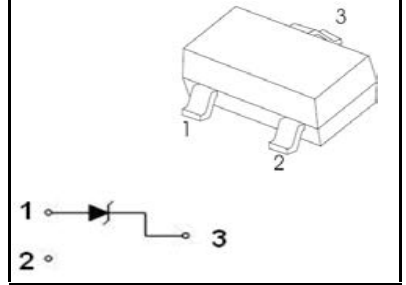


**SOT-23 Plastic-Encapsulate Diodes****MMBZ5221B-MMBZ5259B****Zener Diodes****SOT-23****FEATURES**

- Zener Voltages From 2.4V - 39V
- 300mW Power Dissipation
- Planar Die Construction

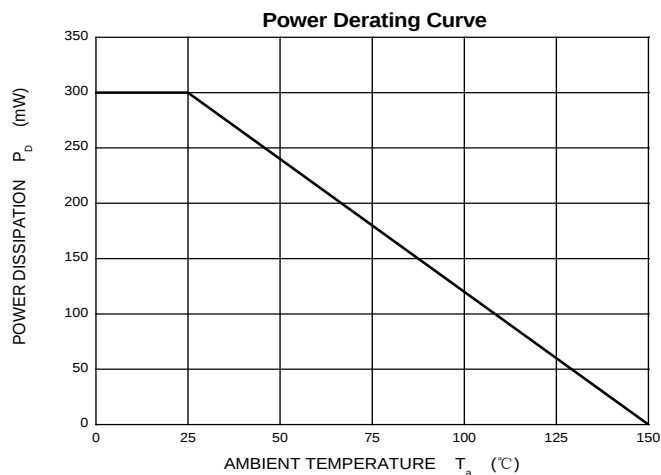
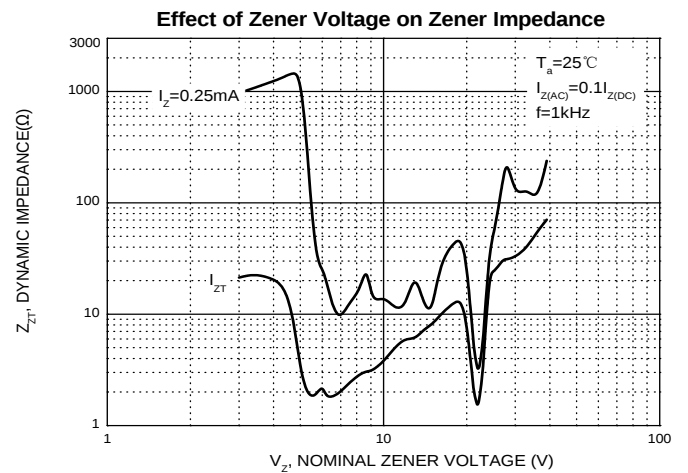
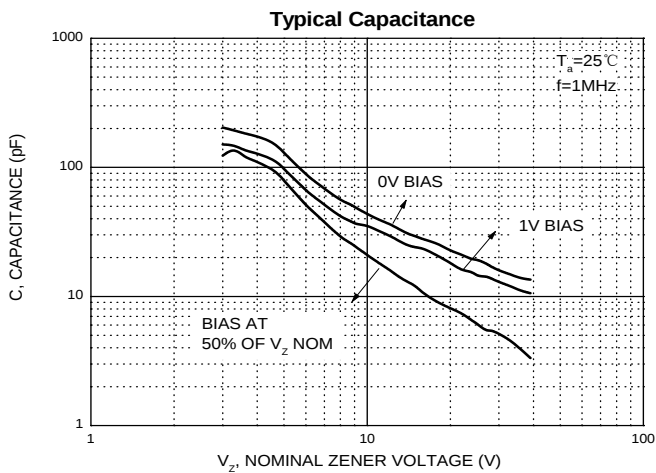
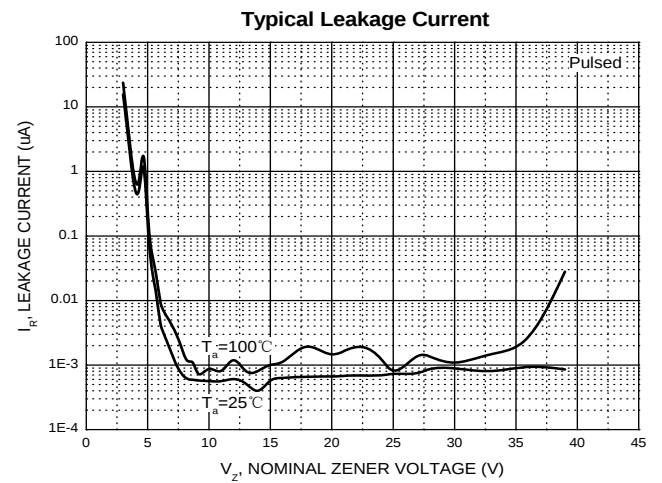
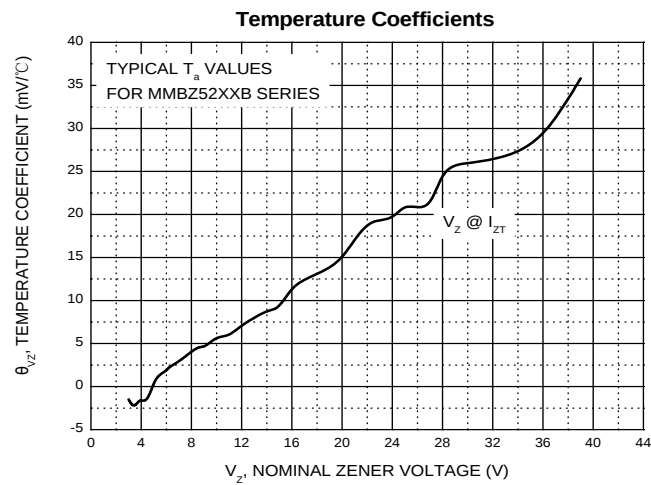
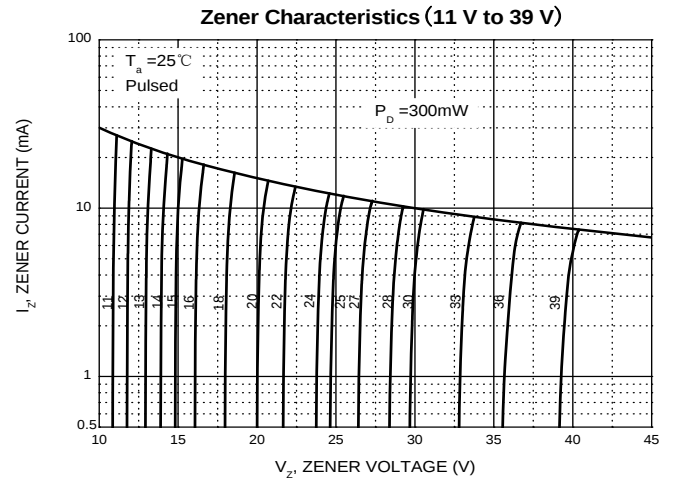
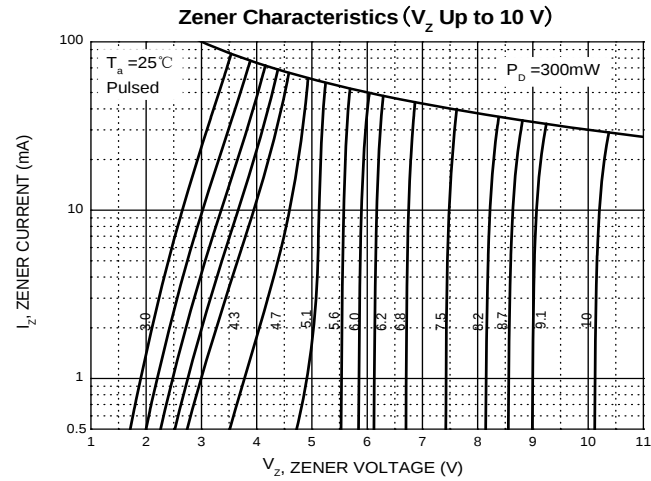
**MAXIMUM RATINGS** ( $T_a=25^{\circ}\text{C}$  unless otherwise noted)

| Characteristic                                   | Symbol          | Value     | Unit                 |
|--------------------------------------------------|-----------------|-----------|----------------------|
| Forward Voltage @ $I_F = 10\text{mA}$            | $V_F$           | 0.9       | V                    |
| Power Dissipation                                | $P_D$           | 300       | mW                   |
| Thermal Resistance from Junction to Ambient      | $R_{\theta JA}$ | 417       | $^{\circ}\text{C/W}$ |
| Operation Junction and Storage Temperature Range | $T_J, T_{STG}$  | -55~ +150 | $^{\circ}\text{C}$   |

**ELECTRICAL CHARACTERISTICS** ( $T_a=25^{\circ}\text{C}$  unless otherwise specified)

| Type Number | Marking Code | Zener Voltage Range              |         |         | Test Current    | Maximum Zener Impedance           |                                            | Maximum Reverse Leakage Current |                 |
|-------------|--------------|----------------------------------|---------|---------|-----------------|-----------------------------------|--------------------------------------------|---------------------------------|-----------------|
|             |              | V <sub>Z</sub> @ I <sub>ZT</sub> |         |         | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> = 0.25mA | I <sub>R</sub>                  | @V <sub>R</sub> |
|             |              | Nom (V)                          | Min (V) | Max (V) | mA              | Ω                                 |                                            | μA                              | V               |
| MMBZ5221B   | KC1          | 2.4                              | 2.28    | 2.52    | 20              | 30                                | 1200                                       | 100                             | 1.0             |
| MMBZ5222B   | KC2          | 2.5                              | 2.38    | 2.63    | 20              | 30                                | 1250                                       | 100                             | 1.0             |
| MMBZ5223B   | KC3          | 2.7                              | 2.57    | 2.84    | 20              | 30                                | 1300                                       | 75                              | 1.0             |
| MMBZ5225B   | KC5          | 3.0                              | 2.85    | 3.15    | 20              | 30                                | 1600                                       | 50                              | 1.0             |
| MMBZ5226B   | KG1          | 3.3                              | 3.14    | 3.47    | 20              | 28                                | 1600                                       | 25                              | 1.0             |
| MMBZ5227B   | KG2          | 3.6                              | 3.42    | 3.78    | 20              | 24                                | 1700                                       | 15                              | 1.0             |
| MMBZ5228B   | KG3          | 3.9                              | 3.71    | 4.10    | 20              | 23                                | 1900                                       | 10                              | 1.0             |
| MMBZ5229B   | KG4          | 4.3                              | 4.09    | 4.52    | 20              | 22                                | 2000                                       | 5.0                             | 1.0             |
| MMBZ5230B   | KG5          | 4.7                              | 4.47    | 4.94    | 20              | 19                                | 1900                                       | 5.0                             | 2.0             |
| MMBZ5231B   | KE1          | 5.1                              | 4.85    | 5.36    | 20              | 17                                | 1600                                       | 5.0                             | 2.0             |
| MMBZ5232B   | KE2          | 5.6                              | 5.32    | 5.88    | 20              | 11                                | 1600                                       | 5.0                             | 3.0             |
| MMBZ5233B   | KE3          | 6.0                              | 5.70    | 6.30    | 20              | 7                                 | 1600                                       | 5.0                             | 3.5             |
| MMBZ5234B   | KE4          | 6.2                              | 5.89    | 6.51    | 20              | 7                                 | 1000                                       | 5.0                             | 4.0             |
| MMBZ5235B   | KE5          | 6.8                              | 6.46    | 7.14    | 20              | 5                                 | 750                                        | 3.0                             | 5.0             |
| MMBZ5236B   | KF1          | 7.5                              | 7.13    | 7.88    | 20              | 6                                 | 500                                        | 3.0                             | 6.0             |
| MMBZ5237B   | KF2          | 8.2                              | 7.79    | 8.61    | 20              | 8                                 | 500                                        | 3.0                             | 6.5             |
| MMBZ5238B   | KF3          | 8.7                              | 8.27    | 9.14    | 20              | 8                                 | 600                                        | 3.0                             | 6.5             |
| MMBZ5239B   | KF4          | 9.1                              | 8.65    | 9.56    | 20              | 10                                | 600                                        | 3.0                             | 7.0             |
| MMBZ5240B   | KF5          | 10                               | 9.50    | 10.50   | 20              | 17                                | 600                                        | 3.0                             | 8.0             |
| MMBZ5241B   | KH1          | 11                               | 10.45   | 11.55   | 20              | 22                                | 600                                        | 2.0                             | 8.4             |
| MMBZ5242B   | KH2          | 12                               | 11.40   | 12.60   | 20              | 30                                | 600                                        | 1.0                             | 9.1             |
| MMBZ5243B   | KH3          | 13                               | 12.35   | 13.65   | 9.5             | 13                                | 600                                        | 0.5                             | 9.9             |
| MMBZ5244B   | KH4          | 14                               | 13.30   | 14.70   | 9.0             | 15                                | 600                                        | 0.1                             | 10              |
| MMBZ5245B   | KH5          | 15                               | 14.25   | 15.75   | 8.5             | 16                                | 600                                        | 0.1                             | 11              |
| MMBZ5246B   | KJ1          | 16                               | 15.20   | 16.80   | 7.8             | 17                                | 600                                        | 0.1                             | 12              |
| MMBZ5247B   | KJ2          | 17                               | 16.15   | 17.85   | 7.4             | 19                                | 600                                        | 0.1                             | 13              |
| MMBZ5248B   | KJ3          | 18                               | 17.10   | 18.90   | 7.0             | 21                                | 600                                        | 0.1                             | 14              |
| MMBZ5249B   | KJ4          | 19                               | 18.05   | 19.95   | 6.6             | 23                                | 600                                        | 0.1                             | 14              |
| MMBZ5250B   | KJ5          | 20                               | 19.00   | 21.00   | 6.2             | 25                                | 600                                        | 0.1                             | 15              |
| MMBZ5251B   | KK1          | 22                               | 20.90   | 23.10   | 5.6             | 29                                | 600                                        | 0.1                             | 17              |
| MMBZ5252B   | KK2          | 24                               | 22.80   | 25.20   | 5.2             | 33                                | 600                                        | 0.1                             | 18              |
| MMBZ5253B   | KK3          | 25                               | 23.75   | 26.25   | 5.0             | 35                                | 600                                        | 0.1                             | 19              |
| MMBZ5254B   | KK4          | 27                               | 25.65   | 28.35   | 5.0             | 41                                | 600                                        | 0.1                             | 21              |
| MMBZ5255B   | KK5          | 28                               | 26.60   | 29.40   | 4.5             | 44                                | 600                                        | 0.1                             | 21              |
| MMBZ5256B   | KM1          | 30                               | 28.50   | 31.50   | 4.2             | 49                                | 600                                        | 0.1                             | 23              |
| MMBZ5257B   | KM2          | 33                               | 31.35   | 34.65   | 3.8             | 58                                | 700                                        | 0.1                             | 25              |
| MMBZ5258B   | KM3          | 36                               | 34.20   | 37.80   | 3.4             | 70                                | 700                                        | 0.1                             | 27              |
| MMBZ5259B   | KM4          | 39                               | 37.05   | 40.95   | 3.2             | 80                                | 800                                        | 0.1                             | 30              |

## Typical Characteristics



Package Outline Dimensions (SOT-23)



| Symbol   | Dimensions In Millimeters |       | Dimensions In Inches |       |
|----------|---------------------------|-------|----------------------|-------|
|          | Min                       | Max   | Min                  | Max   |
| A        | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1       | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2       | 0.900                     | 1.050 | 0.035                | 0.041 |
| b        | 0.300                     | 0.500 | 0.012                | 0.020 |
| c        | 0.080                     | 0.150 | 0.003                | 0.006 |
| D        | 2.800                     | 3.000 | 0.110                | 0.118 |
| E        | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1       | 2.250                     | 2.550 | 0.089                | 0.100 |
| e        | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1       | 1.800                     | 2.000 | 0.071                | 0.079 |
| L        | 0.550 REF                 |       | 0.022 REF            |       |
| L1       | 0.300                     | 0.500 | 0.012                | 0.020 |
| $\theta$ | 0°                        | 8°    | 0°                   | 8°    |

Suggested Pad Layout (SOT-23)



Note:  
1.Controlling dimension:in millimeters.  
2.General tolerance:± 0.05mm.  
3.The pad layout is for reference purposes only.