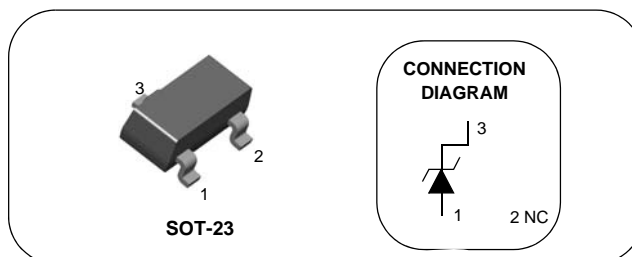


# MMBZ5221B-MMBZ5257B

## Zener Diodes

Tolerance = 5%



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

Symbol	Parameter	Value	Units
$P_D$	Power Dissipation	350	mW
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature	+150	$^\circ\text{C}$

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

### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Device	Mark	$V_Z$ (V)			$Z_Z(\Omega)$ @ $I_Z$ (mA)		$Z_{ZK}(\Omega)$ @ $I_{ZK}$ (mA)		$I_R$ ( $\mu\text{A}$ ) @ $V_R$ (V)	
		Min.	Nor.	Max.						
MMBZ5221B	18A	2.28	2.4	2.52	30	20	1,200	0.25	100	1.0
MMBZ5223B	18C	2.565	2.7	2.835	30	20	1,300	0.25	75	1.0
MMBZ5226B	8A	3.135	3.3	3.465	28	20	1,600	0.25	25	1.0
MMBZ5227B	8B	3.42	3.6	3.78	24	20	1,700	0.25	15	1.0
MMBZ5228B	8C	3.705	3.9	4.095	23	20	1,900	0.25	10	1.0
MMBZ5229B	8D	4.085	4.3	4.515	22	20	1,000	0.25	5.0	1.0
MMBZ5230B	8E	4.465	4.7	4.935	19	20	1,900	0.25	5.0	2.0
MMBZ5231B	8F	4.845	5.1	5.355	17	20	1,600	0.25	5.0	2.0
MMBZ5232B	8G	5.32	5.6	5.88	11	20	1,600	0.25	5.0	3.0
MMBZ5233B	8H	5.7	6.0	6.3	7.0	20	1,600	0.25	5.0	3.5
MMBZ5234B	8J	5.89	6.2	6.51	7.0	20	1,000	0.25	5.0	4.0
MMBZ5235B	8K	6.46	6.8	7.14	5.0	20	750	0.25	3.0	5.0
MMBZ5236B	8L	7.125	7.5	7.875	6.0	20	500	0.25	3.0	6.0
MMBZ5237B	8M	7.79	8.2	8.61	8.0	20	500	0.25	3.0	6.5
MMBZ5238B	8N	8.265	8.7	9.135	8.0	20	600	0.25	3.0	6.5
MMBZ5239B	8P	8.645	9.1	9.555	10	20	600	0.25	3.0	7.0
MMBZ5240B	8Q	9.5	10	10.5	17	20	600	0.25	3.0	8.0
MMBZ5241B	8R	10.45	11	11.55	22	20	600	0.25	2.0	8.4
MMBZ5242B	8S	11.4	12	12.6	30	20	600	0.25	1.0	9.1

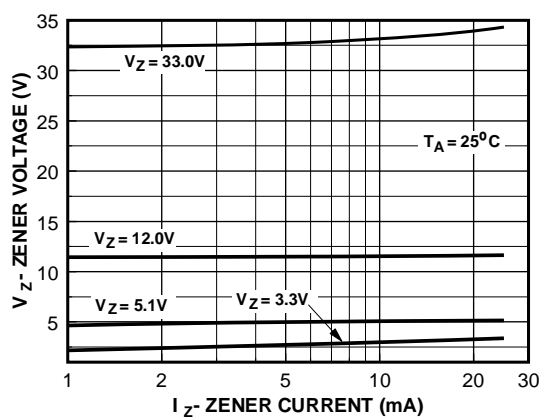
$V_F$  Forward Voltage = 0.9V Maximum @  $I_F = 10\text{mA}$  for all MMBZ5200 series

**Electrical Characteristics** (Continued)  $T_A = 25^\circ\text{C}$  unless otherwise noted

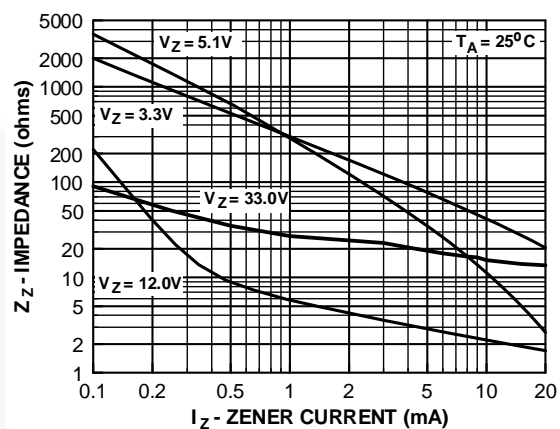
Device	Mark	$V_Z$ (V)			$Z_Z(\Omega)$ @ $I_Z$ (mA)		$Z_{ZK}(\Omega)$ @ $I_{ZK}$ (mA)		$I_R$ ( $\mu\text{A}$ ) @ $V_R$ (V)	
		Min.	Nor.	Max.						
MMBZ5243B	8T	12.35	13	13.65	13	9.5	600	0.25	0.5	9.9
MMBZ5244B	8U	13.3	14	14.7	15	9.0	600	0.25	0.1	10
MMBZ5245B	8V	14.25	15	15.75	16	8.5	600	0.25	0.1	11
MMBZ5246B	8W	15.2	16	16.8	17	7.8	600	0.25	0.1	12
MMBZ5247B	8X	16.15	17	17.85	19	7.4	600	0.25	0.1	13
MMBZ5248B	8Y	17.1	18	18.9	21	7.0	600	0.25	0.1	14
MMBZ5249B	8Z	18.05	19	19.95	23	6.6	600	0.25	0.1	14
MMBZ5250B	81A	19	20	21	25	6.2	600	0.25	0.1	15
MMBZ5251B	81B	20.9	22	23.1	29	5.6	600	0.25	0.1	17
MMBZ5252B	81C	22.8	24	25.2	33	5.2	600	0.25	0.1	18
MMBZ5253B	81D	23.75	25	26.25	35	5.0	600	0.25	0.1	19
MMBZ5254B	81E	25.65	27	28.35	41	4.6	600	0.25	0.1	21
MMBZ5255B	81F	26.6	28	29.4	44	4.5	600	0.25	0.1	21
MMBZ5256B	81G	28.5	30	31.5	49	4.2	600	0.25	0.1	23
MMBZ5257B	81H	31.35	33	34.65	58	3.8	600	0.25	0.1	25

 **$V_F$  Forward Voltage = 0.9V Maximum @  $I_F = 10\text{mA}$  for all MMBZ5200 series**

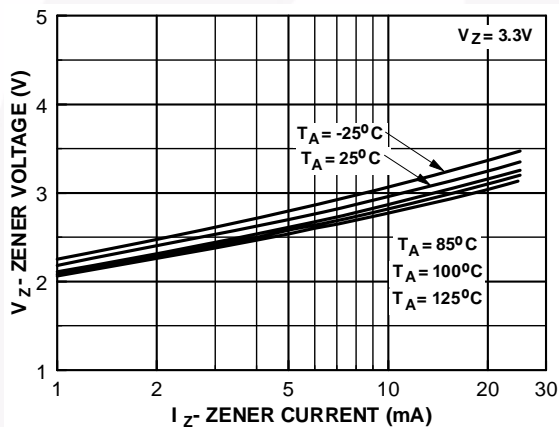
## Typical Performance Characteristics



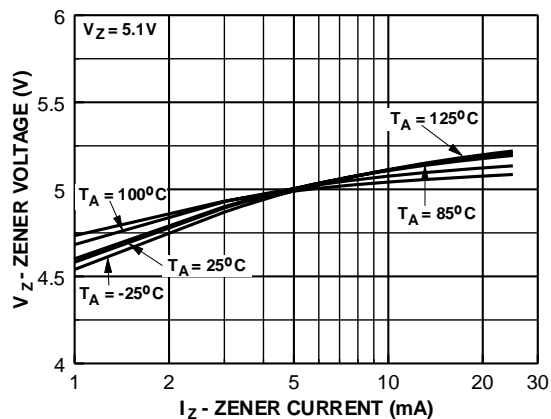
Zener Current vs. Zener Voltage



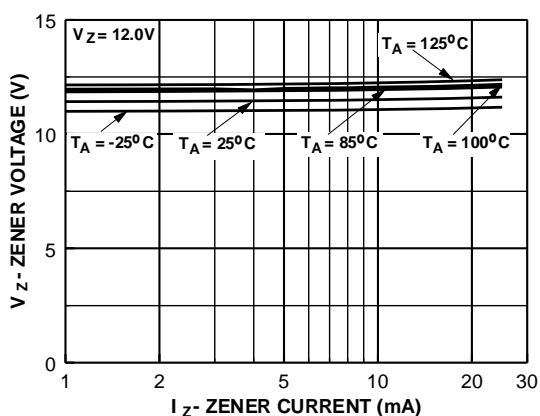
Zener Current vs. Zener Impedance



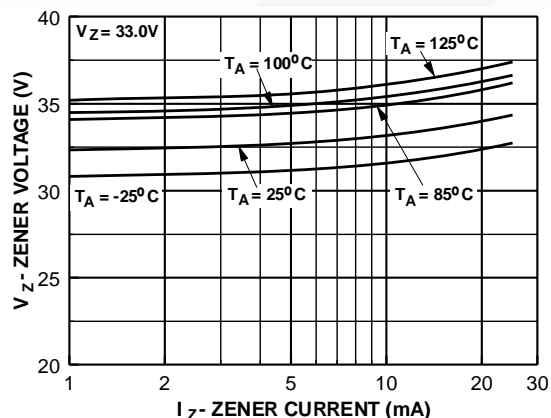
3.3 Zener Voltage vs. Temperature



5.1 Zener Voltage vs. Temperature



12 Zener Voltage vs. Zener Temperature








33 Zener Voltage vs. Zener Temperature



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