



Certificate Number: Q10501

Certificate Number: E17275

## BZX55C2V4 ~ BZX55C200

## SILICON ZENER DIODES

$V_Z$  : 2.4 - 200 Volts

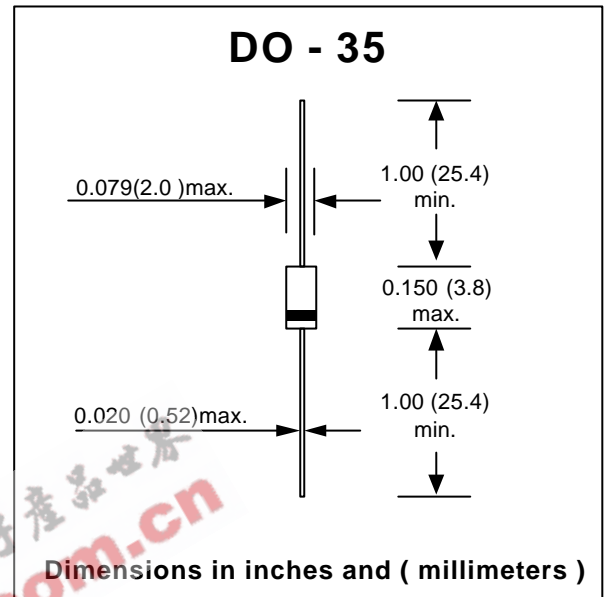
$P_D$  : 500 mW

### FEATURES :

- \* Complete 2.4 to 200 Volts
- \* High surge current capability
- \* High peak reverse power dissipation
- \* High reliability
- \* Low leakage current

### MECHANICAL DATA

- \* Case : Molded glass
- \* Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity : Color band denotes cathode end. When operated in zener mode, cathode will be positive with respect to anode
- \* Mounting position : Any
- \* Weight : 0.13 gram



### MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

| Rating   | Symbol          | Value         | Unit   |
|--|-----------------|---------------|--------|
| Power Dissipation (Note)                                   | $P_D$           | 500           | mW     |
| Maximum Forward Voltage at $I_F = 100$ mA                  | $V_F$           | 1.0           | V      |
| Maximum Thermal Resistance Junction to Ambient Air (Note1) | $R_{\theta JA}$ | 0.3           | K / mW |
| Junction Temperature Range                                 | $T_j$           | - 55 to + 175 | °C     |
| Storage Temperature Range                                  | $T_s$           | - 55 to + 175 | °C     |

**Note** : 1. Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

UPDATE : JANUARY 18, 2002



Certificate Number: Q4591

Certificate Number: EL226

## ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

| TYPE<br>Number | Zener Voltage<br>$V_Z @ I_{ZT}$ |                          |                          |                  | Maximum Zener<br>Impedance  |                             |                  | Maximum Reverse<br>Leakage Current |  |     | Temp. coefficient<br>of Zener Voltage |
|----------------|---------------------------------|--------------------------|--------------------------|------------------|-----------------------------|-----------------------------|------------------|------------------------------------|--|-----|---------------------------------------|
|                | Nom <sup>1)</sup><br>(V)        | Min <sup>2)</sup><br>(V) | Max <sup>2)</sup><br>(V) | $I_{ZT}$<br>(mA) | $Z_{ZT} @ I_{ZT}$<br>(Ohms) | $Z_{Zk} @ I_{Zk}$<br>(Ohms) | $I_{Zk}$<br>(mA) | $I_R$<br>( $\mu$ A)                | $I_R$ <sup>2)</sup> at $V_R$<br>(mA) (V) |     | $TK_{VZ}$<br>(% / K)                  |
| BZX55C2V4      | 2.4                             | 2.28                     | 2.56                     | 5                | 85                          | 600                         | 1                | 50                                 | 100                                      | 1   | -0.09...-0.06                         |
| BZX55C2V7      | 2.7                             | 2.5                      | 2.9                      | 5                | 85                          | 600                         | 1                | 10                                 | 50                                       | 1   | -0.09...-0.06                         |
| BZX55C3V0      | 3.0                             | 2.8                      | 3.2                      | 5                | 85                          | 600                         | 1                | 4                                  | 40                                       | 1   | -0.08...-0.05                         |
| BZX55C3V3      | 3.3                             | 3.1                      | 3.5                      | 5                | 85                          | 600                         | 1                | 2                                  | 40                                       | 1   | -0.08...-0.05                         |
| BZX55C3V6      | 3.6                             | 3.4                      | 3.8                      | 5                | 85                          | 600                         | 1                | 2                                  | 40                                       | 1   | -0.08...-0.05                         |
| BZX55C3V9      | 3.9                             | 3.7                      | 4.1                      | 5                | 85                          | 600                         | 1                | 2                                  | 40                                       | 1   | -0.08...-0.05                         |
| BZX55C4V3      | 4.3                             | 4.0                      | 4.6                      | 5                | 75                          | 600                         | 1                | 1                                  | 20                                       | 1   | -0.06...-0.03                         |
| BZX55C4V7      | 4.7                             | 4.4                      | 5.0                      | 5                | 60                          | 600                         | 1                | 0.5                                | 10                                       | 1   | -0.05...+0.02                         |
| BZX55C5V1      | 5.1                             | 4.8                      | 5.4                      | 5                | 35                          | 550                         | 1                | 0.1                                | 2  | 1   | -0.02...+0.02                         |
| BZX55C5V6      | 5.6                             | 5.2                      | 6.0                      | 5                | 25                          | 450                         | 1                | 0.1                                | 2  | 1   | -0.05...+0.05                         |
| BZX55C6V2      | 6.2                             | 5.8                      | 6.6                      | 5                | 10                          | 200                         | 1                | 0.1                                | 2  | 2   | 0.03...0.06                           |
| BZX55C6V8      | 6.8                             | 6.4                      | 7.2                      | 5                | 8                           | 150                         | 1                | 0.1                                | 2  | 3   | 0.03...0.07                           |
| BZX55C7V5      | 7.5                             | 7.0                      | 7.9                      | 5                | 7                           | 50                          | 1                | 0.1                                | 2  | 5   | 0.03...0.07                           |
| BZX55C8V2      | 8.2                             | 7.7                      | 8.7                      | 5                | 7                           | 50                          | 1                | 0.1                                | 2  | 6.2 | 0.03...0.08                           |
| BZX55C9V1      | 9.1                             | 8.5                      | 9.6                      | 5                | 10                          | 50                          | 1                | 0.1                                | 2  | 6.8 | 0.03...0.09                           |
| BZX55C10       | 10                              | 9.4                      | 10.6                     | 5                | 15                          | 70                          | 1                | 0.1                                | 2  | 7.5 | 0.03...0.10                           |
| BZX55C11       | 11                              | 10.4                     | 11.6                     | 5                | 20                          | 70                          | 1                | 0.1                                | 2  | 8.2 | 0.03...0.11                           |
| BZX55C12       | 12                              | 11.4                     | 12.7                     | 5                | 20                          | 90                          | 1                | 0.1                                | 2  | 9.1 | 0.03...0.11                           |
| BZX55C13       | 13                              | 12.4                     | 14.1                     | 5                | 26                          | 110                         | 1                | 0.1                                | 2  | 10  | 0.03...0.11                           |
| BZX55C15       | 14                              | 13.8                     | 15.6                     | 5                | 30                          | 110                         | 1                | 0.1                                | 2  | 11  | 0.03...0.11                           |
| BZX55C16       | 16                              | 15.3                     | 17.1                     | 5                | 40                          | 170                         | 1                | 0.1                                | 2  | 12  | 0.03...0.11                           |
| BZX55C18       | 18                              | 16.8                     | 19.1                     | 5                | 50                          | 170                         | 1                | 0.1                                | 2  | 13  | 0.03...0.11                           |
| BZX55C20       | 20                              | 18.8                     | 21.2                     | 5                | 55                          | 220                         | 1                | 0.1                                | 2  | 15  | 0.03...0.11                           |
| BZX55C22       | 22                              | 20.8                     | 23.3                     | 5                | 55                          | 220                         | 1                | 0.1                                | 2  | 16  | 0.04...0.12                           |
| BZX55C24       | 24                              | 22.8                     | 25.6                     | 5                | 80                          | 220                         | 1                | 0.1                                | 2  | 18  | 0.04...0.12                           |
| BZX55C27       | 27                              | 25.1                     | 28.9                     | 5                | 80                          | 220                         | 1                | 0.1                                | 2  | 20  | 0.04...0.12                           |
| BZX55C30       | 30                              | 28                       | 32                       | 5                | 80                          | 220                         | 1                | 0.1                                | 2  | 22  | 0.04...0.12                           |
| BZX55C33       | 33                              | 31                       | 35                       | 5                | 80                          | 220                         | 1                | 0.1                                | 2  | 24  | 0.04...0.12                           |
| BZX55C36       | 36                              | 34                       | 38                       | 5                | 80                          | 220                         | 1                | 0.1                                | 2  | 27  | 0.04...0.12                           |
| BZX55C39       | 39                              | 37                       | 41                       | 2.5              | 90                          | 500                         | 0.5              | 0.1                                | 5  | 30  | 0.04...0.12                           |
| BZX55C43       | 43                              | 40                       | 46                       | 2.5              | 90                          | 500                         | 0.5              | 0.1                                | 5  | 33  | 0.04...0.12                           |
| BZX55C47       | 47                              | 44                       | 50                       | 2.5              | 110                         | 600                         | 0.5              | 0.1                                | 5  | 36  | 0.04...0.12                           |
| BZX55C51       | 51                              | 48                       | 54                       | 2.5              | 125                         | 700                         | 0.5              | 0.1                                | 10                                       | 39  | 0.04...0.12                           |
| BZX55C56       | 56                              | 52                       | 60                       | 2.5              | 135                         | 700                         | 0.5              | 0.1                                | 10                                       | 43  | 0.04...0.12                           |
| BZX55C62       | 62                              | 58                       | 66                       | 2.5              | 150                         | 1000                        | 0.5              | 0.1                                | 10                                       | 47  | 0.04...0.12                           |
| BZX55C68       | 68                              | 64                       | 72                       | 2.5              | 200                         | 1000                        | 0.5              | 0.1                                | 10                                       | 51  | 0.04...0.12                           |
| BZX55C75       | 75                              | 70                       | 79                       | 2.5              | 250                         | 1000                        | 0.5              | 0.1                                | 10                                       | 56  | 0.04...0.12                           |
| BZX55C82       | 82                              | 77                       | 87                       | 2.5              | 300                         | 1500                        | 0.25             | 0.1                                | 10                                       | 62  | 0.05...0.12                           |
| BZX55C91       | 91                              | 85                       | 96                       | 1                | 450                         | 2000                        | 0.1              | 0.1                                | 10                                       | 68  | 0.05...0.12                           |
| BZX55C100      | 100                             | 94                       | 106                      | 1                | 450                         | 5000                        | 0.1              | 0.1                                | 10                                       | 75  | 0.05...0.12                           |
| BZX55C110      | 110                             | 104                      | 116                      | 1                | 600                         | 5000                        | 0.1              | 0.1                                | 10                                       | 82  | 0.05...0.12                           |
| BZX55C120      | 120                             | 114                      | 127                      | 1                | 800                         | 5500                        | 0.1              | 0.1                                | 10                                       | 91  | 0.05...0.12                           |
| BZX55C130      | 130                             | 124                      | 141                      | 1                | 950                         | 6000                        | 0.1              | 0.1                                | 10                                       | 100 | 0.05...0.12                           |
| BZX55C150      | 150                             | 138                      | 156                      | 1                | 1250                        | 6500                        | 0.1              | 0.1                                | 10                                       | 110 | 0.05...0.12                           |
| BZX55C160      | 160                             | 153                      | 171                      | 1                | 1400                        | 7000                        | 0.1              | 0.1                                | 10                                       | 120 | 0.05...0.12                           |
| BZX55C180      | 180                             | 168                      | 191                      | 1                | 1700                        | 8500                        | 0.1              | 0.1                                | 10                                       | 130 | 0.05...0.12                           |
| BZX55C200      | 200                             | 188                      | 212                      | 1                | 2000                        | 10000                       | 0.1              | 0.1                                | 10                                       | 150 | 0.05...0.12                           |

Note 1) Tested with pulses  $t_p = 20$  ms

2) Valid Provided that leads are kept at ambient temperature at a distance of 8 mm from case