.2	800	0.25	0.1	30	+0.094
MMBZ5260B	M5	43	40.85	45.15	93	3.0	900	0.25	0.1	33	+0.095
MMBZ5261B	N1	47	44.65	49.35	105	2.7	1000	0.25	0.1	36	+0.095
MMBZ5262B	N2	51	48.45	53.55	125	2.5	1100	0.25	0.1	39	+0.096

- Note: 1. Type numbers listed have standard tolerance on the nominal zener voltage of  $\pm 5\%$ .  
2. Measured with pulses  $t_p = 1\text{ms}$ .  
3.  $f = 1\text{KHz}$

## MARKING INFORMATION



## RECOMMENDED FOOTPRINT



## PACKAGING INFORMATION

### TAPE & REEL

178mm  
Inspection Hole  
Product ID Label  
8mm  
4mm  
8mm  
4mm  
1.6mm  
Direction of Unreeling

Reel Diameter (mm)	Quantity (PCS)	Inner Box Size L x W x H (mm)	Quantity (PCS)	Carton Size L x W x H (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
178	3,000	187 x 187 x 65	15,000	390 x 240 x 420	150,000	10.0

**Note:** 1. Anti-static plastic reel, white, water clear or blue color. Inspection hole might be varied in different alignment.  
2. Components are packed in accordance with EIA standard 481-1 and 481-2.

## ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
MMBZ52xxB-T1	SOT-23	3000/Tape & Reel

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, MMBZ5221B-T1-LF.**

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