

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

| Type Number | Marking Code | Zener Voltage Range (Note 5)     |         |         |                 | Maximum Zener Impedance (Note 6)  |                                   |                 | Maximum Reverse Current (Note 5) |                 | Temperature Coefficient of Zener Voltage @ I <sub>ZT</sub> = 5mA (mV/°C) |      |
|-------------|--------------|----------------------------------|---------|---------|-----------------|-----------------------------------|-----------------------------------|-----------------|----------------------------------|-----------------|--------------------------------------------------------------------------|------|
|             |              | 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> | Min                                                                      | Max  |
|             |              | Nom (V)                          | Min (V) | Max (V) | mA              | Ω                                 |                                   | mA              | μA                               | V               |                                                                          |      |
| BZX84C2V4T  | RB           | 2.4                              | 2.2     | 2.6     | 5.0             | 100                               | 600                               | 1.0             | 50                               | 1.0             | -3.5                                                                     | 0    |
| BZX84C2V7T  | RC           | 2.7                              | 2.5     | 2.9     | 5.0             | 100                               | 600                               | 1.0             | 20                               | 1.0             | -3.5                                                                     | 0    |
| BZX84C3V0T  | RD           | 3.0                              | 2.8     | 3.2     | 5.0             | 95                                | 600                               | 1.0             | 20                               | 1.0             | -3.5                                                                     | 0    |
| BZX84C3V3T  | RE           | 3.3                              | 3.1     | 3.5     | 5.0             | 95                                | 600                               | 1.0             | 5.0                              | 1.0             | -3.5                                                                     | 0    |
| BZX84C3V6T  | RF           | 3.6                              | 3.4     | 3.8     | 5.0             | 90                                | 600                               | 1.0             | 5.0                              | 1.0             | -3.5                                                                     | 0    |
| BZX84C3V9T  | RG           | 3.9                              | 3.7     | 4.1     | 5.0             | 90                                | 600                               | 1.0             | 3.0                              | 1.0             | -3.5                                                                     | 0    |
| BZX84C4V3T  | RH           | 4.3                              | 4.0     | 4.6     | 5.0             | 90                                | 600                               | 1.0             | 3.0                              | 1.0             | -3.5                                                                     | 0    |
| BZX84C4V7T  | R1           | 4.7                              | 4.4     | 5.0     | 5.0             | 80                                | 600                               | 1.0             | 3.0                              | 2.0             | -3.5                                                                     | 0.2  |
| BZX84C5V1T  | R2           | 5.1                              | 4.8     | 5.4     | 5.0             | 60                                | 500                               | 1.0             | 2.0                              | 2.0             | -2.7                                                                     | 1.2  |
| BZX84C5V6T  | R3           | 5.6                              | 5.2     | 6.0     | 5.0             | 40                                | 480                               | 1.0             | 1.0                              | 2.0             | -2.0                                                                     | 2.5  |
| BZX84C6V2T  | R4           | 6.2                              | 5.8     | 6.6     | 5.0             | 10                                | 400                               | 1.0             | 3.0                              | 4.0             | 0.4                                                                      | 3.7  |
| BZX84C6V8T  | R5           | 6.8                              | 6.4     | 7.2     | 5.0             | 15                                | 150                               | 1.0             | 2.0                              | 4.0             | 1.2                                                                      | 4.5  |
| BZX84C7V5T  | R6           | 7.5                              | 7.0     | 7.9     | 5.0             | 15                                | 80                                | 1.0             | 1.0                              | 5.0             | 2.5                                                                      | 5.3  |
| BZX84C8V2T  | R7           | 8.2                              | 7.7     | 8.7     | 5.0             | 15                                | 80                                | 1.0             | 0.7                              | 5.0             | 3.2                                                                      | 6.2  |
| BZX84C9V1T  | R8           | 9.1                              | 8.5     | 9.6     | 5.0             | 15                                | 80                                | 1.0             | 0.5                              | 6.0             | 3.8                                                                      | 7.0  |
| BZX84C10T   | R9           | 10                               | 9.4     | 10.6    | 5.0             | 20                                | 100                               | 1.0             | 0.2                              | 7.0             | 4.5                                                                      | 8.0  |
| BZX84C11T   | P1           | 11                               | 10.4    | 11.6    | 5.0             | 20                                | 150                               | 1.0             | 0.1                              | 8.0             | 5.4                                                                      | 9.0  |
| BZX84C12T   | P2           | 12                               | 11.4    | 12.7    | 5.0             | 25                                | 150                               | 1.0             | 0.1                              | 8.0             | 6.0                                                                      | 10.0 |
| BZX84C13T   | P3           | 13                               | 12.4    | 14.1    | 5.0             | 30                                | 150                               | 1.0             | 0.1                              | 8.0             | 7.0                                                                      | 11.0 |
| BZX84C15T   | P4           | 15                               | 13.8    | 15.6    | 5.0             | 30                                | 170                               | 1.0             | 0.1                              | 10.5            | 9.2                                                                      | 13.0 |
| BZX84C16T   | P5           | 16                               | 15.3    | 17.1    | 5.0             | 40                                | 200                               | 1.0             | 0.1                              | 11.2            | 10.4                                                                     | 14.0 |
| BZX84C18T   | P6           | 18                               | 16.8    | 19.1    | 5.0             | 45                                | 200                               | 1.0             | 0.1                              | 12.6            | 12.4                                                                     | 16.0 |
| BZX84C20T   | P7           | 20                               | 18.8    | 21.2    | 5.0             | 55                                | 225                               | 1.0             | 0.1                              | 14.0            | 14.4                                                                     | 18.0 |
| BZX84C22T   | P8           | 22                               | 20.8    | 23.3    | 5.0             | 55                                | 225                               | 1.0             | 0.1                              | 15.4            | 16.4                                                                     | 20.0 |
| BZX84C24T   | P9           | 24                               | 22.8    | 25.6    | 5.0             | 70                                | 250                               | 1.0             | 0.1                              | 16.8            | 18.4                                                                     | 22.0 |
| BZX84C27T   | PA           | 27                               | 25.1    | 28.9    | 2.0             | 80                                | 250                               | 0.5             | 0.1                              | 18.9            | 21.4                                                                     | 25.3 |
| BZX84C30T   | PB           | 30.0                             | 28.0    | 32.0    | 2.0             | 80                                | 300                               | 0.5             | 0.1                              | 21.0            | 24.4                                                                     | 29.4 |
| BZX84C33T   | PC           | 33.0                             | 31.0    | 35.0    | 2.0             | 80                                | 300                               | 0.5             | 0.1                              | 23.1            | 27.4                                                                     | 33.4 |
| BZX84C36T   | PD           | 36.0                             | 34.0    | 38.0    | 2.0             | 90                                | 325                               | 0.5             | 0.1                              | 25.2            | 30.4                                                                     | 37.4 |
| BZX84C39T   | PE           | 39.0                             | 37.0    | 41.0    | 2.0             | 130                               | 350                               | 0.5             | 0.1                              | 27.3            | 33.4                                                                     | 41.2 |

Notes: 5. Short duration pulse test used to minimize self-heating effect.  
6. f = 1KHz.

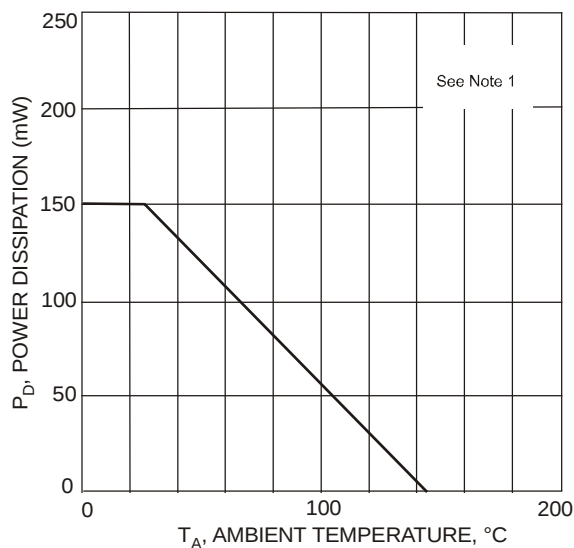


Fig. 1. Power Derating Curve

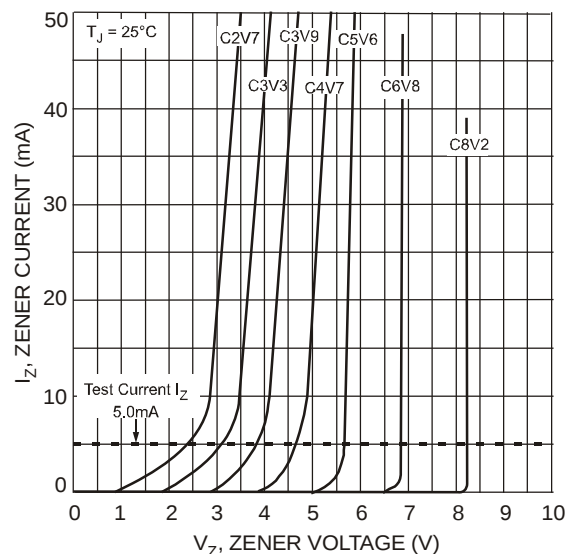


Fig. 2 Typical Zener Breakdown Characteristics

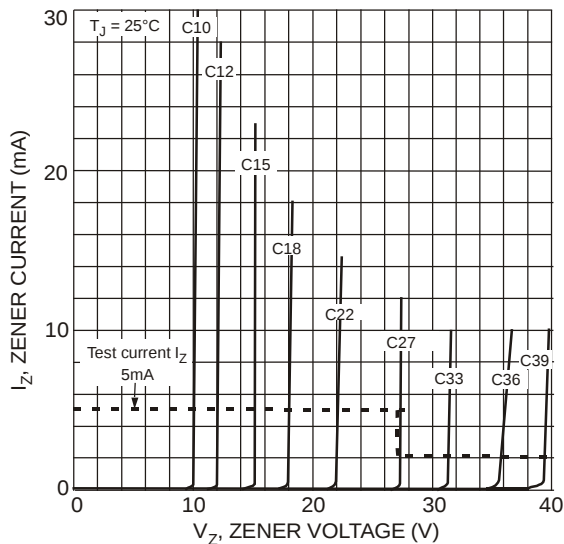


Fig. 3. Typical Zener Breakdown Characteristics

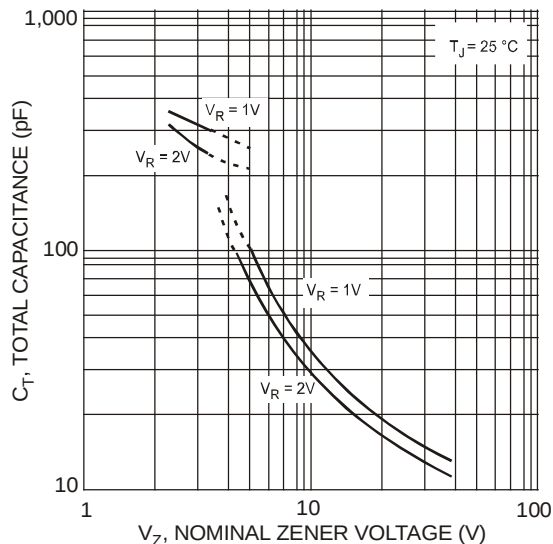


Fig. 4. Typical Total Capacitance vs. Nominal Zener Voltage

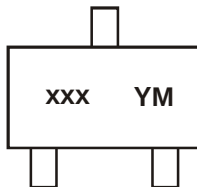
## Ordering Information (Note 7)

| Part Number        | Case    | Packaging        |
|--------------------|---------|------------------|
| (Type Number)-7-F* | SOT-523 | 3000/Tape & Reel |

\*Add "-7-F" to the appropriate type number in Electrical Characteristics Table on page 2 example: 6.2V Zener = BZX84C6V2T-7-F.

Notes: 7. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



xxx = Product Type Marking Code  
(See Electrical Characteristics Table)  
YM = Date Code Marking  
Y = Year (ex: N = 2002)  
M = Month (ex: 9 = September)

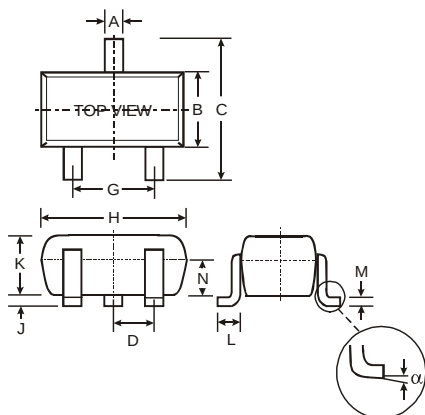
### Date Code Key

| Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2111 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | N    | P    | R    | S    | T    | U    | V    | W    | X    | Y    | Z    |

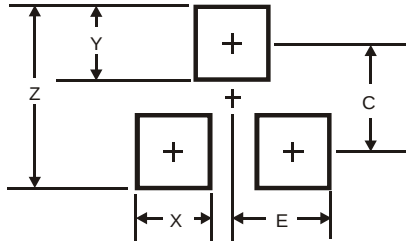
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

## Package Outline Dimensions



| SOT-523              |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 0.15 | 0.30 | 0.22 |
| B                    | 0.75 | 0.85 | 0.80 |
| C                    | 1.45 | 1.75 | 1.60 |
| D                    | —    | —    | 0.50 |
| G                    | 0.90 | 1.10 | 1.00 |
| H                    | 1.50 | 1.70 | 1.60 |
| J                    | 0.00 | 0.10 | 0.05 |
| K                    | 0.60 | 0.80 | 0.75 |
| L                    | 0.10 | 0.30 | 0.22 |
| M                    | 0.10 | 0.20 | 0.12 |
| N                    | 0.45 | 0.65 | 0.50 |
| α                    | 0°   | 8°   | —    |
| All Dimensions in mm |      |      |      |

## Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 1.8           |
| X          | 0.4           |
| Y          | 0.51          |
| C          | 1.3           |
| E          | 0.7           |

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