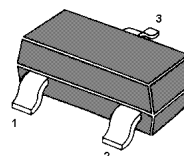


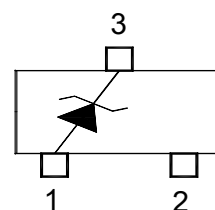
## SILICON PLANAR ZENER DIODES

### FEATURES

- Planar Die construction
- 350mW Power Dissipation
- Zener Voltages from 2.4V~51V
- Ideally Suited for Automated Assembly Processes



1.ANODE 3.CATHODE  
SOT-23 Plastic Package



### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

| Parameter                               | Symbol          | Value         | Unit               |
|---|-----------------|---------------|--------------------|
| Power Dissipation                       | $P_D$           | 350           | mW                 |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 357           | $^\circ\text{C/W}$ |
| Junction Temperature                    | $T_j$           | 150           | $^\circ\text{C}$   |
| Storage Temperature Range               | $T_{stg}$       | - 55 to + 150 | $^\circ\text{C}$   |

## Characteristics $T_a = 25\text{ }^\circ\text{C}$ ( $V_F = 0.9\text{ V}$ Maximum at $I_F = 10\text{ mA}$ )

| Type      | Marking Code | Zener Voltage Range <sup>1)</sup> |               |             | Max. Dynamic Resistance |             |          |             | Max. Reverse Current |          |
|-----------|--------------|-----------------------------------|---------------|-------------|-------------------------|-------------|----------|-------------|----------------------|----------|
|           |              | $V_{znom}$                        | $V_{ZT}$      | at $I_{ZT}$ | $Z_{ZT}$                | at $I_{ZT}$ | $Z_{ZK}$ | at $I_{ZK}$ | $I_R$                | at $V_R$ |
|           |              | V                                 | V             | mA          | $\Omega$                | mA          | $\Omega$ | mA          | $\mu\text{A}$        | V        |
| MMBZ5221B | Y0           | 2.4                               | 2.28...2.52   | 20          | 30                      | 20          | 1200     | 0.25        | 100                  | 1        |
| MMBZ5223B | Z0           | 2.7                               | 2.57...2.84   | 20          | 30                      | 20          | 1300     | 0.25        | 75                   | 1        |
| MMBZ5225B | AA           | 3                                 | 2.85...3.15   | 20          | 30                      | 20          | 1600     | 0.25        | 50                   | 1        |
| MMBZ5226B | AB           | 3.3                               | 3.14...3.47   | 20          | 28                      | 20          | 1600     | 0.25        | 25                   | 1        |
| MMBZ5227B | AC           | 3.6                               | 3.42...3.78   | 20          | 24                      | 20          | 1700     | 0.25        | 15                   | 1        |
| MMBZ5228B | AD           | 3.9                               | 3.71...4.1    | 20          | 23                      | 20          | 1900     | 0.25        | 10                   | 1        |
| MMBZ5229B | AE           | 4.3                               | 4.09...4.52   | 20          | 22                      | 20          | 2000     | 0.25        | 5                    | 1        |
| MMBZ5230B | AF           | 4.7                               | 4.47...4.94   | 20          | 19                      | 20          | 1900     | 0.25        | 5                    | 2        |
| MMBZ5231B | AH           | 5.1                               | 4.85...5.36   | 20          | 17                      | 20          | 1600     | 0.25        | 5                    | 2        |
| MMBZ5232B | AJ           | 5.6                               | 5.32...5.88   | 20          | 11                      | 20          | 1600     | 0.25        | 5                    | 3        |
| MMBZ5233B | AK           | 6                                 | 5.7...6.3     | 20          | 7                       | 20          | 1600     | 0.25        | 5                    | 3.5      |
| MMBZ5234B | AM           | 6.2                               | 5.89...6.51   | 20          | 7                       | 20          | 1000     | 0.25        | 5                    | 4        |
| MMBZ5235B | AN           | 6.8                               | 6.46...7.14   | 20          | 5                       | 20          | 750      | 0.25        | 3                    | 5        |
| MMBZ5236B | AP           | 7.5                               | 7.13...7.88   | 20          | 6                       | 20          | 500      | 0.25        | 3                    | 6        |
| MMBZ5237B | AR           | 8.2                               | 7.79...8.61   | 20          | 8                       | 20          | 500      | 0.25        | 3                    | 6.5      |
| MMBZ5239B | AY           | 9.1                               | 8.65...9.56   | 20          | 10                      | 20          | 600      | 0.25        | 3                    | 7        |
| MMBZ5240B | AZ           | 10                                | 9.5...10.5    | 20          | 17                      | 20          | 600      | 0.25        | 3                    | 8        |
| MMBZ5241B | BA           | 11                                | 10.45...11.55 | 20          | 22                      | 20          | 600      | 0.25        | 2                    | 8.4      |
| MMBZ5242B | BB           | 12                                | 11.4...12.6   | 20          | 30                      | 20          | 600      | 0.25        | 1                    | 9.1      |
| MMBZ5243B | BC           | 13                                | 12.35...13.65 | 9.5         | 13                      | 9.5         | 600      | 0.25        | 0.5                  | 9.9      |
| MMBZ5245B | BE           | 15                                | 14.25...15.75 | 8.5         | 16                      | 8.5         | 600      | 0.25        | 0.1                  | 11       |
| MMBZ5246B | BF           | 16                                | 15.2...16.8   | 7.8         | 17                      | 7.8         | 600      | 0.25        | 0.1                  | 12       |
| MMBZ5247B | BH           | 17                                | 16.15...17.85 | 7.4         | 19                      | 7.4         | 600      | 0.25        | 0.1                  | 13       |
| MMBZ5248B | BJ           | 18                                | 17.1...18.9   | 7           | 21                      | 7           | 600      | 0.25        | 0.1                  | 14       |
| MMBZ5249B | BK           | 19                                | 18.05...19.95 | 6.6         | 23                      | 6.6         | 600      | 0.25        | 0.1                  | 14       |
| MMBZ5250B | BM           | 20                                | 19...21       | 6.2         | 25                      | 6.2         | 600      | 0.25        | 0.1                  | 15       |
| MMBZ5251B | BN           | 22                                | 20.9...23.1   | 5.6         | 29                      | 5.6         | 600      | 0.25        | 0.1                  | 17       |
| MMBZ5252B | BP           | 24                                | 22.8...25.2   | 5.2         | 33                      | 5.2         | 600      | 0.25        | 0.1                  | 18       |
| MMBZ5253B | BR           | 25                                | 23.75...26.25 | 5           | 35                      | 5           | 600      | 0.25        | 0.1                  | 19       |
| MMBZ5254B | BX           | 27                                | 25.65...28.35 | 4.6         | 41                      | 4.6         | 600      | 0.25        | 0.1                  | 21       |
| MMBZ5256B | BZ           | 30                                | 28.5...31.5   | 4.2         | 49                      | 4.2         | 600      | 0.25        | 0.1                  | 23       |
| MMBZ5257B | CA           | 33                                | 31.35...34.65 | 3.8         | 58                      | 3.8         | 700      | 0.25        | 0.1                  | 25       |
| MMBZ5258B | CB           | 36                                | 34.2...37.8   | 3.4         | 70                      | 3.4         | 700      | 0.25        | 0.1                  | 27       |
| MMBZ5259B | CC           | 39                                | 37.05...40.95 | 3.2         | 80                      | 3.2         | 800      | 0.25        | 0.1                  | 30       |
| MMBZ5260B | CD           | 43                                | 40.85...45.15 | 3           | 93                      | 3           | 800      | 0.25        | 0.1                  | 33       |
| MMBZ5261B | CE           | 47                                | 44.65...49.35 | 2.7         | 105                     | 2.7         | 1000     | 0.25        | 0.1                  | 36       |
| MMBZ5262B | CF           | 51                                | 48.45...53.55 | 2.5         | 125                     | 2.5         | 1100     | 0.25        | 0.1                  | 39       |

<sup>1)</sup> Tested with pulses  $t_p = 20\text{ ms}$ .

## Typical Characteristics

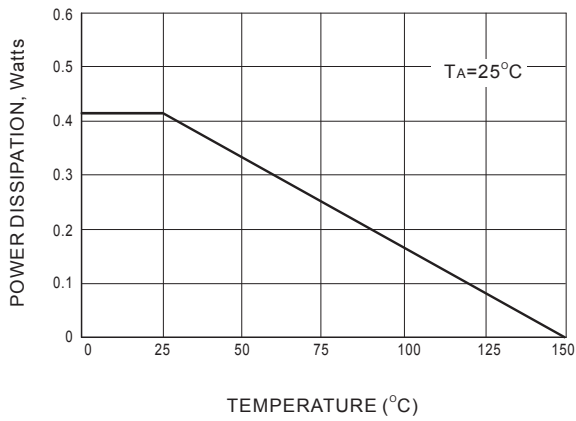


Fig.1 STEADY STATE POWER DERATING

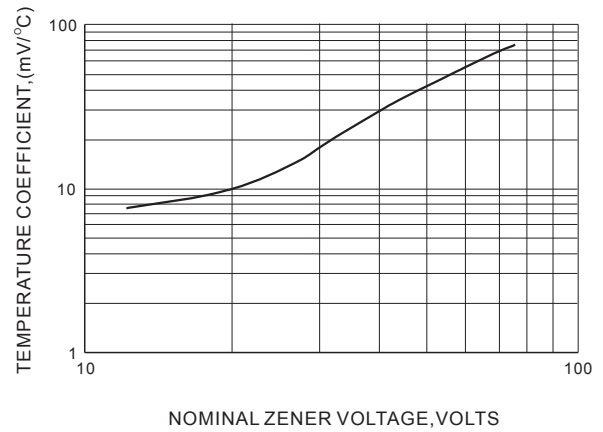


Fig.2 TEMPERATURE COEFFICIENTS

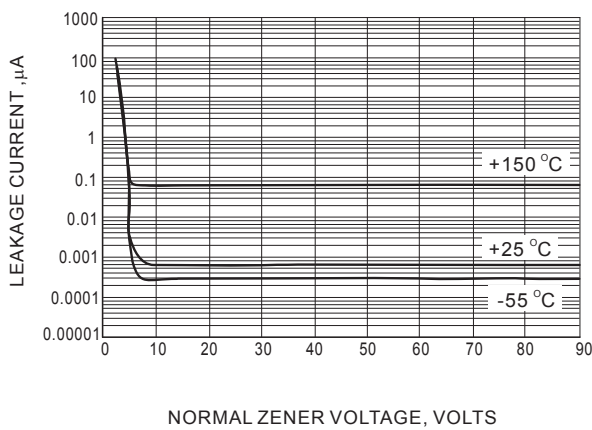


Fig.3 TYPICAL LEAKAGE CURRENT

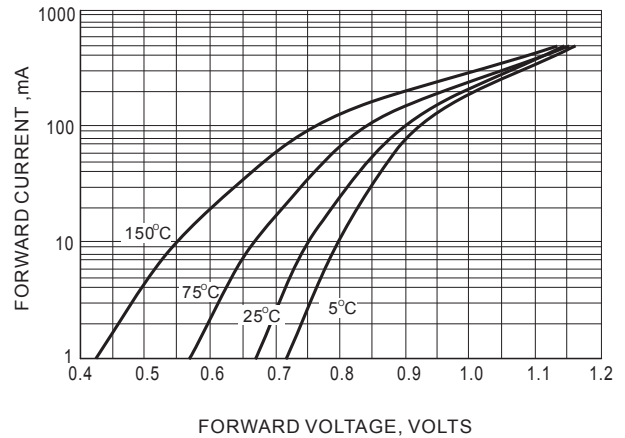
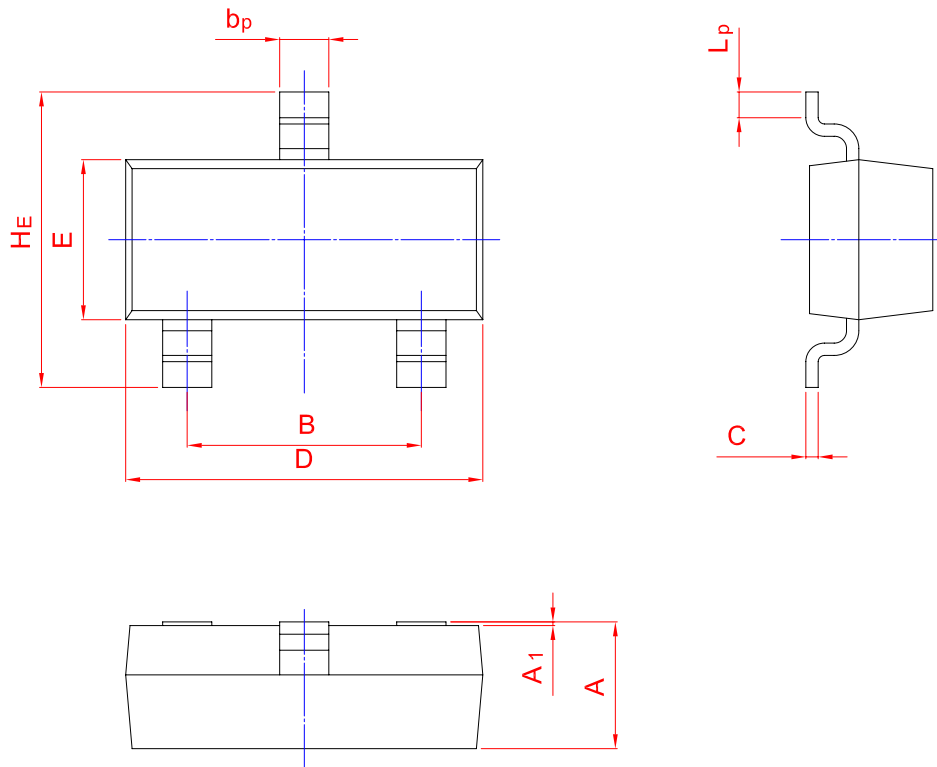
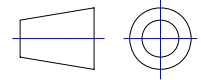


Fig.4 TYPICAL FORWARD VOLTAGE

## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



| UNIT | A    | B    | bp   | C    | D    | E    | HE   | A1    | Lp   |
|------|------|------|------|------|------|------|------|-------|------|
| mm   | 1.40 | 2.04 | 0.50 | 0.19 | 3.10 | 1.65 | 3.00 | 0.100 | 0.50 |
|      | 0.95 | 1.78 | 0.35 | 0.08 | 2.70 | 1.20 | 2.20 | 0.013 | 0.20 |

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