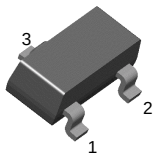
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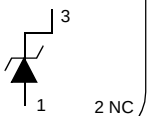
# Zeners
# MMBZ5221B-MMBZ5257B

**Tolerance = 5%**




**SOT-23**

**CONNECTION DIAGRAM**




## Absolute Maximum Ratings *

$T_A$ = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $P_D$ | Power Dissipation | 350 | mW |
| $T_{STG}$ | Storage Temperature Range | -55 to +150 | °C |
| $T_J$ | Operating Junction Temperature | +150 | °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°C unless otherwise noted

| Device | Mark | $V_Z$ (V) | $Z_Z(\Omega)$ @ $I_Z$ (mA) | | $Z_{ZK}(\Omega)$ @ $I_{ZK}$ (mA) | | $I_R$ (µA) @ $V_R$ (V) | |
|---|---|---|---|---|---|---|---|---|
| MMBZ5221B | 18A | 2.4 | 30 | 20 | 1,200 | 0.25 | 100 | 1.0 |
| MMBZ5223B | 18C | 2.7 | 30 | 20 | 1,300 | 0.25 | 75 | 1.0 |
| MMBZ5226B | 8A | 3.3 | 28 | 20 | 1,600 | 0.25 | 25 | 1.0 |
| MMBZ5227B | 8B | 3.6 | 24 | 20 | 1,700 | 0.25 | 15 | 1.0 |
| MMBZ5228B | 8C | 3.9 | 23 | 20 | 1,900 | 0.25 | 10 | 1.0 |
| MMBZ5229B | 8D | 4.3 | 22 | 20 | 1,000 | 0.25 | 5.0 | 1.0 |
| MMBZ5230B | 8E | 4.7 | 19 | 20 | 1,900 | 0.25 | 5.0 | 2.0 |
| MMBZ5231B | 8F | 5.1 | 17 | 20 | 1,600 | 0.25 | 5.0 | 2.0 |
| MMBZ5232B | 8G | 5.6 | 11 | 20 | 1,600 | 0.25 | 5.0 | 3.0 |
| MMBZ5233B | 8H | 6.0 | 7.0 | 20 | 1,600 | 0.25 | 5.0 | 3.5 |
| MMBZ5234B | 8J | 6.2 | 7.0 | 20 | 1,000 | 0.25 | 5.0 | 4.0 |
| MMBZ5235B | 8K | 6.8 | 5.0 | 20 | 750 | 0.25 | 3.0 | 5.0 |
| MMBZ5236B | 8L | 7.5 | 6.0 | 20 | 500 | 0.25 | 3.0 | 6.0 |
| MMBZ5237B | 8M | 8.2 | 8.0 | 20 | 500 | 0.25 | 3.0 | 6.5 |
| MMBZ5238B | 8N | 8.7 | 8.0 | 20 | 600 | 0.25 | 3.0 | 6.5 |
| MMBZ5239B | 8P | 9.1 | 10 | 20 | 600 | 0.25 | 3.0 | 7.0 |
| MMBZ5240B | 8Q | 10 | 17 | 20 | 600 | 0.25 | 3.0 | 8.0 |
| MMBZ5241B | 8R | 11 | 22 | 20 | 600 | 0.25 | 2.0 | 8.4 |
| MMBZ5242B | 8S | 12 | 30 | 20 | 600 | 0.25 | 1.0 | 8.1 |
| MMBZ5243B | 8T | 13 | 13 | 9.5 | 600 | 0.25 | 0.5 | 9.9 |
| MMBZ5244B | 8U | 14 | 15 | 9.0 | 600 | 0.25 | 0.1 | 10 |
| MMBZ5245B | 8V | 15 | 16 | 8.5 | 600 | 0.25 | 0.1 | 11 |
| MMBZ5246B | 8W | 16 | 17 | 7.8 | 600 | 0.25 | 0.1 | 12 |
| MMBZ5247B | 8X | 17 | 19 | 7.4 | 600 | 0.25 | 0.1 | 13 |

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

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## Electrical Characteristics

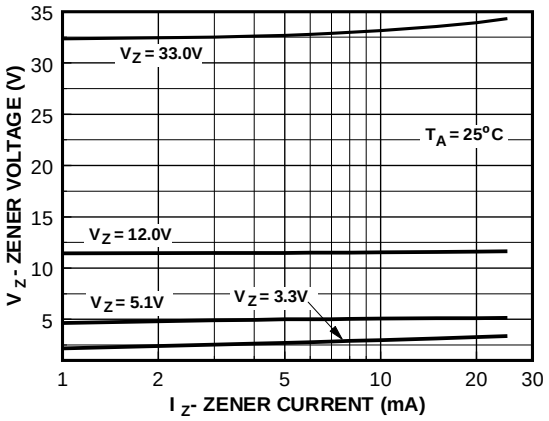
$T_A$=25°C unless otherwise noted

| Device | Mark | $V_Z$ (V) | $Z_Z$(Ω) @ $I_Z$ (mA) | | $Z_{ZK}$(Ω) @ $I_{ZK}$ (mA) | | $I_R$ (μA) @ $V_R$ (V) | |
|---|---|---|---|---|---|---|---|---|
| MMBZ5248B | 8Y | 18 | 21 | 7.0 | 600 | 0.25 | 0.1 | 14 |
| MMBZ5249B | 8Z | 19 | 23 | 6.6 | 600 | 0.25 | 0.1 | 14 |
| MMBZ5250B | 81A | 20 | 25 | 6.2 | 600 | 0.25 | 0.1 | 15 |
| MMBZ5251B | 81B | 22 | 29 | 5.6 | 600 | 0.25 | 0.1 | 17 |
| MMBZ5252B | 81C | 24 | 33 | 5.2 | 600 | 0.25 | 0.1 | 18 |
| MMBZ5253B | 81D | 25 | 35 | 5.0 | 600 | 0.25 | 0.1 | 19 |
| MMBZ5254B | 81E | 27 | 41 | 4.6 | 600 | 0.25 | 0.1 | 21 |
| MMBZ5255B | 81F | 28 | 44 | 4.5 | 600 | 0.25 | 0.1 | 21 |
| MMBZ5256B | 81G | 30 | 49 | 4.2 | 600 | 0.25 | 0.1 | 23 |
| MMBZ5257B | 81H | 33 | 58 | 3.8 | 600 | 0.25 | 0.1 | 25 |

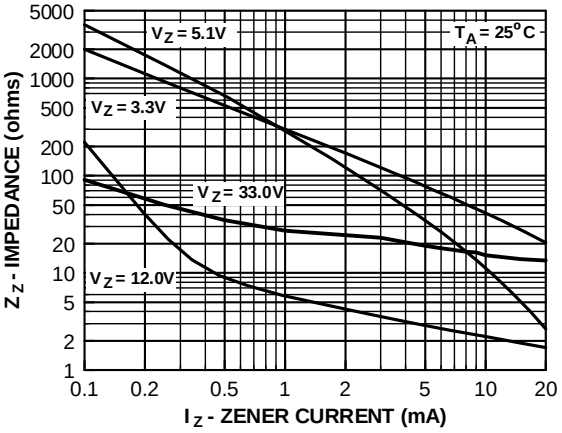
**$V_F$ Forward Voltage = 0.9V Maximum @ $I_F$ = 10mA for all MMBZ5200 series**

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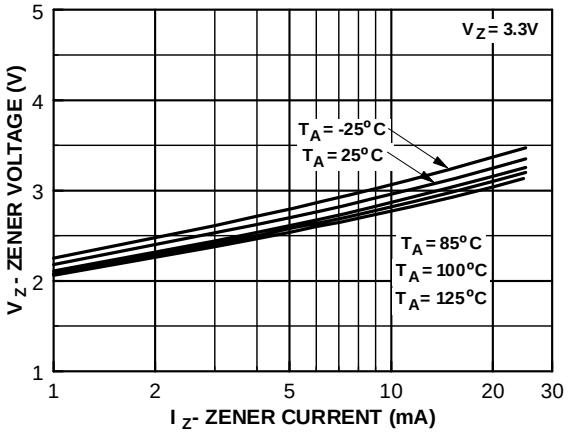
## Typical Characteristics



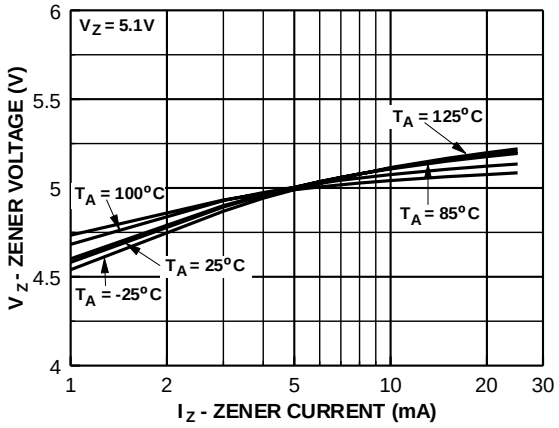

**Zener Current vs. Zener Voltage**



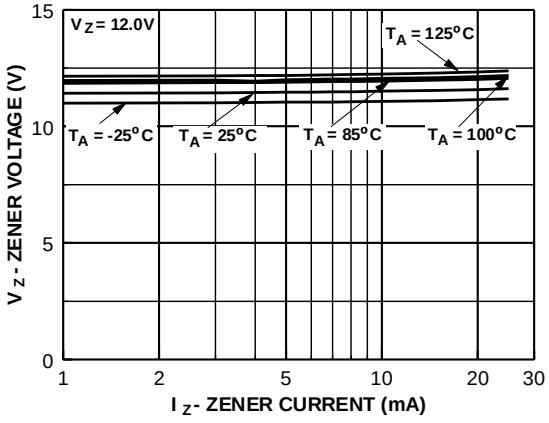

**Zener Current vs. Zener Impedence**



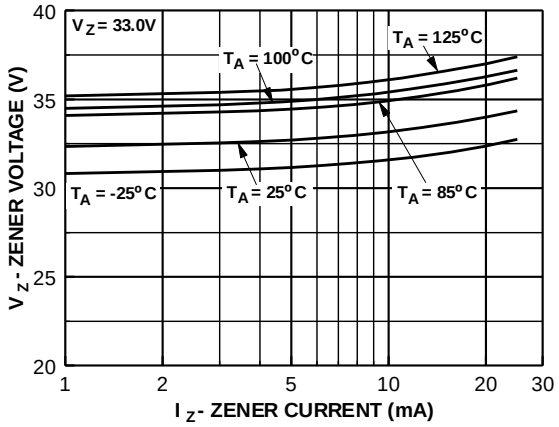

**3.3 Zener Voltage vs. Temperature**




**5.1 Zener Voltage vs. Temperature**




**12 Zener Voltage vs. Zener Temperature**




**33 Zener Voltage vs. Zener Temperature**

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