

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

| Type Number | Type Code | Zener Voltage Range (Note 2)    |        |        |                 | Maximum Zener Impedance (Note 3) |                                  |                 | Maximum Reverse Current (Note 2) |                | Temperature Coefficient of Zener voltage @ I <sub>ZT</sub> = 5Ma |      |
|-------------|-----------|---------------------------------|--------|--------|-----------------|----------------------------------|----------------------------------|-----------------|----------------------------------|----------------|------------------------------------------------------------------|------|
|             |           | V <sub>Z</sub> @I <sub>ZT</sub> |        |        | I <sub>ZT</sub> | Z <sub>ZT</sub> @I <sub>ZT</sub> | Z <sub>ZK</sub> @I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub>                   | V <sub>R</sub> | mV/° C                                                           |      |
|             |           | Nom(V)                          | Min(V) | Max(V) | mA              | Ω                                |                                  | mA              | uA                               | V              | Min                                                              | Max  |
| BZT52C2V4S  | WX        | 2.4                             | 2.20   | 2.60   | 5               | 100                              | 600                              | 1.0             | 50                               | 1.0            | -3.5                                                             | 0    |
| BZT52C2V7S  | W1        | 2.7                             | 2.5    | 2.9    | 5               | 100                              | 600                              | 1.0             | 20                               | 1.0            | -3.5                                                             | 0    |
| BZT52C3V0S  | W2        | 3.0                             | 2.8    | 3.2    | 5               | 95                               | 600                              | 1.0             | 10                               | 1.0            | -3.5                                                             | 0    |
| BZT52C3V3S  | W3        | 3.3                             | 3.1    | 3.5    | 5               | 95                               | 600                              | 1.0             | 5                                | 1.0            | -3.5                                                             | 0    |
| BZT52C3V6S  | W4        | 3.6                             | 3.4    | 3.8    | 5               | 90                               | 600                              | 1.0             | 5                                | 1.0            | -3.5                                                             | 0    |
| BZT52C3V9S  | W5        | 3.9                             | 3.7    | 4.1    | 5               | 90                               | 600                              | 1.0             | 3                                | 1.0            | -3.5                                                             | 0    |
| BZT52C4V3S  | W6        | 4.3                             | 4.0    | 4.6    | 5               | 90                               | 600                              | 1.0             | 3                                | 1.0            | -3.5                                                             | 0    |
| BZT52C4V7S  | W7        | 4.7                             | 4.4    | 5.0    | 5               | 80                               | 500                              | 1.0             | 3                                | 2.0            | -3.5                                                             | 0.2  |
| BZT52C5V1S  | W8        | 5.1                             | 4.8    | 5.4    | 5               | 60                               | 480                              | 1.0             | 2                                | 2.0            | -2.7                                                             | 1.2  |
| BZT52C5V6S  | W9        | 5.6                             | 5.2    | 6.0    | 5               | 40                               | 400                              | 1.0             | 1                                | 2.0            | -2.0                                                             | 2.5  |
| BZT52C6V2S  | WA        | 6.2                             | 5.8    | 6.6    | 5               | 10                               | 150                              | 1.0             | 3                                | 4.0            | 0.4                                                              | 3.7  |
| BZT52C6V8S  | WB        | 6.8                             | 6.4    | 7.2    | 5               | 15                               | 80                               | 1.0             | 2                                | 4.0            | 1.2                                                              | 4.5  |
| BZT52C7V5S  | WC        | 7.5                             | 7.0    | 7.9    | 5               | 15                               | 80                               | 1.0             | 1                                | 5.0            | 2.5                                                              | 5.3  |
| BZT52C8V2S  | WD        | 8.2                             | 7.7    | 8.7    | 5               | 15                               | 80                               | 1.0             | 0.7                              | 5.0            | 3.2                                                              | 6.2  |
| BZT52C9V1S  | WE        | 9.1                             | 8.5    | 9.6    | 5               | 15                               | 100                              | 1.0             | 0.5                              | 6.0            | 3.8                                                              | 7.0  |
| BZT52C10S   | WF        | 10                              | 9.4    | 10.6   | 5               | 20                               | 150                              | 1.0             | 0.2                              | 7.0            | 4.5                                                              | 8.0  |
| BZT52C11S   | WG        | 11                              | 10.4   | 11.6   | 5               | 20                               | 150                              | 1.0             | 0.1                              | 8.0            | 5.4                                                              | 9.0  |
| BZT52C12S   | WH        | 12                              | 11.4   | 12.7   | 5               | 25                               | 150                              | 1.0             | 0.1                              | 8.0            | 6.0                                                              | 10.0 |
| BZT52C13S   | WI        | 13                              | 12.4   | 14.1   | 5               | 30                               | 170                              | 1.0             | 0.1                              | 8.0            | 7.0                                                              | 11.0 |
| BZT52C15S   | WJ        | 15                              | 13.8   | 15.6   | 5               | 30                               | 200                              | 1.0             | 0.1                              | 10.5           | 9.2                                                              | 13.0 |
| BZT52C16S   | WK        | 16                              | 15.3   | 17.1   | 5               | 40                               | 200                              | 1.0             | 0.1                              | 11.2           | 10.4                                                             | 14.0 |
| BZT52C18S   | WL        | 18                              | 16.8   | 19.1   | 5               | 45                               | 225                              | 1.0             | 0.1                              | 12.6           | 12.4                                                             | 16.0 |
| BZT52C20S   | WM        | 20                              | 18.8   | 21.2   | 5               | 55                               | 225                              | 1.0             | 0.1                              | 14.0           | 14.4                                                             | 18.0 |
| BZT52C22S   | WN        | 22                              | 20.8   | 23.3   | 5               | 55                               | 250                              | 1.0             | 0.1                              | 15.4           | 16.4                                                             | 20.0 |
| BZT52C24S   | WO        | 24                              | 22.8   | 25.6   | 5               | 70                               | 250                              | 1.0             | 0.1                              | 16.8           | 18.4                                                             | 22.0 |
| BZT52C27S   | WP        | 27                              | 25.1   | 28.9   | 2               | 80                               | 300                              | 0.5             | 0.1                              | 18.9           | 21.4                                                             | 25.3 |
| BZT52C30S   | WQ        | 30                              | 28.0   | 32.0   | 2               | 80                               | 300                              | 0.5             | 0.1                              | 21.0           | 24.4                                                             | 29.4 |
| BZT52C33S   | WR        | 33                              | 31.0   | 35.0   | 2               | 80                               | 325                              | 0.5             | 0.1                              | 23.1           | 27.4                                                             | 33.4 |
| BZT52C36S   | WS        | 36                              | 34.0   | 38.0   | 2               | 90                               | 350                              | 0.5             | 0.1                              | 25.2           | 30.4                                                             | 37.4 |
| BZT52C39S   | WT        | 39                              | 37.0   | 41.0   | 2               | 130                              | 350                              | 0.5             | 0.1                              | 27.3           | 33.4                                                             | 41.2 |

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

2. Tested with pulses, period=5ms, pulse width =300us.

3.f = 1KHz

## Typical characteristics

## BZT52C2V4S-BZT52C39S

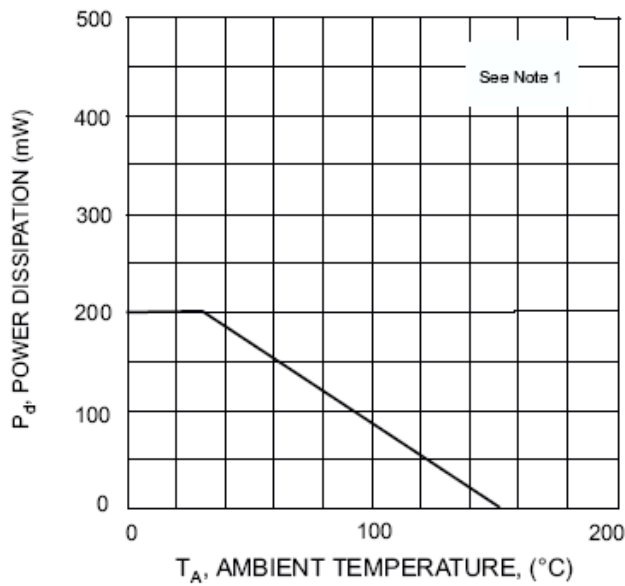


Fig. 1 Power Derating Curve

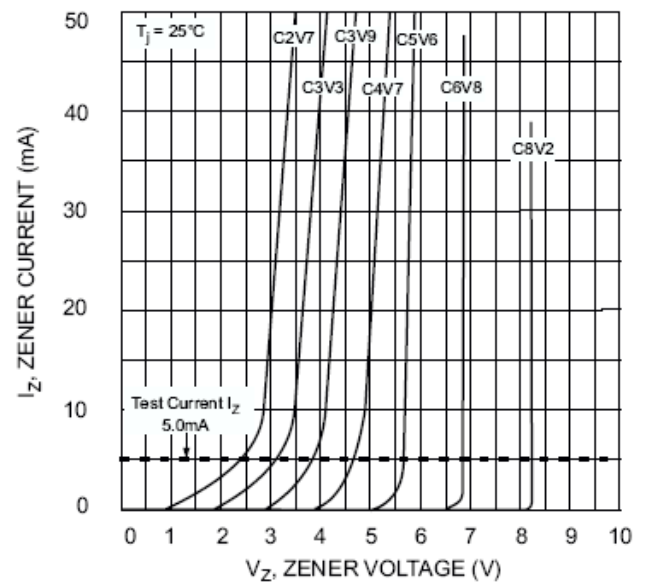


Fig. 2 Zener Breakdown Characteristics

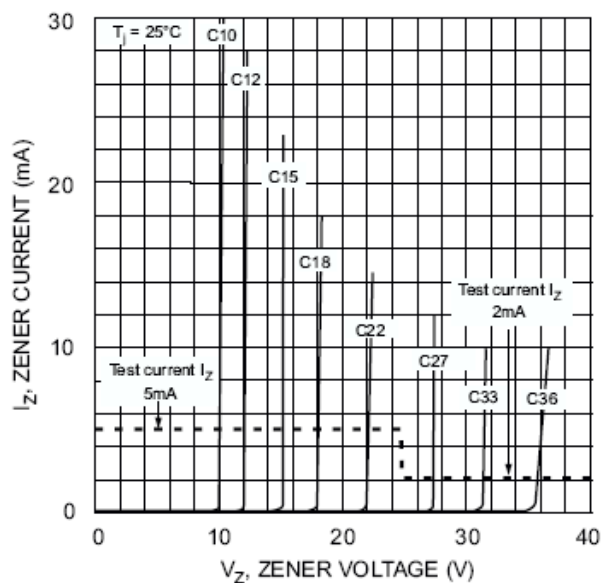


Fig. 3 Zener Breakdown Characteristics

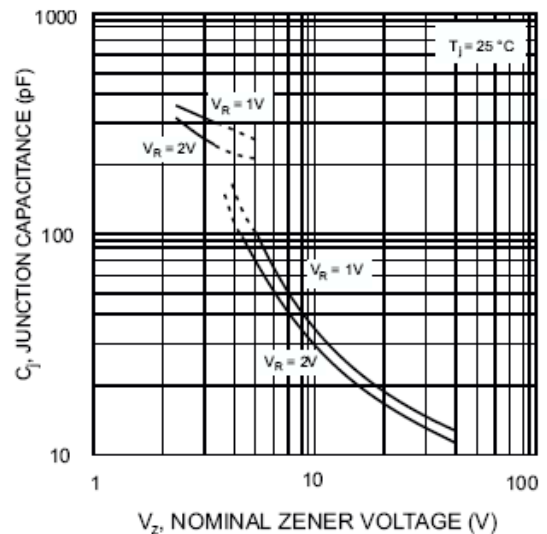


Fig. 4 Junction Capacitance vs Nominal Zener Voltage