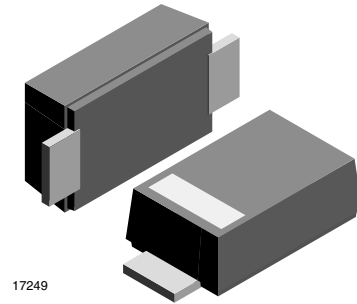
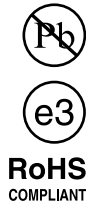


## Zener Diodes

### Features

- Silicon planar zener diodes
- Low profile surface-mount package
- Low leakage current
- Excellent stability
- High temperature soldering: 260 °C/10 s at terminals
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



### Mechanical Data

**Case:** JEDEC DO219AB (SMF<sup>®</sup>) plastic case

**Weight:** approx. 15 mg

### Packaging codes/options:

GS18/10K per 13" reel, (8 mm tape), 50K/box

GS08/3K per 7" reel, (8 mm tape), 30K/box

### Absolute Maximum Ratings

T<sub>amb</sub> = 25 °C, unless otherwise specified

| Parameter                                   | Test condition                    | Symbol           | Value             | Unit |
|---------------------------------------------|-----------------------------------|------------------|-------------------|------|
| Power dissipation                           | T <sub>L</sub> = 80 °C            | P <sub>tot</sub> | 2.3               | W    |
|                                             | T <sub>A</sub> = 25 °C            | P <sub>tot</sub> | 0.8 <sup>1)</sup> | W    |
| Non-repetitive peak pulse power dissipation | 100 µs square pulse <sup>2)</sup> | P <sub>ZSM</sub> | 300               | W    |

Notes:

<sup>1)</sup> Mounted on epoxy-glass PCB with 3 mm x 3 mm Cu pads (≥ 40 µm thick)

<sup>2)</sup> T<sub>j</sub> = 25 °C prior to surge

### Thermal Characteristics

T<sub>amb</sub> = 25 °C, unless otherwise specified

| Parameter                                                | Test condition | Symbol            | Value         | Unit |
|----------------------------------------------------------|----------------|-------------------|---------------|------|
| Thermal resistance junction to ambient air <sup>1)</sup> |                | R <sub>thJA</sub> | 180           | K/W  |
| Thermal resistance junction to lead                      |                | R <sub>thJL</sub> | 30            | K/W  |
| Maximum junction temperature                             |                | T <sub>j</sub>    | 150           | °C   |
| Storage temperature range                                |                | T <sub>stg</sub>  | - 55 to + 150 | °C   |

Notes:

<sup>1)</sup> Mounted on epoxy-glass PCB with 3 mm x 3 mm Cu pads (≥ 40 µm thick)

### Electrical Characteristics

T<sub>amb</sub> = 25 °C, unless otherwise specified

| Parameter       | Test condition         | Symbol         | Min. | Typ. | Max. | Unit |
|-----------------|------------------------|----------------|------|------|------|------|
| Forward voltage | I <sub>F</sub> = 0.2 A | V <sub>F</sub> |      |      | 1.2  | V    |

# BZD17C3V6P to BZD17C200P



Vishay Semiconductors

## Electrical Characteristics

$T_J = 25^\circ\text{C}$ , unless otherwise specified

| Part number | Marking code | Working voltage <sup>1)</sup> |      | Differential resistance |      | Temperature coefficient |        | Test current | Reverse leakage current |       |
|-------------|--------------|-------------------------------|------|-------------------------|------|-------------------------|--------|--------------|-------------------------|-------|
|             |              | $V_Z$ at $I_{ZT}$             |      | $r_{dif}$ at $I_Z$      |      | $\alpha_Z$ at $I_Z$     |        | $I_{ZT}$     | $I_R$                   | $V_R$ |
|             |              | V                             |      | $\Omega$                |      | $\%/^\circ\text{C}$     |        | mA           | $\mu\text{A}$           | V     |
|             |              | min.                          | max. | typ.                    | max. | min.                    | max.   |              | max.                    |       |
| BZD17C3V6P  | I0           | 3.4                           | 3.8  | 4                       | 8    | - 0.14                  | - 0.04 | 100          | 100                     | 1     |
| BZD17C3V9P  | I1           | 3.7                           | 4.1  | 4                       | 8    | - 0.14                  | - 0.04 | 100          | 50                      | 1     |
| BZD17C4V3P  | I2           | 4                             | 4.6  | 4                       | 7    | - 0.12                  | - 0.02 | 100          | 25                      | 1     |
| BZD17C4V7P  | I3           | 4.4                           | 5    | 3                       | 7    | - 0.1                   | 0      | 100          | 10                      | 1     |
| BZD17C5V1P  | I4           | 4.8                           | 5.4  | 3                       | 6    | - 0.08                  | 0.02   | 100          | 5                       | 1     |
| BZD17C5V6P  | I5           | 5.2                           | 6    | 2                       | 4    | - 0.04                  | 0.04   | 100          | 10                      | 2     |
| BZD17C6V2P  | I6           | 5.8                           | 6.6  | 2                       | 3    | - 0.01                  | 0.06   | 100          | 5                       | 2     |
| BZD17C6V8P  | I7           | 6.4                           | 7.2  | 1                       | 3    | 0                       | 0.07   | 100          | 10                      | 3     |
| BZD17C7V5P  | I8           | 7                             | 7.9  | 1                       | 2    | 0                       | 0.07   | 100          | 50                      | 3     |
| BZD17C8V2P  | I9           | 7.7                           | 8.7  | 1                       | 2    | 0.03                    | 0.08   | 100          | 10                      | 3     |
| BZD17C9V1P  | J0           | 8.5                           | 9.6  | 2                       | 4    | 0.03                    | 0.08   | 50           | 10                      | 5     |
| BZD17C10P   | J1           | 9.4                           | 10.6 | 2                       | 4    | 0.05                    | 0.09   | 50           | 7                       | 7.5   |
| BZD17C11P   | J2           | 10.4                          | 11.6 | 4                       | 7    | 0.05                    | 0.1    | 50           | 4                       | 8.2   |
| BZD17C12P   | J3           | 11.4                          | 12.7 | 4                       | 7    | 0.05                    | 0.1    | 50           | 3                       | 9.1   |
| BZD17C13P   | J4           | 12.4                          | 14.1 | 5                       | 10   | 0.05                    | 0.1    | 50           | 2                       | 10    |
| BZD17C15P   | J5           | 13.8                          | 15.6 | 5                       | 10   | 0.05                    | 0.1    | 50           | 1                       | 11    |
| BZD17C16P   | J6           | 15.3                          | 17.1 | 6                       | 15   | 0.06                    | 0.11   | 25           | 1                       | 12    |
| BZD17C18P   | J7           | 16.8                          | 19.1 | 6                       | 15   | 0.06                    | 0.11   | 25           | 1                       | 13    |
| BZD17C20P   | J8           | 18.8                          | 21.2 | 6                       | 15   | 0.06                    | 0.11   | 25           | 1                       | 15    |
| BZD17C22P   | J9           | 20.8                          | 23.3 | 6                       | 15   | 0.06                    | 0.11   | 25           | 1                       | 16    |
| BZD17C24P   | K0           | 22.8                          | 25.6 | 7                       | 15   | 0.06                    | 0.11   | 25           | 1                       | 18    |
| BZD17C27P   | K1           | 25.1                          | 28.9 | 7                       | 15   | 0.06                    | 0.11   | 25           | 1                       | 20    |
| BZD17C30P   | K2           | 28                            | 32   | 8                       | 15   | 0.06                    | 0.11   | 25           | 1                       | 22    |
| BZD17C33P   | K3           | 31                            | 35   | 8                       | 15   | 0.06                    | 0.11   | 25           | 1                       | 24    |
| BZD17C36P   | K4           | 34                            | 38   | 21                      | 40   | 0.06                    | 0.11   | 10           | 1                       | 27    |
| BZD17C39P   | K5           | 37                            | 41   | 21                      | 40   | 0.06                    | 0.11   | 10           | 1                       | 30    |
| BZD17C43P   | K6           | 40                            | 46   | 24                      | 45   | 0.07                    | 0.12   | 10           | 1                       | 33    |
| BZD17C47P   | K7           | 44                            | 50   | 24                      | 45   | 0.07                    | 0.12   | 10           | 1                       | 36    |
| BZD17C51P   | K8           | 48                            | 54   | 25                      | 60   | 0.07                    | 0.12   | 10           | 1                       | 39    |
| BZD17C56P   | K9           | 52                            | 60   | 25                      | 60   | 0.07                    | 0.12   | 10           | 1                       | 43    |
| BZD17C62P   | L0           | 58                            | 66   | 25                      | 80   | 0.08                    | 0.13   | 10           | 1                       | 47    |
| BZD17C68P   | L1           | 64                            | 72   | 25                      | 80   | 0.08                    | 0.13   | 10           | 1                       | 51    |
| BZD17C75P   | L2           | 70                            | 79   | 30                      | 100  | 0.08                    | 0.13   | 10           | 1                       | 56    |
| BZD17C82P   | L3           | 77                            | 87   | 30                      | 100  | 0.08                    | 0.13   | 10           | 1                       | 62    |
| BZD17C91P   | L4           | 85                            | 96   | 60                      | 200  | 0.08                    | 0.13   | 5            | 1                       | 68    |
| BZD17C100P  | L5           | 94                            | 106  | 60                      | 200  | 0.09                    | 0.13   | 5            | 1                       | 75    |
| BZD17C110P  | L6           | 104                           | 116  | 80                      | 250  | 0.09                    | 0.13   | 5            | 1                       | 82    |
| BZD17C120P  | L7           | 114                           | 127  | 80                      | 250  | 0.09                    | 0.13   | 5            | 1                       | 91    |
| BZD17C130P  | L8           | 124                           | 141  | 110                     | 300  | 0.09                    | 0.13   | 5            | 1                       | 100   |
| BZD17C150P  | L9           | 138                           | 156  | 130                     | 300  | 0.09                    | 0.13   | 5            | 1                       | 110   |
| BZD17C160P  | M0           | 153                           | 171  | 150                     | 350  | 0.09                    | 0.13   | 5            | 1                       | 120   |
| BZD17C180P  | M1           | 168                           | 191  | 180                     | 400  | 0.09                    | 0.13   | 5            | 1                       | 130   |
| BZD17C200P  | M2           | 188                           | 212  | 200                     | 500  | 0.09                    | 0.13   | 5            | 1                       | 150   |

Note:

<sup>1)</sup> Pulse test:  $t_p \leq 5 \text{ ms}$

## Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

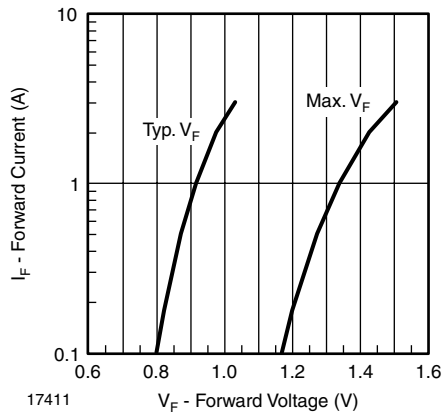


Figure 1. Forward Current vs. Forward Voltage

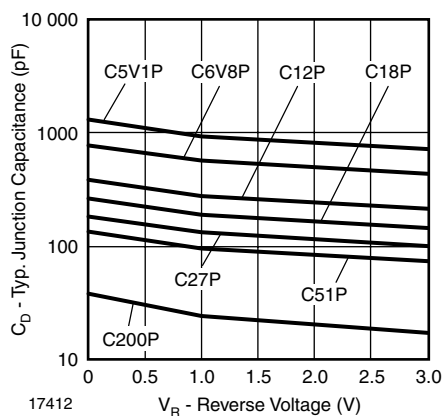


Figure 2. Typ. Diode Capacitance vs. Reverse Voltage

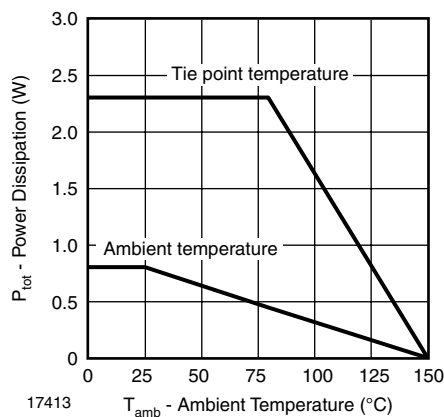


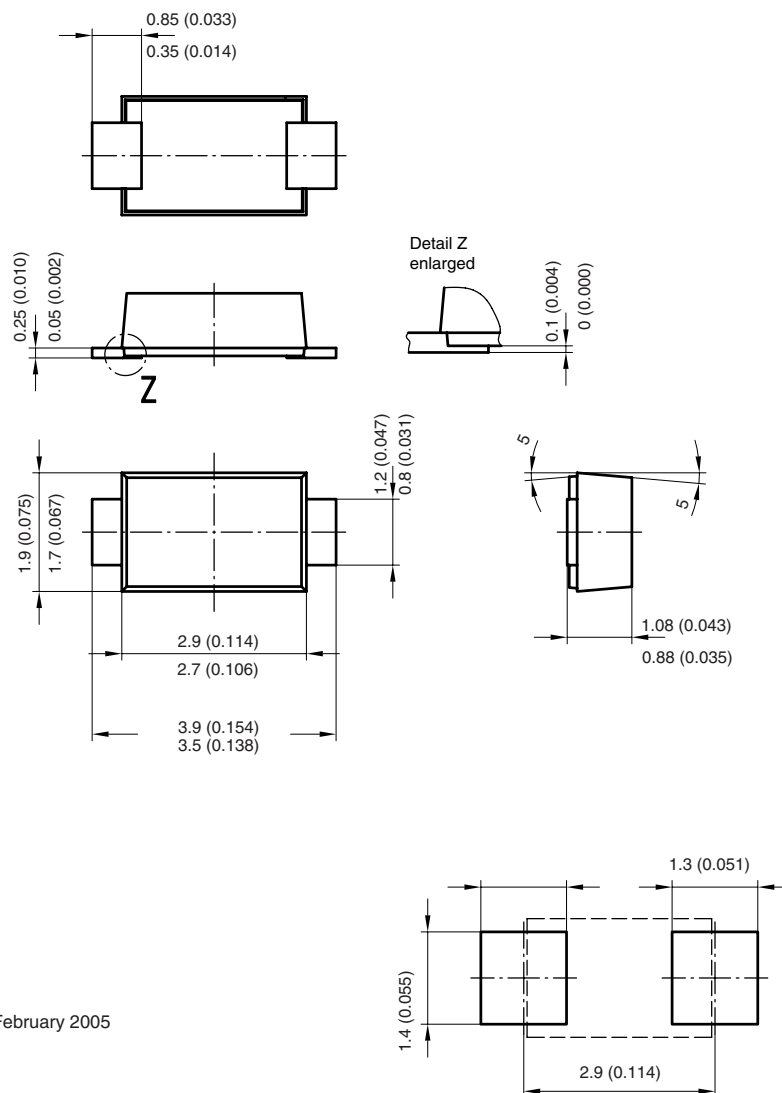
Figure 3. Power Dissipation vs. Ambient Temperature

# BZD17C3V6P to BZD17C200P



Vishay Semiconductors

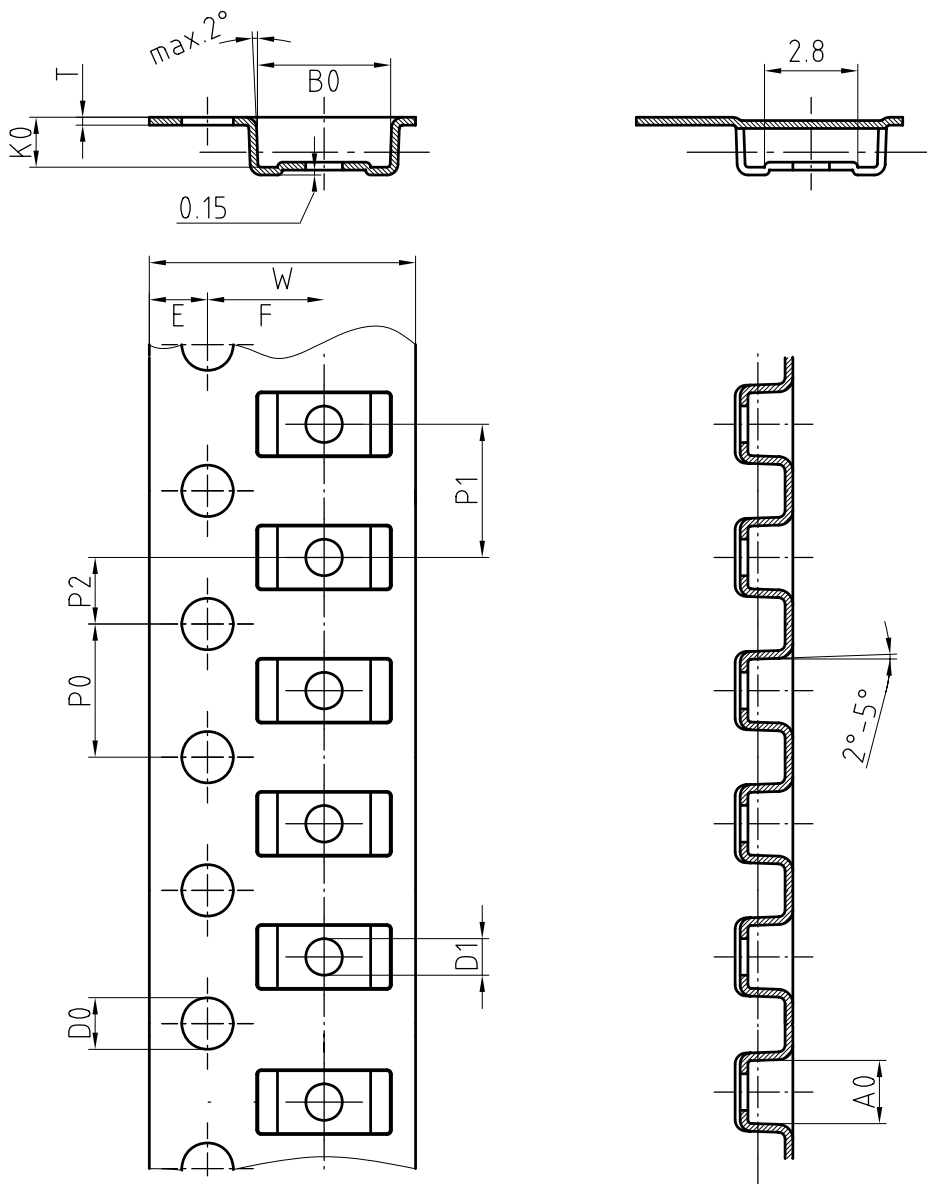
Package Dimensions in millimeters (inches): DO219AB



Created - Date: 15. February 2005

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## Blisertape for SMF Dimensions in millimeters



| Mat: | A0  | B0  | K0  | W   | T     | P0  | P2  | P1  | D0  | D1 | E    | F   |
|------|-----|-----|-----|-----|-------|-----|-----|-----|-----|----|------|-----|
| PS   | 1.9 | 4.0 | 1.5 | 8.0 | 0.235 | 4.0 | 2.0 | 4.0 | 1.5 | 1  | 1.75 | 3.5 |

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