

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- Planar Die Construction
- 300 mW Power Dissipation on FR-4 PCB
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Process

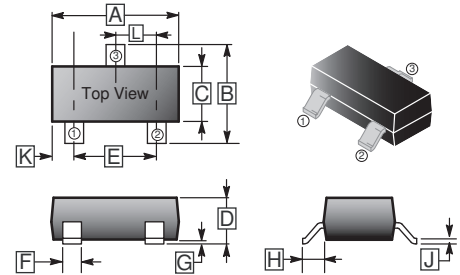
MECHANICAL DATA

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams
- Weight: 0.008 grams (approx.)
- Marking : Marking Code (See Table On Page 2)

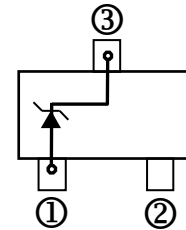
PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOT-23 | 3K | 7 inch |

SOT-23



| REF. | Millimeter | | REF. | Millimeter | |
|------|------------|------|------|------------|-------|
| | Min. | Max. | | Min. | Max. |
| A | 2.80 | 3.04 | G | 0.09 | 0.18 |
| B | 2.10 | 2.55 | H | 0.45 | 0.60 |
| C | 1.20 | 1.40 | J | 0.08 | 0.177 |
| D | 0.89 | 1.15 | K | 0.6 REF. | |
| E | 1.78 | 2.04 | L | 0.89 | 1.02 |
| F | 0.30 | 0.50 | | | |



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| Parameter | Symbol | Ratings | Unit |
|---|-----------|---------|------------------|
| Maximum Forward Voltage Diode at $I_F = 100 \text{ mA}$ | V_F | 1.0 | V |
| Maximum Power Dissipation @ 25°C ¹ | P_D | 300 | mW |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) ² | I_{FSM} | 4.0 | A |
| Operating Junction and Storage Temperature Range | T_J | -55~150 | $^\circ\text{C}$ |

Note:

1. Mounted on 5.0 mm^2 (.013mm thick) land areas. 2. Alumina = $0.4 \times 0.3 \times 0.024 \text{ in}$. 99.5% alumina.
2. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

ELECTRICAL RATINGS (Rating 25°C ambient temperature unless otherwise specified)

| Part Number | Marking Code | Nominal Zener Voltage | | | Max. Zener Impedance | | | | Max. Reverse Leakage Current | |
|----------------------------|----------------|----------------------------------|---------|---------|-----------------------------------|------|-----------------------------------|------|---------------------------------|------|
| | | V _Z @ I _{ZT} | | | Z _{ZT} @ I _{ZT} | | Z _{ZK} @ I _{ZK} | | I _R @ V _R | |
| | | Nom (V) | Min (V) | Max (V) | Ω | mA | Ω | mA | μA | V |
| 300 mW Zener Diodes | | | | | | | | | | |
| MMBZ5221B | C1 / KC1 / 18A | 2.4 | 2.28 | 2.52 | 30 | 20.0 | 1200 | 0.25 | 100 | 1.0 |
| MMBZ5222B | C2 / KC2 / 18B | 2.5 | 2.38 | 2.63 | 30 | 20.0 | 1250 | 0.25 | 100 | 1.0 |
| MMBZ5223B | C3 / KC3 / 18C | 2.7 | 2.57 | 2.84 | 30 | 20.0 | 1300 | 0.25 | 75 | 1.0 |
| MMBZ5224B | 18D | 2.8 | 2.66 | 2.94 | 30 | 20.0 | 1400 | 0.25 | 75 | 1.0 |
| MMBZ5225B | C5 / KC5 / 18E | 3 | 2.85 | 3.15 | 30 | 20.0 | 1600 | 0.25 | 50 | 1.0 |
| MMBZ5226B | D1 / KG1 / 8A | 3.3 | 3.14 | 3.47 | 28 | 20.0 | 1600 | 0.25 | 25 | 1.0 |
| MMBZ5227B | D2 / KG2 / 8B | 3.6 | 3.42 | 3.78 | 24 | 20.0 | 1700 | 0.25 | 15 | 1.0 |
| MMBZ5228B | D3 / KG3 / 8C | 3.9 | 3.71 | 4.10 | 23 | 20.0 | 1900 | 0.25 | 10 | 1.0 |
| MMBZ5229B | D4 / KG4 / 8D | 4.3 | 4.09 | 4.52 | 22 | 20.0 | 2000 | 0.25 | 5.0 | 1.0 |
| MMBZ5230B | D5 / KG5 / 8E | 4.7 | 4.47 | 4.94 | 19 | 20.0 | 1900 | 0.25 | 5.0 | 2.0 |
| MMBZ5231B | E1 / KE1 / 8F | 5.1 | 4.85 | 5.36 | 17 | 20.0 | 1600 | 0.25 | 5.0 | 2.0 |
| MMBZ5232B | E2 / KE2 / 8G | 5.6 | 5.32 | 5.88 | 11 | 20.0 | 1600 | 0.25 | 5.0 | 3.0 |
| MMBZ5233B | E3 / KE3 / 8H | 6 | 5.7 | 6.3 | 7 | 20.0 | 1600 | 0.25 | 5.0 | 3.5 |
| MMBZ5234B | 8J / KE4 / 8J | 6.2 | 5.89 | 6.51 | 7 | 20.0 | 1000 | 0.25 | 5.0 | 4.0 |
| MMBZ5235B | E5 / KE5 / 8K | 6.8 | 6.46 | 7.14 | 5 | 20.0 | 750 | 0.25 | 3.0 | 5.0 |
| MMBZ5236B | F1 / KF1 / 8L | 7.5 | 7.13 | 7.88 | 6 | 20.0 | 500 | 0.25 | 3.0 | 6.0 |
| MMBZ5237B | F2 / KF2 / 8M | 8.2 | 7.79 | 8.61 | 8 | 20.0 | 500 | 0.25 | 3.0 | 6.0 |
| MMBZ5238B | F3 / KF3 / 8N | 8.7 | 8.27 | 9.14 | 8 | 20.0 | 600 | 0.25 | 3.0 | 6.5 |
| MMBZ5239B | F4 / KF4 / 8P | 9.1 | 8.65 | 9.56 | 10 | 20.0 | 600 | 0.25 | 3.0 | 6.5 |
| MMBZ5240B | F5 / KF5 / 8Q | 10 | 9.50 | 10.50 | 17 | 20.0 | 600 | 0.25 | 3.0 | 8.0 |
| MMBZ5241B | H1 / KH1 / 8R | 11 | 10.45 | 11.55 | 22 | 20.0 | 600 | 0.25 | 3.0 | 8.4 |
| MMBZ5242B | H2 / KH2 / 8S | 12 | 11.40 | 12.60 | 30 | 20.0 | 600 | 0.25 | 2.0 | 9.1 |
| MMBZ5243B | H3 / KH3 / 8T | 13 | 12.35 | 13.65 | 13 | 9.5 | 600 | 0.25 | 1.0 | 9.9 |
| MMBZ5244B | 8U | 14 | 13.30 | 14.70 | 15 | 9 | 600 | 0.25 | 0.1 | 10 |
| MMBZ5245B | H5 / KH5 / 8V | 15 | 14.25 | 15.75 | 16 | 8.5 | 600 | 0.25 | 0.5 | 11.0 |
| MMBZ5246B | J1 / KJ1 / 8W | 16 | 15.20 | 16.80 | 17 | 7.8 | 600 | 0.25 | 0.1 | 12.0 |
| MMBZ5247B | J2 / 8X | 17 | 16.15 | 17.85 | 19 | 7.4 | 600 | 0.25 | 0.1 | 13.0 |
| MMBZ5248B | J3 / KJ3 / 8Y | 18 | 17.10 | 18.90 | 21 | 7.0 | 600 | 0.25 | 0.1 | 14.0 |
| MMBZ5249B | J4 / 8Z | 19 | 18.05 | 19.95 | 23 | 6.6 | 600 | 0.25 | 0.1 | 14.0 |

ELECTRICAL RATINGS (Rating 25°C ambient temperature unless otherwise specified)

| Part Number | Marking Code | Nominal Zener Voltage | | | Max. Zener Impedance | | | | Max. Reverse Leakage Current | |
|----------------------------|----------------|----------------------------------|---------|---------|-----------------------------------|-----|-----------------------------------|------|---------------------------------|------|
| | | V _Z @ I _{ZT} | | | Z _{ZT} @ I _{ZT} | | Z _{ZK} @ I _{ZK} | | I _R @ V _R | |
| | | Nom (V) | Min (V) | Max (V) | Ω | mA | Ω | mA | μA | V |
| 300 mW Zener Diodes | | | | | | | | | | |
| MMBZ5250B | J5 / KJ5 / 81A | 20 | 19.00 | 21.00 | 25 | 6.2 | 600 | 0.25 | 0.1 | 15.0 |
| MMBZ5251B | K1 / KK1 / 81B | 22 | 20.90 | 23.10 | 29 | 5.6 | 600 | 0.25 | 0.1 | 17.0 |
| MMBZ5252B | K2 / KK2 / 81C | 24 | 22.80 | 25.20 | 33 | 5.2 | 600 | 0.25 | 0.1 | 18.0 |
| MMBZ5253B | K3 / KK3 / 81D | 25 | 23.75 | 26.25 | 35 | 5 | 600 | 0.25 | 0.1 | 19.0 |
| MMBZ5254B | K4 / KK4 / 81E | 27 | 25.65 | 28.35 | 41 | 5.0 | 600 | 0.25 | 0.1 | 21.0 |
| MMBZ5255B | K5 / KK5 / 81F | 28 | 26.60 | 29.40 | 44 | 4.5 | 600 | 0.25 | 0.1 | 21.0 |
| MMBZ5256B | M1 / KM1 / 81G | 30 | 28.50 | 31.50 | 49 | 4.2 | 600 | 0.25 | 0.1 | 23.0 |
| MMBZ5257B | M2 / KM2 / 81H | 33 | 31.35 | 34.65 | 58 | 3.8 | 700 | 0.25 | 0.1 | 25.0 |
| MMBZ5258B | M3 / KM3 / 81J | 36 | 34.20 | 37.80 | 70 | 3.4 | 700 | 0.25 | 0.1 | 27.0 |
| MMBZ5259B | M4 / KM4 / 81K | 39 | 37.05 | 40.95 | 80 | 3.2 | 800 | 0.25 | 0.1 | 30.0 |

CHARACTERISTIC CURVES

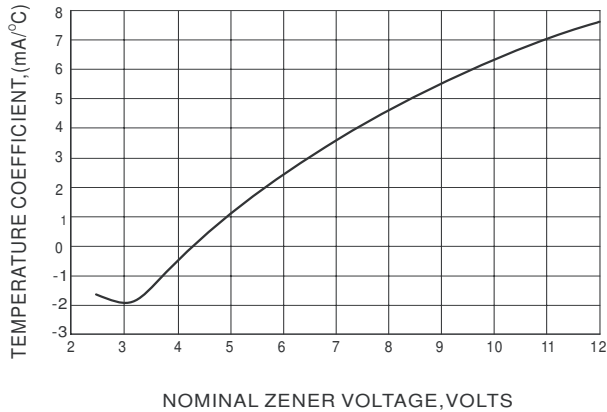


Fig.1 TEMPERATURE COEFFICIENTS

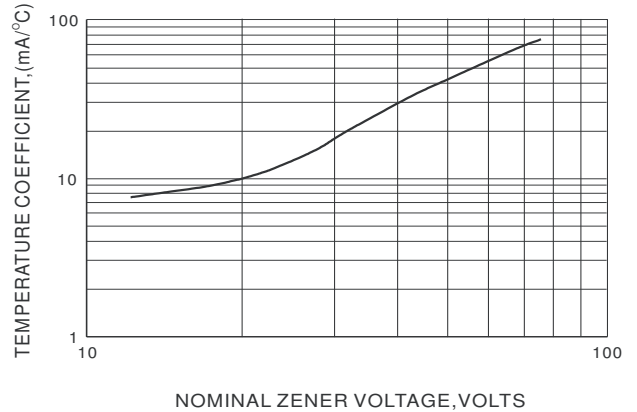


Fig.2 TEMPERATURE COEFFICIENTS

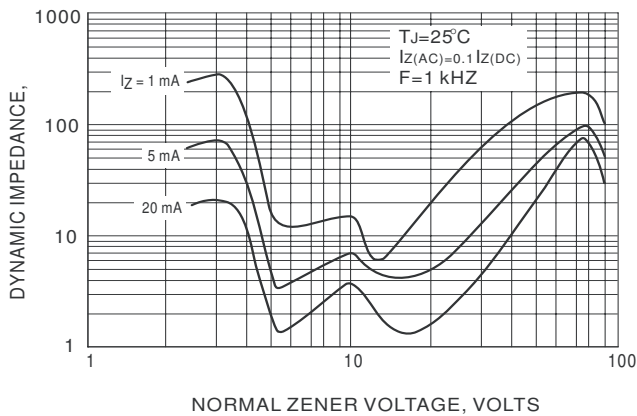


Fig.3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

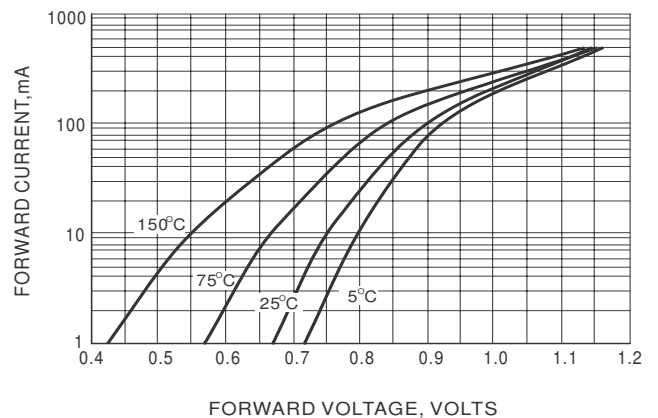


Fig.4 TYPICAL FORWARD VOLTAGE

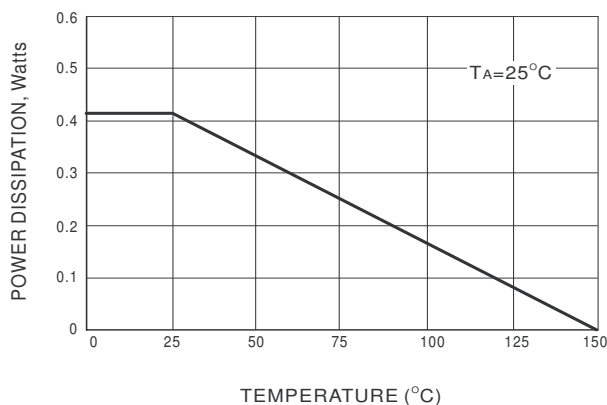


Fig.5 STEADY STATE POWER DERATING

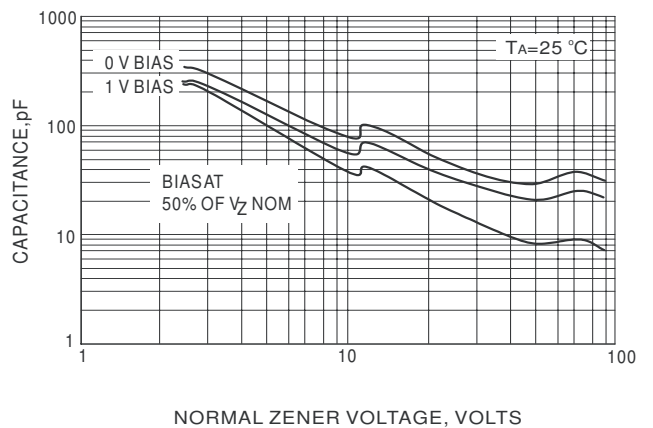


Fig.6 TYPICAL CAPACITANCE

CHARACTERISTIC CURVES (cont'd)

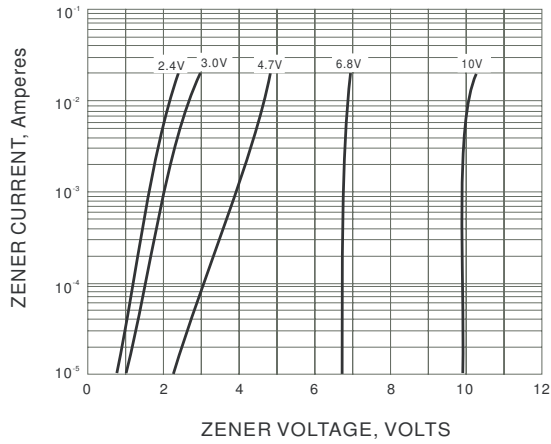


Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

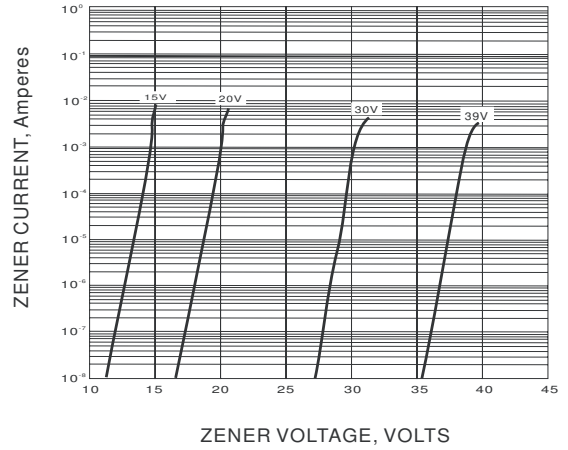


Fig.8 ZENER VOLTAGE VERSUS ZENER CURRENT

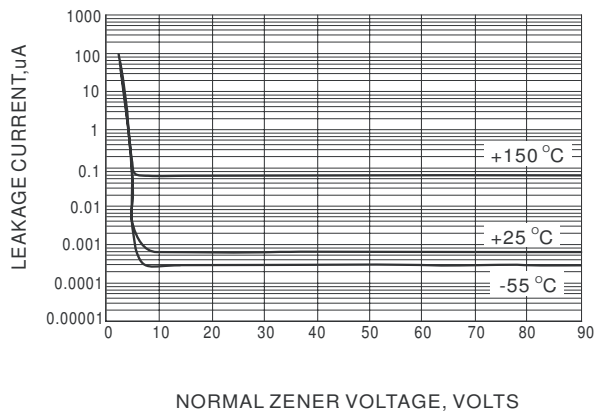


Fig.9 TYPICAL LEAKAGE CURRENT