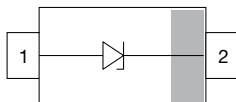
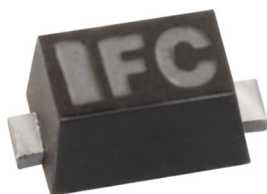


## Small Signal Zener Diodes



### LINKS TO ADDITIONAL RESOURCES



### FEATURES

- With the BZX584C... Series Vishay offers a Z-diode in the tiny SOD-523 plastic package. Made for space sensitive applications the BZX584C... Series has a Zener voltage tolerance of  $\pm 5\%$
- AEC-Q101 qualified available
- Base P/N-G3 - RoHS-compliant, commercial grade
- Base P/N-HG3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



| PRIMARY CHARACTERISTICS |               |      |
|-------------------------|---------------|------|
| PARAMETER               | VALUE         | UNIT |
| $V_Z$ range nom.        | 2.2 to 36     | V    |
| Test current $I_{ZT}$   | 2; 5          | mA   |
| $V_Z$ specification     | Pulse current |      |
| Circuit configuration   | Single        |      |

| ORDERING INFORMATION |                   |                             |                        |
|----------------------|-------------------|-----------------------------|------------------------|
| DEVICE NAME          | ORDERING CODE     | TAPED UNITS PER REEL        | MINIMUM ORDER QUANTITY |
| BZX584Cxxx- Series   | BZX584Cxxx-G3-08  | 8000 (8 mm tape on 7" reel) | 8000                   |
|                      | BZX584Cxxx-HG3-08 |                             |                        |

#### Note

- xxx stands for any part number / voltage group, as shown in the table of page 2

| PACKAGE      |         |                                      |                                   |                              |
|--------------|---------|--------------------------------------|-----------------------------------|------------------------------|
| PACKAGE NAME | WEIGHT  | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL        | SOLDERING CONDITIONS         |
| SOD-523      | 1.32 mg | UL 94 V-0                            | MSL level 1 (according J-STD-020) | Peak temperature max. 260 °C |

| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified) |                                                                             |            |             |      |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------|-------------|------|--|
| PARAMETER                                                                         | TEST CONDITION                                                              | SYMBOL     | VALUE       | UNIT |  |
| Power dissipation                                                                 | On FR-4 board with recommended soldering footprint                          | $P_{tot}$  | 200         | mW   |  |
|                                                                                   | On FR-4 board with 5 mm x 5 mm footprint                                    |            | 300         | mW   |  |
| Thermal resistance junction to ambient air                                        | According to JEDEC® 51-3 on FR-4 board with recommended soldering footprint | $R_{thJA}$ | 600         | K/W  |  |
|                                                                                   | According to JEDEC 51-3 on FR-4 board with 5 mm x 5 mm footprint            |            | 400         | K/W  |  |
| Thermal resistance junction to lead                                               | Infinite heatsink                                                           | $R_{thJL}$ | 200         | K/W  |  |
| Junction temperature                                                              |                                                                             | $T_j$      | 150         | °C   |  |
| Storage temperature range                                                         |                                                                             | $T_{stg}$  | -65 to +150 | °C   |  |

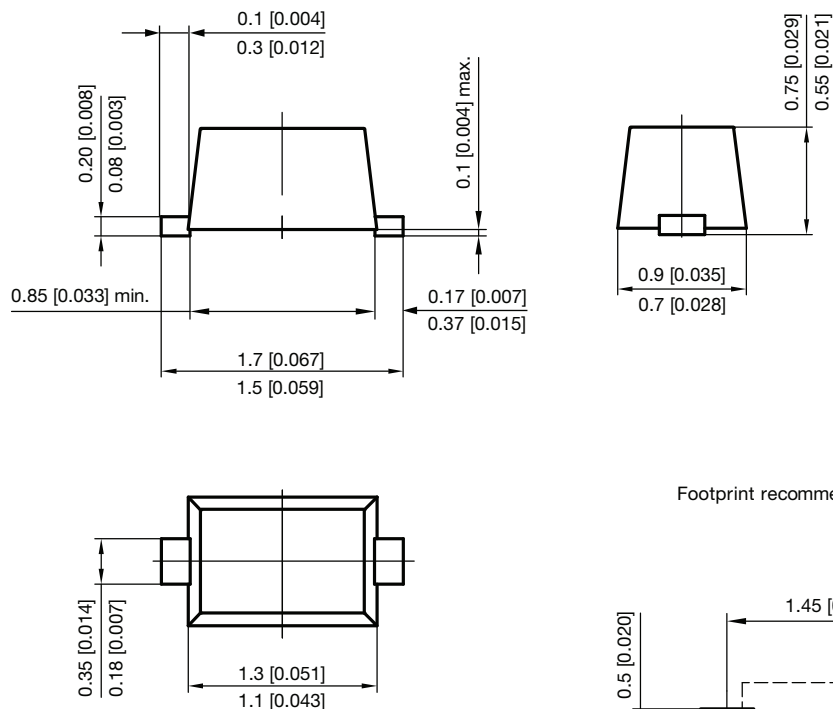


| ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |              |                                    |      |      |              |           |                         |                 |                    |                       |                                          |      |
|---------------------------------------------------------------------------------------------------|--------------|------------------------------------|------|------|--------------|-----------|-------------------------|-----------------|--------------------|-----------------------|------------------------------------------|------|
| PART NUMBER                                                                                       | MARKING CODE | ZENER VOLTAGE RANGE <sup>(1)</sup> |      |      | TEST CURRENT |           | REVERSE LEAKAGE CURRENT |                 | DYNAMIC RESISTANCE |                       | TEMPERATURE COEFFICIENT OF ZENER VOLTAGE |      |
|                                                                                                   |              | $V_Z$ at $I_{ZT1}$                 |      |      | $I_{ZT1}$    | $I_{ZT2}$ | $I_R$ at $V_R$          |                 | $Z_Z$ at $I_{ZT1}$ | $Z_{ZK}$ at $I_{ZT2}$ | $\alpha_{VZ}$ at $I_{ZT1}$               |      |
|                                                                                                   |              | V                                  |      |      | mA           |           | $\mu\text{A}$           | V               | $\Omega$           |                       | $10^{-4}/^{\circ}\text{C}$               |      |
|                                                                                                   |              | MIN.                               | NOM. | MAX. |              |           | MAX.                    |                 | MAX.               | MAX.                  | MIN.                                     | MAX. |
| BZX584C2V2                                                                                        | :T           | 2                                  | 2.2  | 2.4  | 5            | 1         | 100                     | 1               | 65 ( $\leq 120$ )  | 250 ( $\leq 600$ )    | -9                                       | -4   |
| BZX584C2V4                                                                                        | :2           | 2.2                                | 2.4  | 2.6  | 5            | 1         | 50                      | 1               | 70 ( $\leq 100$ )  | 275 ( $\leq 600$ )    | -9                                       | -4   |
| BZX584C2V7                                                                                        | :3           | 2.5                                | 2.7  | 2.9  | 5            | 1         | 20                      | 1               | 75 ( $\leq 100$ )  | 300 ( $\leq 600$ )    | -9                                       | -4   |
| BZX584C3V0                                                                                        | :4           | 2.8                                | 3.0  | 3.2  | 5            | 1         | 10                      | 1               | 80 ( $\leq 100$ )  | 325 ( $\leq 600$ )    | -9                                       | -3   |
| BZX584C3V3                                                                                        | :5           | 3.1                                | 3.3  | 3.5  | 5            | 1         | 5                       | 1               | 85 ( $\leq 95$ )   | 350 ( $\leq 600$ )    | -8                                       | -3   |
| BZX584C3V6                                                                                        | :6           | 3.4                                | 3.6  | 3.8  | 5            | 1         | 5                       | 1               | 85 ( $\leq 95$ )   | 375 ( $\leq 600$ )    | -8                                       | -3   |
| BZX584C3V9                                                                                        | :7           | 3.7                                | 3.9  | 4.1  | 5            | 1         | 3                       | 1               | 85 ( $\leq 90$ )   | 400 ( $\leq 600$ )    | -7                                       | -3   |
| BZX584C4V3                                                                                        | :8           | 4                                  | 4.3  | 4.6  | 5            | 1         | 3                       | 1               | 80 ( $\leq 90$ )   | 410 ( $\leq 600$ )    | -6                                       | -1   |
| BZX584C4V7                                                                                        | :9           | 4.4                                | 4.7  | 5    | 5            | 1         | 3                       | 2               | 50 ( $\leq 80$ )   | 425 ( $\leq 500$ )    | -5                                       | 2    |
| BZX584C5V1                                                                                        | :1           | 4.8                                | 5.1  | 5.4  | 5            | 1         | 2                       | 2               | 40 ( $\leq 60$ )   | 400 ( $\leq 480$ )    | -3                                       | 4    |
| BZX584C5V6                                                                                        | :0           | 5.2                                | 5.6  | 6    | 5            | 1         | 1                       | 2               | 15 ( $\leq 40$ )   | 80 ( $\leq 400$ )     | -2                                       | 6    |
| BZX584C6V2                                                                                        | :1           | 5.8                                | 6.2  | 6.6  | 5            | 1         | 3                       | 4               | 6 ( $\leq 10$ )    | 40 ( $\leq 150$ )     | -1                                       | 7    |
| BZX584C6V8                                                                                        | :2           | 6.4                                | 6.8  | 7.2  | 5            | 1         | 2                       | 4               | 6 ( $\leq 15$ )    | 30 ( $\leq 80$ )      | 2                                        | 7    |
| BZX584C7V5                                                                                        | :3           | 7                                  | 7.5  | 7.9  | 5            | 1         | 1                       | 5               | 6 ( $\leq 15$ )    | 30 ( $\leq 80$ )      | 3                                        | 7    |
| BZX584C8V2                                                                                        | :4           | 7.7                                | 8.2  | 8.7  | 5            | 1         | 0.7                     | 5               | 6 ( $\leq 15$ )    | 40 ( $\leq 80$ )      | 4                                        | 7    |
| BZX584C9V1                                                                                        | :5           | 8.5                                | 9.1  | 9.6  | 5            | 1         | 0.5                     | 6               | 6 ( $\leq 15$ )    | 40 ( $\leq 100$ )     | 5                                        | 8    |
| BZX584C10                                                                                         | :6           | 9.4                                | 10   | 10.6 | 5            | 1         | 0.2                     | 7               | 8 ( $\leq 20$ )    | 50 ( $\leq 150$ )     | 5                                        | 8    |
| BZX584C11                                                                                         | :7           | 10.4                               | 11   | 11.6 | 5            | 1         | 0.1                     | 8               | 10 ( $\leq 20$ )   | 50 ( $\leq 150$ )     | 5                                        | 9    |
| BZX584C12                                                                                         | :8           | 11.4                               | 12   | 12.7 | 5            | 1         | 0.1                     | 8               | 10 ( $\leq 25$ )   | 50 ( $\leq 150$ )     | 6                                        | 9    |
| BZX584C13                                                                                         | :9           | 12.4                               | 13   | 14.1 | 5            | 1         | 0.1                     | 8               | 10 ( $\leq 30$ )   | 50 ( $\leq 170$ )     | 7                                        | 9    |
| BZX584C15                                                                                         | :1           | 13.8                               | 15   | 15.6 | 5            | 1         | 0.1                     | 8               | 10 ( $\leq 30$ )   | 50 ( $\leq 200$ )     | 7                                        | 9    |
| BZX584C16                                                                                         | :2           | 15.3                               | 16   | 17.1 | 5            | 1         | 0.05                    | 0.7 $V_{Znom.}$ | 10 ( $\leq 40$ )   | 50 ( $\leq 200$ )     | 8                                        | 9.5  |
| BZX584C18                                                                                         | :3           | 16.8                               | 18   | 19.1 | 5            | 1         | 0.05                    | 0.7 $V_{Znom.}$ | 10 ( $\leq 45$ )   | 50 ( $\leq 225$ )     | 8                                        | 9.5  |
| BZX584C20                                                                                         | :4           | 18.8                               | 20   | 21.2 | 5            | 1         | 0.05                    | 0.7 $V_{Znom.}$ | 15 ( $\leq 55$ )   | 60 ( $\leq 225$ )     | 8                                        | 10   |
| BZX584C22                                                                                         | :5           | 20.8                               | 22   | 23.3 | 5            | 1         | 0.05                    | 0.7 $V_{Znom.}$ | 20 ( $\leq 55$ )   | 60 ( $\leq 250$ )     | 8                                        | 10   |
| BZX584C24                                                                                         | :6           | 22.8                               | 24   | 25.6 | 5            | 1         | 0.05                    | 0.7 $V_{Znom.}$ | 25 ( $\leq 70$ )   | 60 ( $\leq 250$ )     | 8                                        | 10   |
| BZX584C27                                                                                         | :7           | 25.1                               | 27   | 28.9 | 2            | 0.5       | 0.05                    | 0.7 $V_{Znom.}$ | 25 ( $\leq 80$ )   | 65 ( $\leq 300$ )     | 8                                        | 10   |
| BZX584C30                                                                                         | :K           | 28                                 | 30   | 32   | 2            | 0.5       | 0.05                    | 0.7 $V_{Znom.}$ | 30 ( $\leq 80$ )   | 70 ( $\leq 300$ )     | 8                                        | 10   |
| BZX584C33                                                                                         | :9           | 31                                 | 33   | 35   | 2            | 0.5       | 0.05                    | 0.7 $V_{Znom.}$ | 35 ( $\leq 80$ )   | 75 ( $\leq 325$ )     | 8                                        | 10   |
| BZX584C36                                                                                         | :Q           | 34                                 | 36   | 38   | 2            | 0.5       | 0.05                    | 0.7 $V_{Znom.}$ | 35 ( $\leq 90$ )   | 80 ( $\leq 350$ )     | 8                                        | 10   |

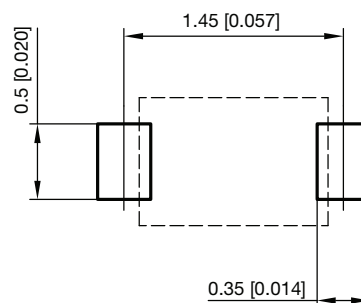
**Note**(1) Pulse test  $t_P = 10\text{ ms}$



**PACKAGE DIMENSIONS** in millimeters [inches]: **SOD-523**



Footprint recommendation:



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23093



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