

**SOT-23 Formed SMD Package**

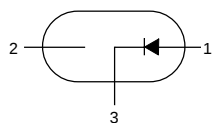
**CMBZ52XX series**

**SILICON PLANAR ZENER DIODES**

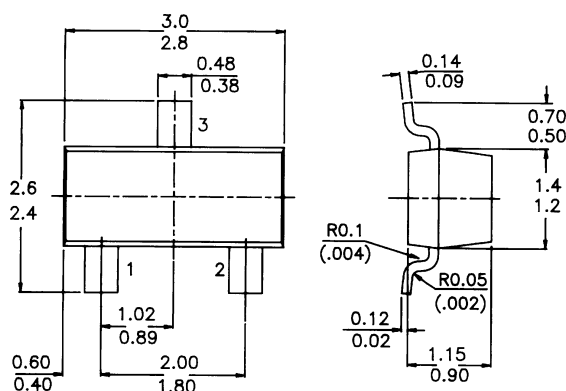
General purpose zener diodes

**Pin configuration**

1 = ANODE  
2 = NC  
3 = CATHODE



**PACKAGE OUTLINE DETAILS**  
ALL DIMENSIONS IN mm



**Marking**

|                |                |                |                 |
|----------------|----------------|----------------|-----------------|
| CMBZ5230B = 8E | CMBZ5239B = 8P | CMBZ5248B = 8Y | CMBZ5257B = 81H |
| 31B = 8F       | 40B = 8Q       | 49B = 8Z       |                 |
| 32B = 8G       | 41B = 8R       | 50B = 81A      |                 |
| 33B = 8H       | 42B = 8S       | 51B = 81B      |                 |
| 34B = 8J       | 43B = 8T       | 52B = 81C      |                 |
| 35B = 8K       | 44B = 8U       | 53B = 81D      |                 |
| 36B = 8L       | 45B = 8V       | 54B = 81E      |                 |
| 37B = 8M       | 46B = 8W       | 55B = 81F      |                 |
| 38B = 8N       | 47B = 8X       | 56B = 81G      |                 |

**ABSOLUTE MAXIMUM RATINGS**

Working voltage range  
Working voltage tolerance  
Total power dissipation up to  $T_{amb} = 25^\circ\text{C}$   
Junction temperature

|           |      |                     |
|-----------|------|---------------------|
| $V_Z$     | nom. | 4.7 to 33 V         |
|           |      | $\pm 5\%$           |
| $P_{tot}$ | max. | 300 mW              |
| $T_j$     | max. | $150^\circ\text{C}$ |

## CMBZ52XX series

### RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

#### Limiting values

|                                                               |           |             |                      |
|---------------------------------------------------------------|-----------|-------------|----------------------|
| Total power dissipation up to $T_{amb} = 25^\circ\text{C}$ *  | $P_{tot}$ | max.        | 300 mW               |
| Total power dissipation up to $T_{amb} = 25^\circ\text{C}$ ** | $P_{tot}$ | max.        | 225 mW               |
| Storage temperature                                           | $T_{stg}$ | -55 to -150 | $^\circ\text{C}$     |
| Junction temperature                                          | $T_j$     | max.        | 150 $^\circ\text{C}$ |

### THERMAL RESISTANCE

|                          |               |                        |
|--------------------------|---------------|------------------------|
| From junction to ambient | $R_{th\ j-a}$ | 417 $^\circ\text{C/W}$ |
| From junction to ambient | $R_{th\ j-a}$ | 556 $^\circ\text{C/W}$ |

### CHARACTERISTICS

$T_j = 25^\circ\text{C}$  unless otherwise specified

$V_F = 0.9\text{V}$  Max. @  $I_F = 10\text{ mA}$

| Device     | Zener<br>Voltage<br>$V_Z (\pm 5\%)$<br>Nominal | Test<br>Current<br>$I_{ZT}$<br>mA | $Z_{ZK}$<br>$I_Z=0.25\text{mA}$<br>ohm max | $Z_{ZT}$<br>$I_Z = I_{ZT}$<br>@10% Mod<br>ohm max | Max<br>$I_R$<br>uA<br>max | @ $V_R$<br>(V) |
|------------|------------------------------------------------|-----------------------------------|--------------------------------------------|---------------------------------------------------|---------------------------|----------------|
| CMBZ-5230B | 4.7                                            | 20                                | 1900                                       | 19                                                | 5.0                       | 2.0            |
| CMBZ-5231B | 5.1                                            | 20                                | 1600                                       | 17                                                | 5.0                       | 2.0            |
| CMBZ-5232B | 5.6                                            | 20                                | 1600                                       | 11                                                | 5.0                       | 3.0            |
| CMBZ-5233B | 6.0                                            | 20                                | 1600                                       | 7.0                                               | 5.0                       | 3.5            |
| CMBZ-5234B | 6.2                                            | 20                                | 1000                                       | 7.0                                               | 5.0                       | 4.0            |
| CMBZ-5235B | 6.8                                            | 20                                | 750                                        | 5.0                                               | 3.0                       | 5.0            |
| CMBZ-5236B | 7.5                                            | 20                                | 500                                        | 6.0                                               | 3.0                       | 6.0            |
| CMBZ-5237B | 8.2                                            | 20                                | 500                                        | 8.0                                               | 3.0                       | 6.5            |
| CMBZ-5238B | 8.7                                            | 20                                | 600                                        | 8.0                                               | 3.0                       | 6.5            |
| CMBZ-5239B | 9.1                                            | 20                                | 600                                        | 10                                                | 3.0                       | 7.0            |
| CMBZ-5240B | 10                                             | 20                                | 600                                        | 17                                                | 3.0                       | 8.0            |
| CMBZ-5241B | 11                                             | 20                                | 600                                        | 22                                                | 2.0                       | 8.4            |
| CMBZ-5242B | 12                                             | 20                                | 600                                        | 30                                                | 1.0                       | 9.1            |
| CMBZ-5243B | 13                                             | 9.5                               | 600                                        | 13                                                | 0.5                       | 9.9            |
| CMBZ-5244B | 14                                             | 9.0                               | 600                                        | 15                                                | 0.1                       | 10             |
| CMBZ-5245B | 15                                             | 8.5                               | 600                                        | 16                                                | 0.1                       | 11             |
| CMBZ-5246B | 16                                             | 7.8                               | 600                                        | 17                                                | 0.1                       | 12             |
| CMBZ-5247B | 17                                             | 7.4                               | 600                                        | 19                                                | 0.1                       | 13             |
| CMBZ-5248B | 18                                             | 7.0                               | 600                                        | 21                                                | 0.1                       | 14             |
| CMBZ-5249B | 19                                             | 6.6                               | 600                                        | 23                                                | 0.1                       | 14             |
| CMBZ-5250B | 20                                             | 6.2                               | 600                                        | 25                                                | 0.1                       | 15             |
| CMBZ-5251B | 22                                             | 5.6                               | 600                                        | 29                                                | 0.1                       | 17             |

\* Device mounted on a ceramic alumina of 8 mm × 10 mm × 0.7 mm

\*\* Device mounted on an FR5 printed circuit board

## CMBZ52XX series

| Device     | Zener<br>Voltage<br>$V_Z (\pm 5\%)$<br>Nominal | Test<br>Current<br>$I_{ZT}$<br>mA | $Z_{ZK}$<br>$I_Z = 0.25 \text{ mA}$<br>ohm max | $Z_{ZT}$<br>$I_Z = I_{ZT}$<br>@10% Mod<br>ohm max | Max<br>$I_R$<br>uA<br>max | @ $V_R$<br>(V) |
|------------|------------------------------------------------|-----------------------------------|------------------------------------------------|---------------------------------------------------|---------------------------|----------------|
| CMBZ-5252B | 24                                             | 5.2                               | 600                                            | 33                                                | 0.1                       | 18             |
| CMBZ-5253B | 25                                             | 5.0                               | 600                                            | 35                                                | 0.1                       | 19             |
| CMBZ-5254B | 27                                             | 4.6                               | 600                                            | 41                                                | 0.1                       | 21             |
| CMBZ-5255B | 28                                             | 4.5                               | 600                                            | 44                                                | 0.1                       | 21             |
| CMBZ-5256B | 30                                             | 4.2                               | 600                                            | 49                                                | 0.1                       | 23             |
| CMBZ-5257B | 33                                             | 3.8                               | 700                                            | 58                                                | 0.1                       | 25             |

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