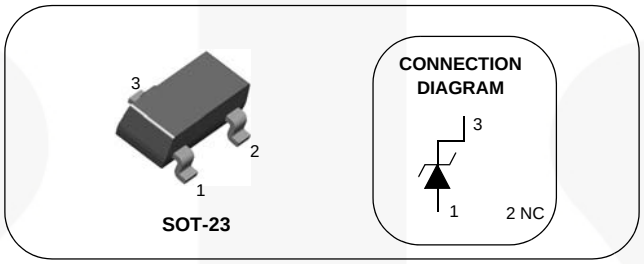
November 2015

MMBZ5221B - MMBZ5257B
Zener Diodes

Tolerance = 5%



Absolute Maximum Ratings(1, 2)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter		Value	Unit
P_D	Power Dissipation	Referencing $R_{\theta JA}$, T_A = 25°C	250	mW
		Referencing ψ_{JL}, T_L = 25°C	550	
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance(3)		465	°C/W
ψ_{JL}	Junction-to-Lead Thermal Characteristics (with reference to Cathode)		220	°C/W
T_{STG}	Storage Temperature Range		-55 to +150	°C
T_J	Operating Junction Temperature		+150	°C

Note:

1.These ratings are based on a maximum junction temperature of 150°C.

2.These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

3. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Device	Mark	V_Z(V) @ I_Z(mA)				Z_Z(Ω) @ I_Z(mA)		Z_{ZK}(Ω) @ I_{ZK}(mA)		I_R(μA) @ V_R(V)	
		Min.	Nor.	Max.	I_Z(mA)						
MMBZ5221B	18A	2.28	2.4	2.52	20	30	20	1,200	0.25	100	1.0
MMBZ5223B	18C	2.565	2.7	2.835	20	30	20	1,300	0.25	75	1.0
MMBZ5226B	8A	3.135	3.3	3.465	20	28	20	1,600	0.25	25	1.0
MMBZ5227B	8B	3.42	3.6	3.78	20	24	20	1,700	0.25	15	1.0
MMBZ5228B	8C	3.705	3.9	4.095	20	23	20	1,900	0.25	10	1.0
MMBZ5229B	8D	4.085	4.3	4.515	20	22	20	1,000	0.25	5.0	1.0
MMBZ5230B	8E	4.465	4.7	4.935	20	19	20	1,900	0.25	5.0	2.0
MMBZ5231B	8F	4.845	5.1	5.355	20	17	20	1,600	0.25	5.0	2.0
MMBZ5232B	8G	5.32	5.6	5.88	20	11	20	1,600	0.25	5.0	3.0
MMBZ5233B	8H	5.7	6.0	6.3	20	7.0	20	1,600	0.25	5.0	3.5
MMBZ5234B	8J	5.89	6.2	6.51	20	7.0	20	1,000	0.25	5.0	4.0
MMBZ5235B	8K	6.46	6.8	7.14	20	5.0	20	750	0.25	3.0	5.0
MMBZ5236B	8L	7.125	7.5	7.875	20	6.0	20	500	0.25	3.0	6.0
MMBZ5237B	8M	7.79	8.2	8.61	20	8.0	20	500	0.25	3.0	6.5
MMBZ5238B	8N	8.265	8.7	9.135	20	8.0	20	600	0.25	3.0	6.5
MMBZ5239B	8P	8.645	9.1	9.555	20	10	20	600	0.25	3.0	7.0
MMBZ5240B	8Q	9.5	10	10.5	20	17	20	600	0.25	3.0	8.0
MMBZ5241B	8R	10.45	11	11.55	20	22	20	600	0.25	2.0	8.4
MMBZ5242B	8S	11.4	12	12.6	20	30	20	600	0.25	1.0	9.1
MMBZ5243B	8T	12.35	13	13.65	9.5	13	9.5	600	0.25	0.5	9.9
MMBZ5244B	8U	13.3	14	14.7	9.0	15	9.0	600	0.25	0.1	10
MMBZ5245B	8V	14.25	15	15.75	8.5	16	8.5	600	0.25	0.1	11
MMBZ5246B	8W	15.2	16	16.8	7.8	17	7.8	600	0.25	0.1	12
MMBZ5247B	8X	16.15	17	17.85	7.4	19	7.4	600	0.25	0.1	13
MMBZ5248B	8Y	17.1	18	18.9	7.0	21	7.0	600	0.25	0.1	14
MMBZ5249B	8Z	18.05	19	19.95	6.6	23	6.6	600	0.25	0.1	14
MMBZ5250B	81A	19	20	21	6.2	25	6.2	600	0.25	0.1	15
MMBZ5251B	81B	20.9	22	23.1	5.6	29	5.6	600	0.25	0.1	17
MMBZ5252B	81C	22.8	24	25.2	5.2	33	5.2	600	0.25	0.1	18
MMBZ5253B	81D	23.75	25	26.25	5.0	35	5.0	600	0.25	0.1	19
MMBZ5254B	81E	25.65	27	28.35	4.6	41	4.6	600	0.25	0.1	21
MMBZ5255B	81F	26.6	28	29.4	4.5	44	4.5	600	0.25	0.1	21
MMBZ5256B	81G	28.5	30	31.5	4.2	49	4.2	600	0.25	0.1	23
MMBZ5257B	81H	31.35	33	34.65	3.8	58	3.8	600	0.25	0.1	25
V_F Forward Voltage = 0.9 V Maximum at I_F = 10 mA for all MMBZ5200 series											

Typical Performance Characteristics

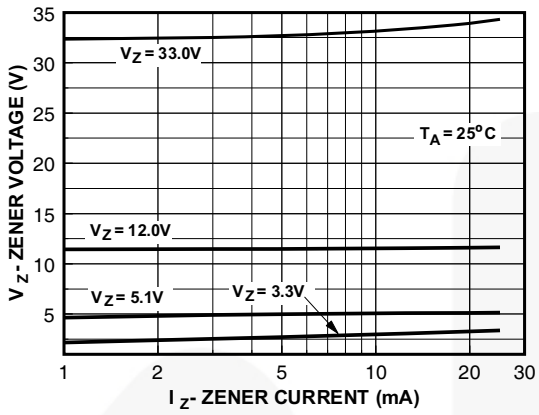


Figure 1. Zener Current vs. Zener Voltage

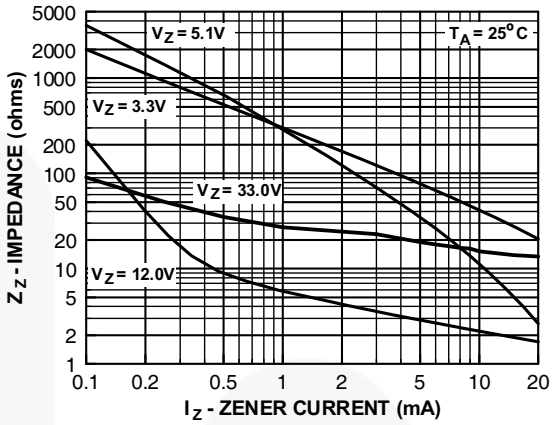


Figure 2. Zener Current vs. Zener Impedence

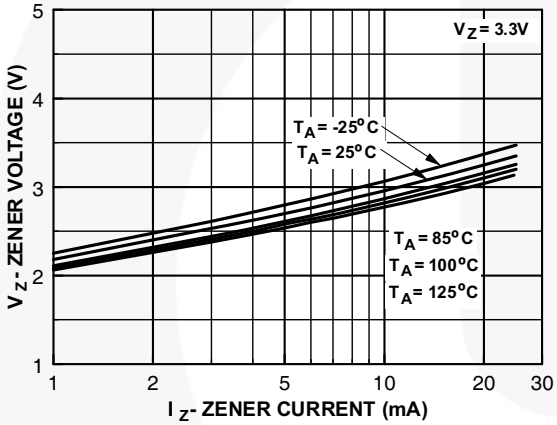


Figure 3. 3.3 Zener Voltage vs. Temperature

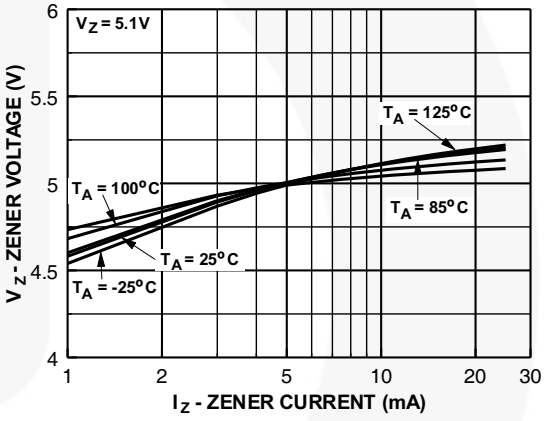


Figure 4. 5.1 Zener Voltage vs. Temperature

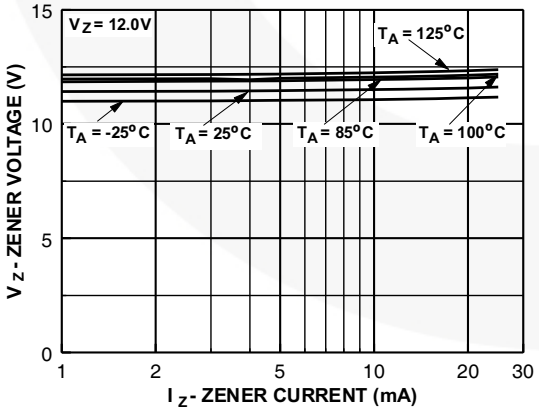


Figure 5. 12 Zener Voltage vs. Zener Temperature

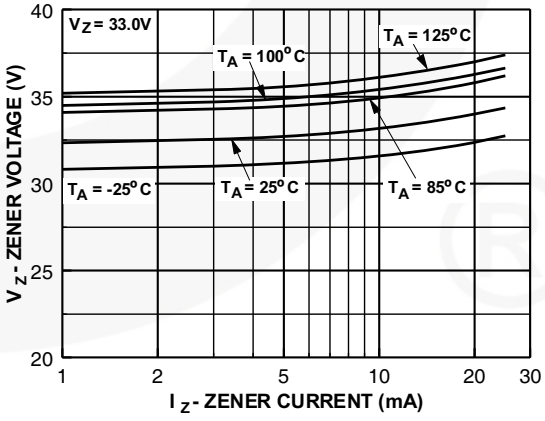
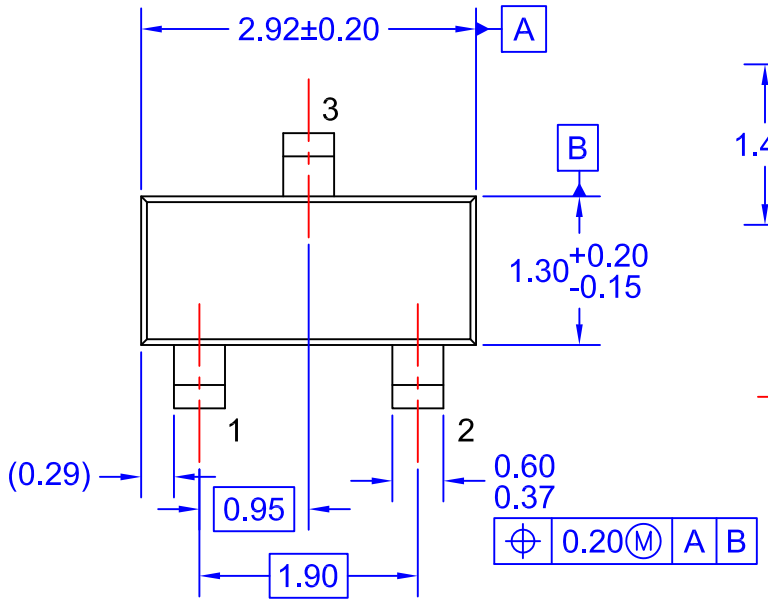
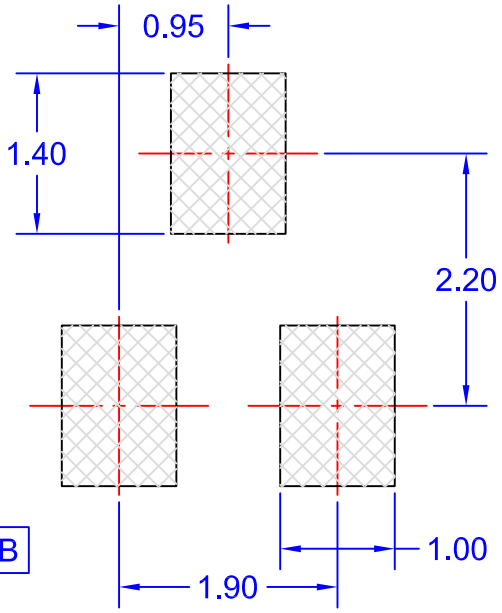
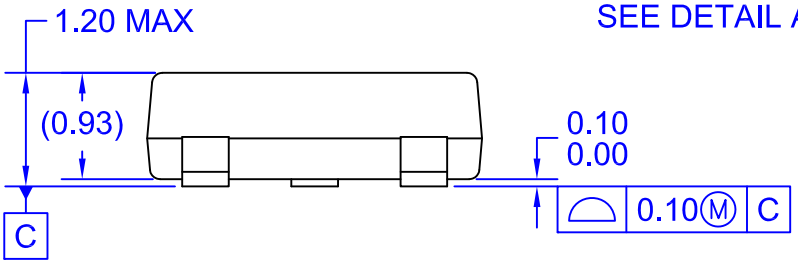


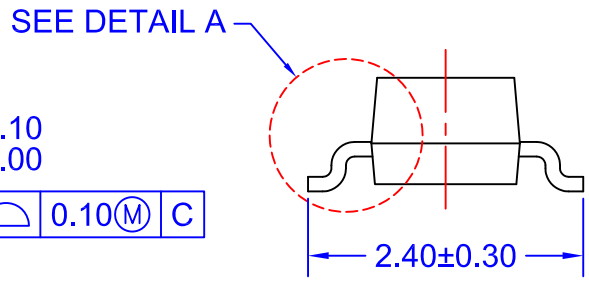
Figure 6. 33 Zener Voltage vs. Zener Temperature

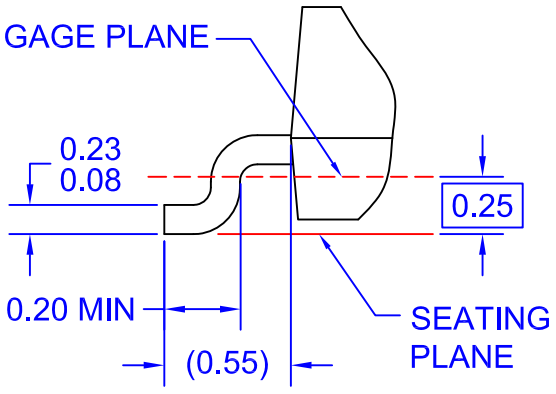




LAND PATTERN
RECOMMENDATION







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