

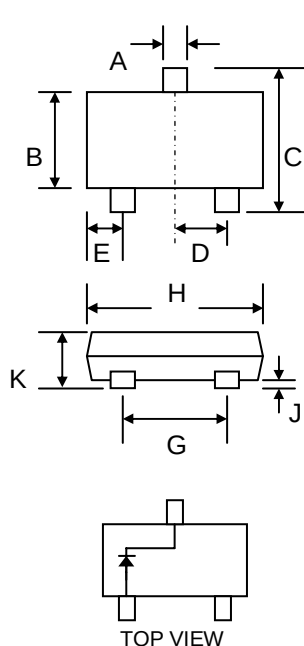
## 200mW SURFACE MOUNT ZENER DIODE

### Features

- Planar Die Construction
- 200mW Power Dissipation
- 2.4 – 51V Nominal Zener Voltage
- 5% Standard Vz Tolerance
- Designed for Surface Mount Application
- Plastic Material – UL Recognition Flammability Classification 94V-O

### Mechanical Data

- Case: SOT-323, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.006 grams (approx.)
- Mounting Position: Any
- Marking: Device Code, See Page 2
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 4**



| SOT-323              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 0.30         | 0.40 |
| B                    | 1.15         | 1.35 |
| C                    | 2.00         | 2.20 |
| D                    | 0.65 Nominal |      |
| E                    | 0.30         | 0.40 |
| G                    | 1.20         | 1.40 |
| H                    | 1.80         | 2.20 |
| J                    | —            | 0.10 |
| K                    | 0.90         | 1.10 |
| L                    | 0.25         | —    |
| M                    | 0.05         | 0.15 |
| All Dimensions in mm |              |      |

### Maximum Ratings @T<sub>A</sub>=25°C unless otherwise specified

| Characteristic                                                 | Symbol                            | Value       | Unit |
|----------------------------------------------------------------|-----------------------------------|-------------|------|
| Peak Pulse Power Dissipation at T <sub>A</sub> = 25°C (Note 1) | P <sub>d</sub>                    | 200         | mW   |
| Forward Voltage @ I <sub>F</sub> = 10mA                        | V <sub>F</sub>                    | 0.9         | V    |
| Thermal Resistance Junction to Ambient (Note 1)                | R <sub>θJA</sub>                  | 625         | °C/W |
| Operating and Storage Temperature Range                        | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

Note: 1. Valid provided that device terminals are kept at ambient temperature.

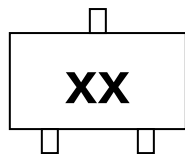
## Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

| Type Number<br>(Note 1) | Device Marking Code | Zener Voltage Range<br>(Note 2)  |         |         | Maximum Zener Impedance<br>(Note 3) |      |                                   |      | Max Reverse Leakage Current |                  | Typical Temp. Coefficient of Zener Voltage |
|-------------------------|---------------------|----------------------------------|---------|---------|-------------------------------------|------|-----------------------------------|------|-----------------------------|------------------|--------------------------------------------|
|                         |                     | V <sub>Z</sub> @ I <sub>ZT</sub> |         |         | Z <sub>zT</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)              |                                            |
| MMBZ5221BW              | C1                  | 2.4                              | 2.28    | 2.52    | 30                                  | 20   | 1200                              | 0.25 | 100                         | 1.0              | -0.075                                     |
| MMBZ5222BW              | C2                  | 2.5                              | 2.38    | 2.63    | 30                                  | 20   | 1250                              | 0.25 | 100                         | 1.0              | -0.075                                     |
| MMBZ5223BW              | C3                  | 2.7                              | 2.57    | 2.84    | 30                                  | 20   | 1300                              | 0.25 | 75                          | 1.0              | -0.075                                     |
| MMBZ5225BW              | C5                  | 3.0                              | 2.85    | 3.15    | 30                                  | 20   | 1600                              | 0.25 | 50                          | 1.0              | -0.075                                     |
| MMBZ5226BW              | D1                  | 3.3                              | 3.14    | 3.47    | 28                                  | 20   | 1600                              | 0.25 | 25                          | 1.0              | -0.070                                     |
| MMBZ5227BW              | D2                  | 3.6                              | 3.42    | 3.78    | 24                                  | 20   | 1700                              | 0.25 | 15                          | 1.0              | -0.065                                     |
| MMBZ5228BW              | D3                  | 3.9                              | 3.71    | 4.10    | 23                                  | 20   | 1900                              | 0.25 | 10                          | 1.0              | -0.060                                     |
| MMBZ5229BW              | D4                  | 4.3                              | 4.09    | 4.52    | 22                                  | 20   | 2000                              | 0.25 | 5.0                         | 1.0              | -0.055                                     |
| MMBZ5230BW              | D5                  | 4.7                              | 4.47    | 4.94    | 19                                  | 20   | 1900                              | 0.25 | 5.0                         | 2.0              | ±0.030                                     |
| MMBZ5231BW              | E1                  | 5.1                              | 4.85    | 5.36    | 17                                  | 20   | 1600                              | 0.25 | 5.0                         | 2.0              | ±0.030                                     |
| MMBZ5232BW              | E2                  | 5.6                              | 5.32    | 5.88    | 11                                  | 20   | 1600                              | 0.25 | 5.0                         | 3.0              | +0.038                                     |
| MMBZ5234BW              | E4                  | 6.2                              | 5.89    | 6.51    | 7.0                                 | 20   | 1000                              | 0.25 | 5.0                         | 4.0              | +0.045                                     |
| MMBZ5235BW              | E5                  | 6.8                              | 6.46    | 7.14    | 5.0                                 | 20   | 750                               | 0.25 | 3.0                         | 5.0              | +0.050                                     |
| MMBZ5236BW              | F1                  | 7.5                              | 7.13    | 7.88    | 6.0                                 | 20   | 500                               | 0.25 | 3.0                         | 6.0              | +0.058                                     |
| MMBZ5237BW              | F2                  | 8.2                              | 7.79    | 8.61    | 8.0                                 | 20   | 500                               | 0.25 | 3.0                         | 6.0              | +0.062                                     |
| MMBZ5239BW              | F4                  | 9.1                              | 8.65    | 9.56    | 10                                  | 20   | 600                               | 0.25 | 3.0                         | 6.5              | +0.068                                     |
| MMBZ5240BW              | F5                  | 10                               | 9.50    | 10.50   | 17                                  | 20   | 600                               | 0.25 | 3.0                         | 8.0              | +0.075                                     |
| MMBZ5241BW              | H1                  | 11                               | 10.45   | 11.55   | 22                                  | 20   | 600                               | 0.25 | 3.0                         | 8.4              | +0.076                                     |
| MMBZ5242BW              | H2                  | 12                               | 11.40   | 12.60   | 30                                  | 20   | 600                               | 0.25 | 2.0                         | 9.1              | +0.077                                     |
| MMBZ5243BW              | H3                  | 13                               | 12.35   | 13.65   | 13                                  | 9.5  | 600                               | 0.25 | 1.0                         | 9.9              | +0.079                                     |
| MMBZ5245BW              | H5                  | 15                               | 14.25   | 15.75   | 16                                  | 8.5  | 600                               | 0.25 | 0.5                         | 11               | +0.082                                     |
| MMBZ5246BW              | J1                  | 16                               | 15.20   | 16.80   | 17                                  | 7.8  | 600                               | 0.25 | 0.1                         | 12               | +0.083                                     |
| MMBZ5248BW              | J3                  | 18                               | 17.10   | 18.90   | 21                                  | 7.0  | 600                               | 0.25 | 0.1                         | 14               | +0.085                                     |
| MMBZ5250BW              | J5                  | 20                               | 19.00   | 21.00   | 25                                  | 6.2  | 600                               | 0.25 | 0.1                         | 15               | +0.086                                     |
| MMBZ5251BW              | K1                  | 22                               | 20.90   | 23.10   | 29                                  | 5.6  | 600                               | 0.25 | 0.1                         | 17               | +0.087                                     |
| MMBZ5252BW              | K2                  | 24                               | 22.80   | 25.20   | 33                                  | 5.2  | 600                               | 0.25 | 0.1                         | 18               | +0.087                                     |
| MMBZ5254BW              | K4                  | 27                               | 25.65   | 28.35   | 41                                  | 5.0  | 600                               | 0.25 | 0.1                         | 21               | +0.090                                     |
| MMBZ5255BW              | K5                  | 28                               | 26.60   | 29.40   | 44                                  | 4.5  | 600                               | 0.25 | 0.1                         | 21               | +0.091                                     |
| MMBZ5256BW              | M1                  | 30                               | 28.50   | 31.50   | 49                                  | 4.2  | 600                               | 0.25 | 0.1                         | 23               | +0.091                                     |
| MMBZ5257BW              | M2                  | 33                               | 31.35   | 34.65   | 58                                  | 3.8  | 700                               | 0.25 | 0.1                         | 25               | +0.092                                     |
| MMBZ5258BW              | M3                  | 36                               | 34.20   | 37.80   | 70                                  | 3.4  | 700                               | 0.25 | 0.1                         | 27               | +0.093                                     |
| MMBZ5259BW              | M4                  | 39                               | 37.05   | 40.95   | 80                                  | 3.2  | 800                               | 0.25 | 0.1                         | 30               | +0.094                                     |
| MMBZ5260BW              | M5                  | 43                               | 40.85   | 45.15   | 93                                  | 3.0  | 900                               | 0.25 | 0.1                         | 33               | +0.095                                     |
| MMBZ5261BW              | N1                  | 47                               | 44.65   | 49.35   | 105                                 | 2.7  | 1000                              | 0.25 | 0.1                         | 36               | +0.095                                     |
| MMBZ5262BW              | N2                  | 51                               | 48.45   | 53.55   | 125                                 | 2.5  | 1100                              | 0.25 | 0.1                         | 39               | +0.096                                     |

Note: 1. Type numbers listed have standard tolerance on the nominal zener voltage of ±5%.  
2. Measured with pulses t<sub>p</sub> = 1ms.  
3. f = 1KHz

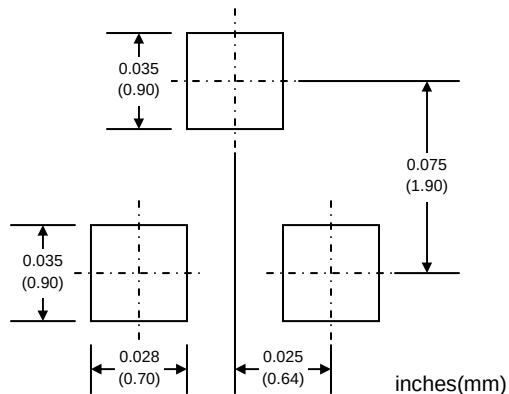
## MARKING INFORMATION

[查询"MMBZ5230BW-T1"供应商](#)



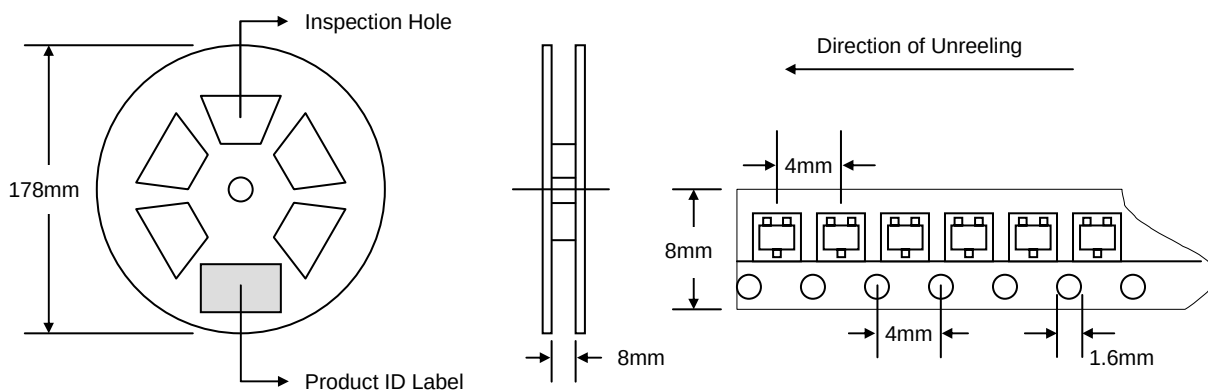
xx = Device Code, See Page 2

## RECOMMENDED FOOTPRINT



## PACKAGING INFORMATION

### TAPE & REEL



| Reel Diameter (mm) | Quantity (PCS) | Inner Box Size L x W x H (mm) | Quantity (PCS) | Carton Size L x W x H (mm) | Quantity (PCS) | Approx. Gross Weight (KG) |
|--------------------|----------------|-------------------------------|----------------|----------------------------|----------------|---------------------------|
| 178                | 3,000          | 187 x 187 x 65                | 15,000         | 390 x 240 x 420            | 150,000        | 10.0                      |

**Note:** 1. Anti-static plastic reel, white, water clear or blue color. Inspection hole might be varied in different alignment.  
2. Components are packed in accordance with EIA standard 481-1 and 481-2.

#### ORDERING INFORMATION

| Product No.   | Package Type | Shipping Quantity |
|---------------|--------------|-------------------|
| MMBZ52xxBW-T1 | SOT-323      | 3000/Tape & Reel  |

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, MMBZ5221BW-T1-LF.**

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