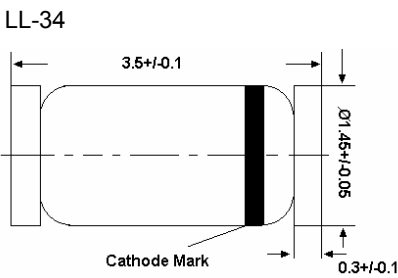


# BZT52C Series

## SILICON PLANAR ZENER DIODES

### Features

- Ideally Suited for Automated Assembly Processes
- Total power dissipation: max. 500 mW



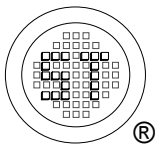
Glass case MiniMELF  
Dimensions in mm

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

| Parameter                 | Symbol    | Value         | Unit             |
|---------------------------|-----------|---------------|------------------|
| Power Dissipation         | $P_{tot}$ | 500           | mW               |
| Junction Temperature      | $T_j$     | 150           | $^\circ\text{C}$ |
| Storage Temperature Range | $T_s$     | - 65 to + 150 | $^\circ\text{C}$ |

### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter                                  | Symbol    | Max. | Unit                       |
|--------------------------------------------|-----------|------|----------------------------|
| Thermal Resistance Junction to Ambient Air | $R_{thA}$ | 305  | $^\circ\text{C}/\text{mW}$ |
| Forward Voltage<br>at $I_F = 10\text{ mA}$ | $V_F$     | 0.9  | V                          |



**SEMTECH ELECTRONICS LTD.**  
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ISO/TS 16949 : 2002  
Certificate No. 05103



ISO 14001:2004  
Certificate No. 7116



ISO 9001:2000  
Certificate No. 0506098

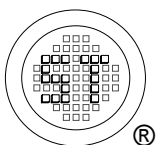
Dated : 03/09/2007

# BZT52C Series

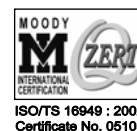
## Characteristics at $T_a = 25\text{ }^{\circ}\text{C}$

| Type      | Zener Voltage Range <sup>1)</sup> |                |                   | Dynamic Impedance                       |                             |                   | Reverse Leakage Current       |               |
|-----------|-----------------------------------|----------------|-------------------|-----------------------------------------|-----------------------------|-------------------|-------------------------------|---------------|
|           | $V_{znom}$<br>V                   | $I_{ZT}$<br>mA | for $V_{ZT}$<br>V | $Z_{ZT}$ at $I_{ZT}$<br>$\Omega$ (Max.) | $Z_{ZK}$<br>$\Omega$ (Max.) | at $I_{ZK}$<br>mA | $I_R$<br>$\mu\text{A}$ (Max.) | at $V_R$<br>V |
| BZT52C2V4 | 2.4                               | 5              | 2.2...2.6         | 100                                     | 600                         | 1                 | 50                            | 1             |
| BZT52C2V7 | 2.7                               | 5              | 2.5...2.9         | 100                                     | 600                         | 1                 | 20                            | 1             |
| BZT52C3V0 | 3.0                               | 5              | 2.8...3.2         | 95                                      | 600                         | 1                 | 10                            | 1             |
| BZT52C3V3 | 3.3                               | 5              | 3.1...3.5         | 95                                      | 600                         | 1                 | 5                             | 1             |
| BZT52C3V6 | 3.6                               | 5              | 3.4...3.8         | 90                                      | 600                         | 1                 | 5                             | 1             |
| BZT52C3V9 | 3.9                               | 5              | 3.7...4.1         | 90                                      | 600                         | 1                 | 3                             | 1             |
| BZT52C4V3 | 4.3                               | 5              | 4...4.6           | 90                                      | 600                         | 1                 | 3                             | 1             |
| BZT52C4V7 | 4.7                               | 5              | 4.4...5           | 80                                      | 500                         | 1                 | 3                             | 2             |
| BZT52C5V1 | 5.1                               | 5              | 4.8...5.4         | 60                                      | 480                         | 1                 | 2                             | 2             |
| BZT52C5V6 | 5.6                               | 5              | 5.2...6           | 40                                      | 400                         | 1                 | 1                             | 2             |
| BZT52C6V2 | 6.2                               | 5              | 5.8...6.6         | 10                                      | 150                         | 1                 | 3                             | 4             |
| BZT52C6V8 | 6.8                               | 5              | 6.4...7.2         | 15                                      | 80                          | 1                 | 2                             | 4             |
| BZT52C7V5 | 7.5                               | 5              | 7...7.9           | 15                                      | 80                          | 1                 | 1                             | 5             |
| BZT52C8V2 | 8.2                               | 5              | 7.7...8.7         | 15                                      | 80                          | 1                 | 0.7                           | 5             |
| BZT52C9V1 | 9.1                               | 5              | 8.5...9.6         | 15                                      | 100                         | 1                 | 0.5                           | 6             |
| BZT52C10  | 10                                | 5              | 9.4...10.6        | 20                                      | 150                         | 1                 | 0.2                           | 7             |
| BZT52C11  | 11                                | 5              | 10.4...11.6       | 20                                      | 150                         | 1                 | 0.1                           | 8             |
| BZT52C12  | 12                                | 5              | 11.4...12.7       | 25                                      | 150                         | 1                 | 0.1                           | 8             |
| BZT52C13  | 13                                | 5              | 12.4...14.1       | 30                                      | 170                         | 1                 | 0.1                           | 8             |
| BZT52C15  | 15                                | 5              | 13.8...15.6       | 30                                      | 200                         | 1                 | 0.1                           | 10.5          |
| BZT52C16  | 16                                | 5              | 15.3...17.1       | 40                                      | 200                         | 1                 | 0.1                           | 11.2          |
| BZT52C18  | 18                                | 5              | 16.8...19.1       | 45                                      | 225                         | 1                 | 0.1                           | 12.6          |
| BZT52C20  | 20                                | 5              | 18.8...21.2       | 55                                      | 225                         | 1                 | 0.1                           | 14            |
| BZT52C22  | 22                                | 5              | 20.8...23.3       | 55                                      | 250                         | 1                 | 0.1                           | 15.4          |
| BZT52C24  | 24                                | 5              | 22.8...25.6       | 70                                      | 250                         | 1                 | 0.1                           | 16.8          |
| BZT52C27  | 27                                | 2              | 25.1...28.9       | 80                                      | 300                         | 0.5               | 0.1                           | 18.9          |
| BZT52C30  | 30                                | 2              | 28...32           | 80                                      | 300                         | 0.5               | 0.1                           | 21            |
| BZT52C33  | 33                                | 2              | 31...35           | 80                                      | 325                         | 0.5               | 0.1                           | 23.1          |
| BZT52C36  | 36                                | 2              | 34...38           | 90                                      | 350                         | 0.5               | 0.1                           | 25.2          |
| BZT52C39  | 39                                | 2              | 37...41           | 130                                     | 350                         | 0.5               | 0.1                           | 27.3          |

<sup>1)</sup>  $V_Z$  is tested with pulses (20 ms).



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