



## MMBZ5229A SERIES

### SURFACE MOUNT SILICON ZENER DIODES

**VOLTAGE** 4.3 to 51 Volts **POWER** 410 mWatts

#### FEATURES

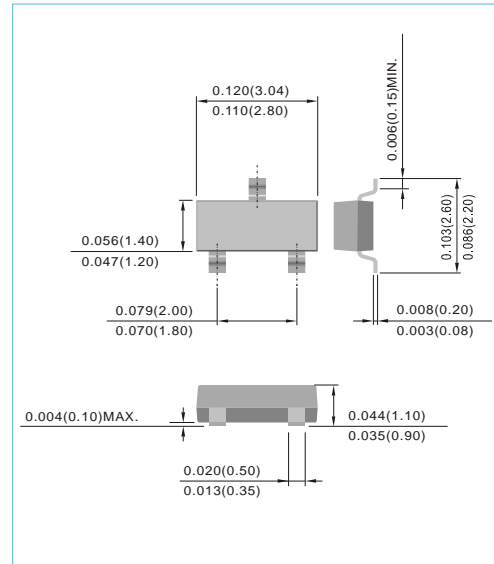
- Planar Die construction
- 410mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- In compliance with EU RoHS 2002/95/EC directives

#### MECHANICAL DATA

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: See Diagram Below
- Approx. Weight: 0.0048 grams
- Mounting Position: Any

#### SOT-23

Unit : inch(mm)

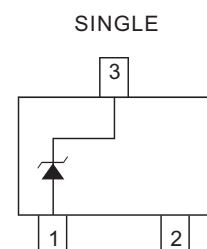


### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| Parameter  | Symbol         | Value       | Units |
|--|----------------|-------------|-------|
| Maximum Power Dissipation (Notes A) at 25°C      | P <sub>D</sub> | 410         | mW    |
| Operating Junction and Storage Temperature Range | T <sub>J</sub> | -55 to +150 | °C    |

#### NOTES:

A. Mounted on 5.0mm<sup>2</sup>(.013mm thick) land areas.





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| Part Number | Nominal Zener Voltage            |        |        | Max. Zener Impedance              |      |                                   |      | Max. Reverse Leakage Current    |      | Marking Code |
|-------------|----------------------------------|--------|--------|-----------------------------------|------|-----------------------------------|------|---------------------------------|------|--------------|
|             | V <sub>Z</sub> @ I <sub>ZT</sub> |        |        | Z <sub>TT</sub> @ I <sub>ZT</sub> |      | Z <sub>ZK</sub> @ I <sub>ZK</sub> |      | I <sub>R</sub> @ V <sub>R</sub> |      |              |
|             | Nom. V                           | Min. V | Max. V | Ω                                 | mA   | Ω                                 | mA   | μA                              | V    |              |
| MMBZ5229A   | 4.3                              | 4.21   | 4.39   | 22                                | 20.0 | 2000                              | 0.25 | 5.0                             | 1.0  | D4           |
| MMBZ5230A   | 4.7                              | 4.61   | 4.79   | 19                                | 20.0 | 1900                              | 0.25 | 5.0                             | 2.0  | D5           |
| MMBZ5231A   | 5.1                              | 5.00   | 5.20   | 17                                | 20.0 | 1600                              | 0.25 | 5.0                             | 2.0  | E1           |
| MMBZ5232A   | 5.6                              | 5.49   | 5.71   | 11                                | 20.0 | 1600                              | 0.25 | 5.0                             | 3.0  | E2           |
| MMBZ5233A   | 6.0                              | 5.88   | 6.12   | 7                                 | 20.0 | 1600                              | 0.25 | 5.0                             | 3.5  | E3           |
| MMBZ5234A   | 6.2                              | 6.08   | 6.32   | 7                                 | 20.0 | 1000                              | 0.25 | 5.0                             | 4.0  | E4           |
| MMBZ5235A   | 6.8                              | 6.66   | 6.94   | 5                                 | 20.0 | 750                               | 0.25 | 3.0                             | 5.0  | E5           |
| MMBZ5236A   | 7.5                              | 7.35   | 7.65   | 6                                 | 20.0 | 500                               | 0.25 | 3.0                             | 6.0  | F1           |
| MMBZ5237A   | 8.2                              | 8.04   | 8.36   | 8                                 | 20.0 | 500                               | 0.25 | 3.0                             | 6.0  | F2           |
| MMBZ5238A   | 8.7                              | 8.53   | 8.87   | 8                                 | 20.0 | 600                               | 0.25 | 3.0                             | 6.5  | F3           |
| MMBZ5239A   | 9.1                              | 8.92   | 9.28   | 10                                | 20.0 | 600                               | 0.25 | 3.0                             | 6.5  | F4           |
| MMBZ5240A   | 10                               | 9.80   | 10.20  | 17                                | 20.0 | 600                               | 0.25 | 3.0                             | 8.0  | F5           |
| MMBZ5241A   | 11                               | 10.78  | 11.22  | 22                                | 20.0 | 600                               | 0.25 | 2.0                             | 8.4  | H1           |
| MMBZ5242A   | 12                               | 11.76  | 12.24  | 30                                | 20.0 | 600                               | 0.25 | 1.0                             | 9.1  | H2           |
| MMBZ5243A   | 13                               | 12.74  | 13.26  | 13                                | 9.5  | 600                               | 0.25 | 0.5                             | 9.9  | H3           |
| MMBZ5244A   | 14                               | 13.72  | 14.28  | 15                                | 9.0  | 600                               | 0.25 | 0.1                             | 10.5 | H4           |
| MMBZ5245A   | 15                               | 14.70  | 15.30  | 16                                | 8.5  | 600                               | 0.25 | 0.1                             | 11.0 | H5           |
| MMBZ5246A   | 16                               | 15.68  | 16.32  | 17                                | 7.8  | 600                               | 0.25 | 0.1                             | 12.0 | J1           |
| MMBZ5247A   | 17                               | 16.66  | 17.34  | 19                                | 7.5  | 600                               | 0.25 | 0.1                             | 13.0 | J2           |
| MMBZ5248A   | 18                               | 17.64  | 18.36  | 21                                | 7.0  | 600                               | 0.25 | 0.1                             | 14.0 | J3           |
| MMBZ5249A   | 19                               | 18.62  | 19.38  | 23                                | 6.6  | 600                               | 0.25 | 0.1                             | 14.0 | J4           |
| MMBZ5250A   | 20                               | 19.60  | 20.40  | 25                                | 6.2  | 600                               | 0.25 | 0.1                             | 15.0 | J5           |
| MMBZ5251A   | 22                               | 21.56  | 22.44  | 29                                | 5.6  | 600                               | 0.25 | 0.1                             | 17.0 | K1           |
| MMBZ5252A   | 24                               | 23.52  | 24.48  | 33                                | 5.2  | 600                               | 0.25 | 0.1                             | 18.0 | K2           |
| MMBZ5253A   | 25                               | 24.50  | 25.50  | 35                                | 5.0  | 600                               | 0.25 | 0.1                             | 19.0 | K3           |
| MMBZ5254A   | 27                               | 26.46  | 27.54  | 41                                | 5.0  | 600                               | 0.25 | 0.1                             | 21.0 | K4           |
| MMBZ5255A   | 28                               | 27.44  | 28.56  | 44                                | 4.5  | 600                               | 0.25 | 0.1                             | 21.0 | K5           |
| MMBZ5256A   | 30                               | 29.40  | 30.60  | 49                                | 4.2  | 600                               | 0.25 | 0.1                             | 23.0 | M1           |
| MMBZ5257A   | 33                               | 32.34  | 33.66  | 58                                | 3.8  | 700                               | 0.25 | 0.1                             | 25.0 | M2           |
| MMBZ5258A   | 36                               | 35.28  | 36.72  | 70                                | 3.4  | 700                               | 0.25 | 0.1                             | 27.0 | M3           |
| MMBZ5259A   | 39                               | 38.22  | 39.78  | 80                                | 3.2  | 800                               | 0.25 | 0.1                             | 30.0 | M4           |
| MMBZ5260A   | 43                               | 42.14  | 43.86  | 93                                | 3    | 900                               | 0.25 | 0.1                             | 33.0 | M5           |
| MMBZ5261A   | 47                               | 46.06  | 47.94  | 105                               | 2.7  | 1000                              | 0.25 | 0.1                             | 36.0 | N1           |
| MMBZ5262A   | 51                               | 49.98  | 52.02  | 125                               | 2.5  | 1100                              | 0.25 | 0.1                             | 39.0 | N2           |



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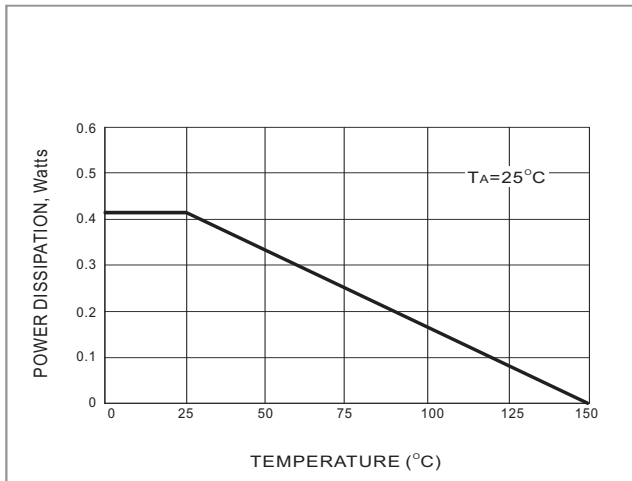


Fig.1 STEADY STATE POWER DERATING

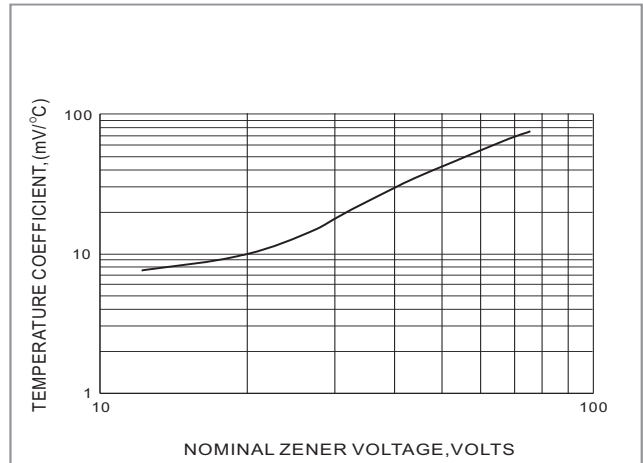


Fig.2 TEMPERATURE COEFFICIENTS

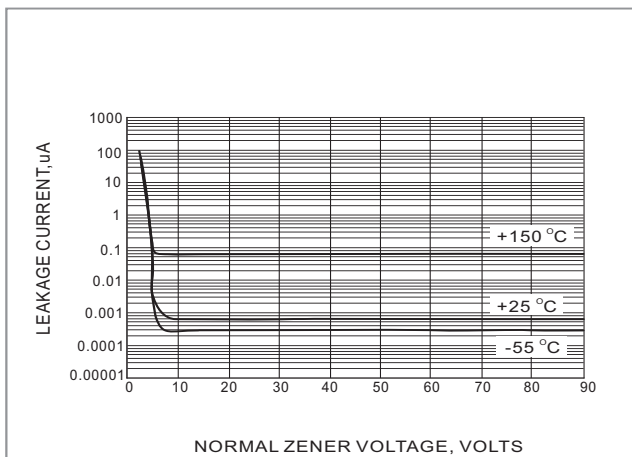


Fig.3 TYPICAL LEAKAGE CURRENT

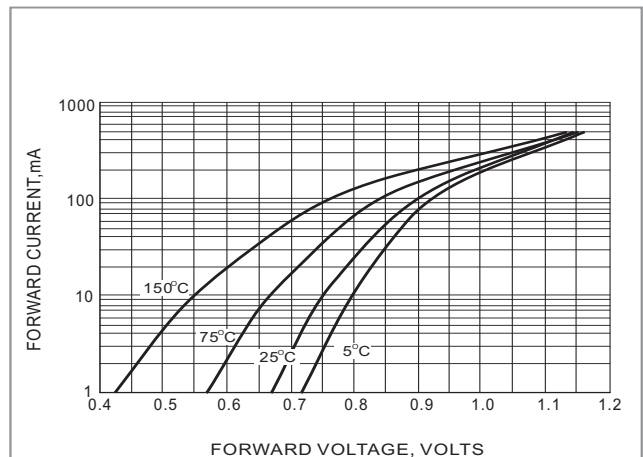
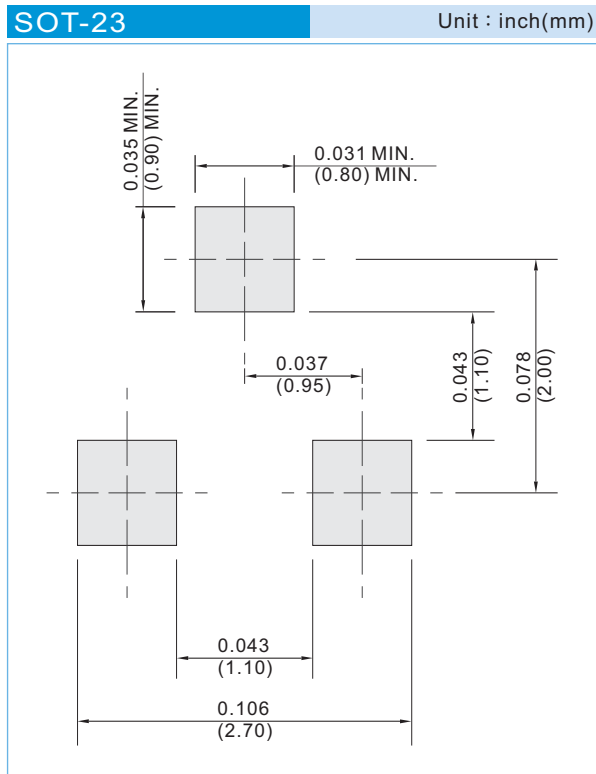


Fig.4 TYPICAL FORWARD VOLTAGE



## MMBZ5229A SERIES

### MOUNTING PAD LAYOUT



### ORDER INFORMATION

- Packing information
  - T/R - 12K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel

### LEGAL STATEMENT

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