

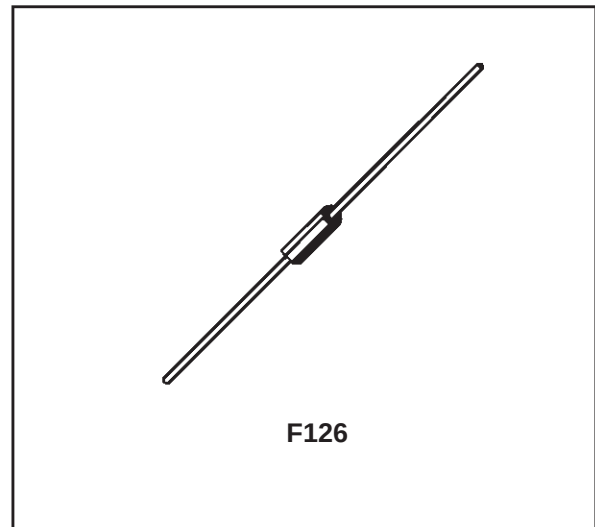
## 2W ZENER DIODES

### FEATURES

- VOLTAGE RANGE : 5.1 V to 200 V
- HERMETICALLY SEALED PLASTIC CASE : F126 PACKAGE
- HIGH SURGE CAPABILITY : 55 W (10 ms) .

### DESCRIPTION

2 W silicon Zener diodes.



### ABSOLUTE RATINGS (T<sub>amb</sub> = 25°C)

| Symbol                             | Parameter                                                          |                         | Value                | Unit     |
|------------------------------------|--------------------------------------------------------------------|-------------------------|----------------------|----------|
| P                                  | Power dissipation on infinite heatsink                             | T <sub>amb</sub> = 55°C | 2                    | W        |
| T <sub>stg</sub><br>T <sub>j</sub> | Storage temperature range<br>Maximum junction temperature          |                         | - 65 to + 175<br>175 | °C<br>°C |
| T <sub>L</sub>                     | Maximum lead temperature for soldering during 10s at 5mm from case |                         | 230                  | °C       |

### THERMAL RESISTANCES

| Symbol                | Parameter                                                        | Value | Unit |
|-----------------------|------------------------------------------------------------------|-------|------|
| R <sub>th</sub> (j-l) | Junction to lead                                                 | 60    | °C/W |
| R <sub>th</sub> (j-a) | Junction to ambient on printed circuit on recommended pad layout | 100   | °C/W |

## BZV47C5V1 / BZV47C200

### ELECTRICAL CHARACTERISTIC (T<sub>amb</sub> = 25°C)

| TYPES     | V <sub>ZT</sub> @ I <sub>ZT</sub> |             | r <sub>ZK</sub> / I <sub>ZK</sub><br>max. | I <sub>ZT</sub><br>(1) | ∞V <sub>Z</sub><br>typ. | I <sub>R</sub> / V <sub>R</sub><br>max. | V <sub>R</sub> | I <sub>ZM</sub><br>T <sub>amb</sub> =55°C<br>(2) | I <sub>ZSM</sub><br>(3) |
|-----------|-----------------------------------|-------------|-------------------------------------------|------------------------|-------------------------|-----------------------------------------|----------------|--------------------------------------------------|-------------------------|
|           | min.<br>(1)                       | max.<br>(1) |                                           |                        |                         |                                         |                |                                                  |                         |
|           | V                                 | V           | Ω                                         | mA                     | 10 <sup>-4</sup> /°C    | μA                                      | V              | mA                                               | A                       |
| BZV47C5V1 | 4.8                               | 5.4         | 5                                         | 100                    | 1                       | 5                                       | 1              | 370                                              | 7.8                     |
| BZV47C5V6 | 5.2                               | 6           | 2                                         | 100                    | 2.5                     | 5                                       | 1              | 330                                              | 7.1                     |
| BZV47C6V2 | 5.8                               | 6.6         | 2                                         | 100                    | 3.2                     | 5                                       | 1              | 300                                              | 6.4                     |
| BZV47C7V5 | 7                                 | 7.9         | 2                                         | 100                    | 4.5                     | 5                                       | 2              | 250                                              | 5.4                     |
| BZV47C10  | 9.4                               | 10.6        | 4                                         | 50                     | 5.5                     | 5                                       | 7.6            | 185                                              | 4                       |
| BZV47C12  | 11.4                              | 12.7        | 7                                         | 50                     | 6.5                     | 1                                       | 9.1            | 155                                              | 3.3                     |
| BZV47C15  | 13.8                              | 15.6        | 10                                        | 50                     | 7                       | 1                                       | 11.4           | 130                                              | 2.7                     |
| BZV47C18  | 16.8                              | 19.1        | 15                                        | 25                     | 7.5                     | 0.5                                     | 13.7           | 105                                              | 2.2                     |
| BZV47C20  | 18.8                              | 21.2        | 15                                        | 25                     | 7.5                     | 0.5                                     | 15.2           | 94                                               | 2                       |
| BZV47C22  | 20.8                              | 23.3        | 15                                        | 25                     | 8                       | 0.5                                     | 16.7           | 86                                               | 1.8                     |
| BZV47C24  | 22.8                              | 25.6        | 15                                        | 25                     | 8                       | 0.5                                     | 18.2           | 78                                               | 1.7                     |
| BZV47C27  | 25.1                              | 28.9        | 15                                        | 25                     | 8.5                     | 0.5                                     | 20.5           | 69                                               | 1.5                     |
| BZV47C30  | 28                                | 32          | 15                                        | 25                     | 8.5                     | 0.5                                     | 22.8           | 62                                               | 1.3                     |
| BZV47C36  | 34                                | 38          | 40                                        | 10                     | 8.5                     | 0.5                                     | 27.4           | 52                                               | 1.1                     |
| BZV47C39  | 37                                | 41          | 40                                        | 10                     | 9                       | 0.5                                     | 29.6           | 48                                               | 1                       |
| BZV47C47  | 44                                | 50          | 45                                        | 10                     | 9                       | 0.5                                     | 35.7           | 40                                               | 0.85                    |
| BZV47C68  | 64                                | 72          | 80                                        | 10                     | 9                       | 0.5                                     | 51.7           | 27                                               | 0.59                    |
| BZV47C100 | 94                                | 106         | 200                                       | 5                      | 9                       | 0.5                                     | 76             | 18                                               | 0.4                     |
| BZV47C150 | 138                               | 156         | 300                                       | 5                      | 9.5                     | 0.5                                     | 114            | 12.8                                             | 0.27                    |
| BZV47C200 | 188                               | 212         | 350                                       | 5                      | 9.5                     | 0.5                                     | 152            | 9.4                                              | 0.20                    |

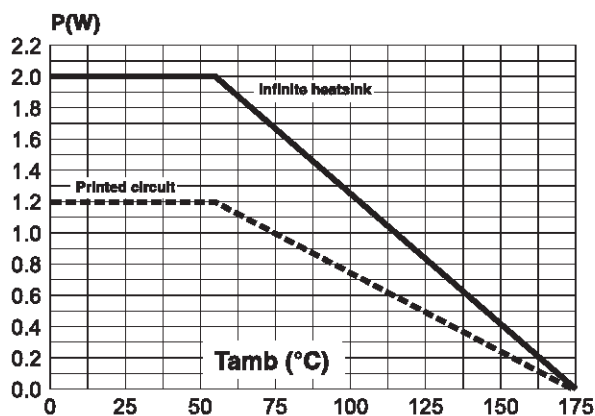
Note 1 : Pulse test : t<sub>p</sub> ≤ 50ms

Note 2 : On infinite heatsink : L = 10mm

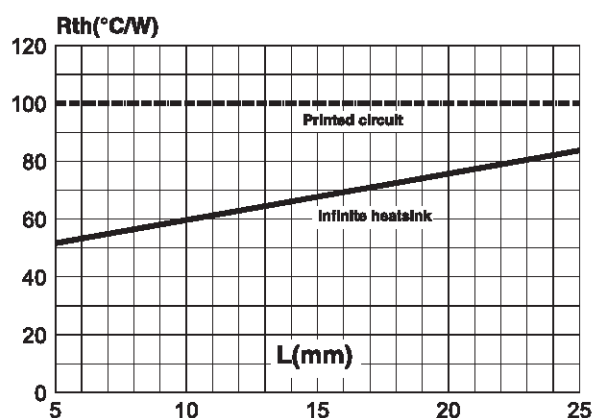
Note 3 : rectangular waveform (t<sub>p</sub> = 10ms)

Forward voltage drop : V<sub>F</sub> ≤ 1.2 V (T<sub>amb</sub> = 25°C, I<sub>F</sub> = 500mA)

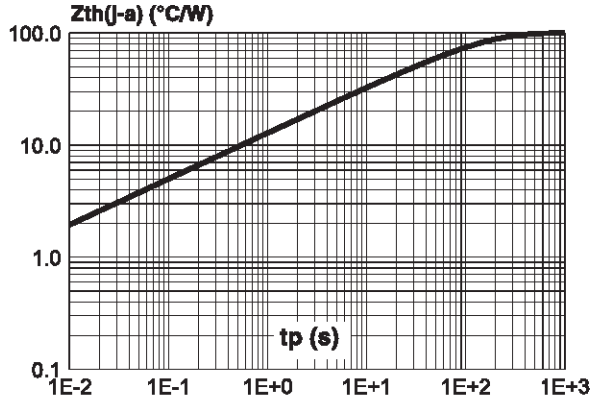
**Fig. 1** : Power dissipation versus ambient temperature.



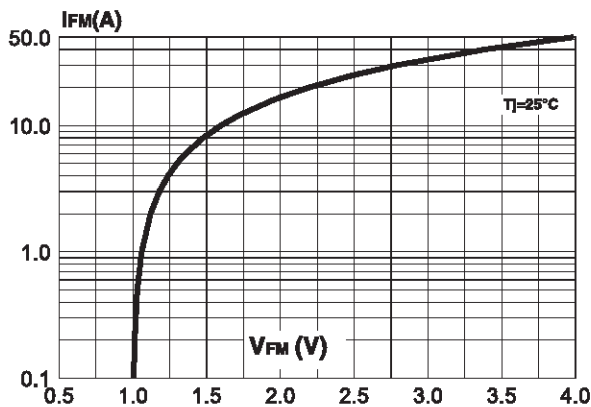
**Fig. 2** : Thermal resistance versus lead length.



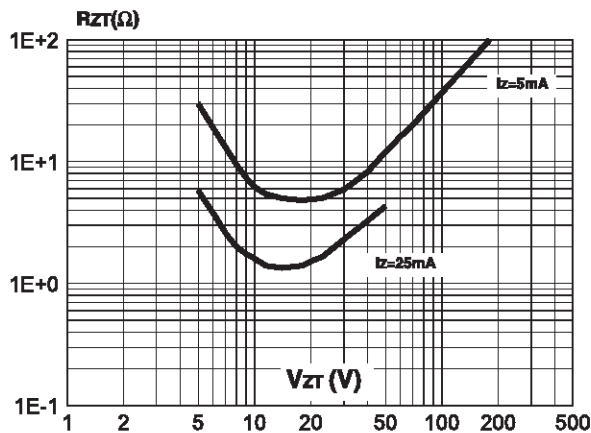
**Fig. 3 :** Relative variation of thermal impedance junction to ambient versus pulse duration (PC board FR4,  $L_{\text{leads}} = 10\text{mm}$ ).



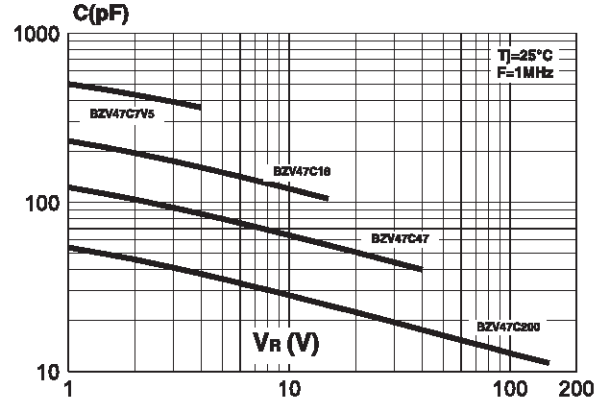
**Fig. 5 :** Peak forward current versus peak forward voltage drop (typical values).



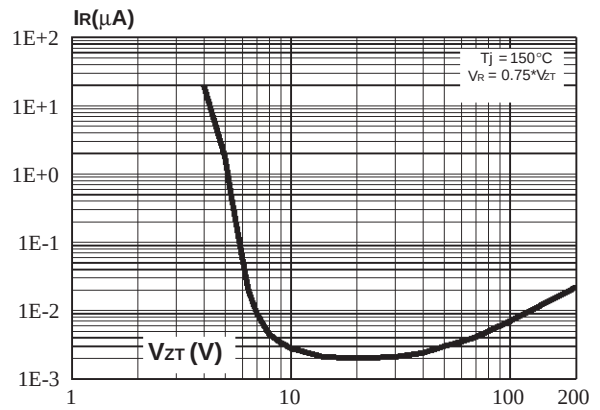
**Fig. 7 :** Differential resistance versus regulation voltage (typical values).



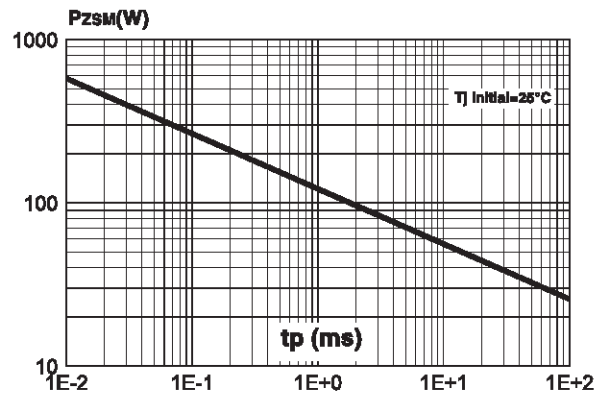
**Fig. 4 :** Junction capacitance versus reverse voltage applied (typical values).



**Fig. 6 :** Leakage current versus regulation voltage (typical values).



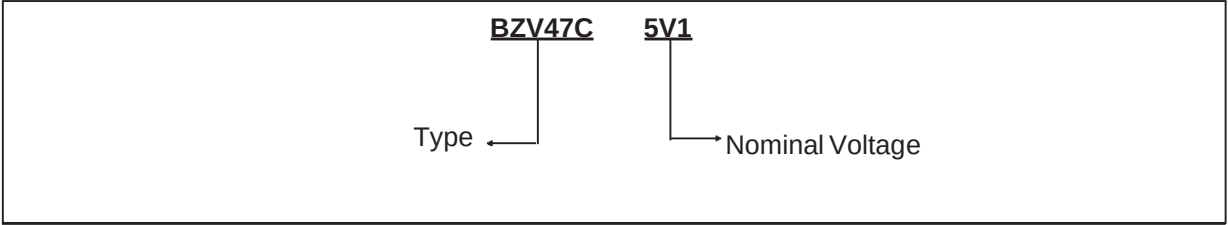
**Fig. 8 :** Peak pulse power versus pulse duration (rectangular waveform, maximum values).



**BZV47C5V1 / BZV47C200**

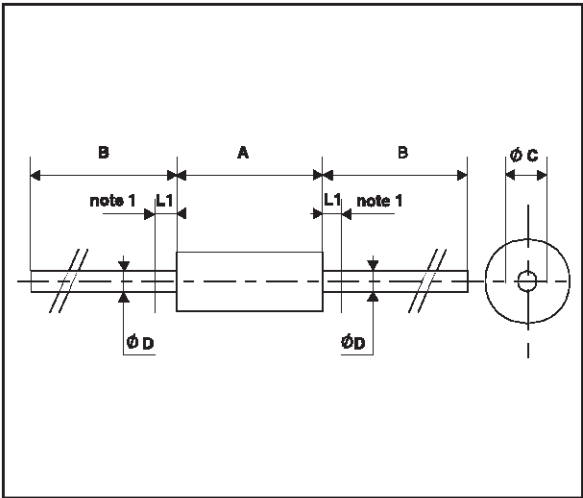
**MARKING** : Logo, Date Code, Type Code, Cathode Band (for unidirectional types only).

**ORDER CODE**



**PACKAGE MECHANICAL DATA**

F126 (Plastic)



| REF.                                                | DIMENSIONS  |      |      |        |       |       |
|-----------------------------------------------------|-------------|------|------|--------|-------|-------|
|                                                     | Millimeters |      |      | Inches |       |       |
|                                                     | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A                                                   | 6.05        | 6.20 | 6.35 | 0.238  | 0.244 | 0.250 |
| B                                                   | 26          |      | 31   | 1.024  |       | 1.220 |
| ØC                                                  | 2.95        | 3.00 | 3.05 | 0.116  | 0.118 | 0.120 |
| ØD                                                  | 0.76        | 0.81 | 0.86 | 0.030  | 0.032 | 0.034 |
| L1                                                  |             |      | 1.27 |        |       | 0.050 |
| Note 1 : The lead is not controlled within zone L1. |             |      |      |        |       |       |

**Packaging** : standard packaging is in tape and reel.

**Weight** = 0.40 g.

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