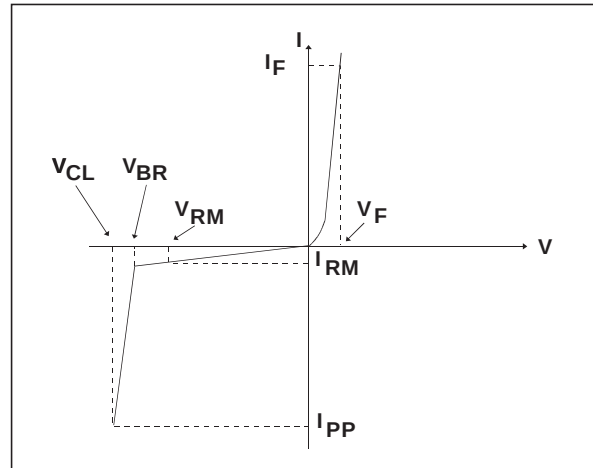


ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ )

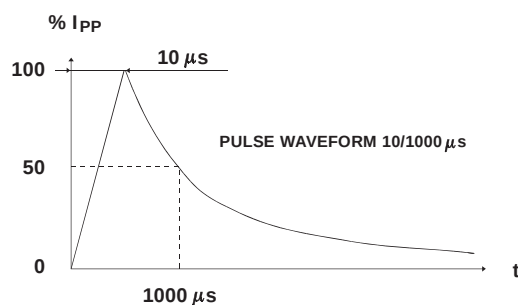
| Symbol     | Parameter                       |
|------------|---------------------------------|
| $V_{RM}$   | Stand-off voltage               |
| $V_{BR}$   | Breakdown voltage               |
| $V_{CL}$   | Clamping voltage                |
| $I_{RM}$   | Leakage current @ $V_{RM}$      |
| $I_{PP}$   | Peak pulse current              |
| $\alpha T$ | Voltage temperature coefficient |
| $V_F$      | Forward voltage drop            |



| Types          |               | $I_{RM} @ V_{RM}$ |      | $V_{BR} @ I_R$ |    | $V_{CL} @ I_{PP}$     |      | $V_{CL} @ I_{PP}$  |      | $\alpha T$                 | C     |
|----------------|---------------|-------------------|------|----------------|----|-----------------------|------|--------------------|------|----------------------------|-------|
|                |               | max               |      | min            |    | max                   |      | max                |      | max                        | typ   |
|                |               |                   |      | note2          |    | 10/1000 $\mu\text{s}$ |      | 8/20 $\mu\text{s}$ |      | note3                      | note4 |
| Unidirectional | Bidirectional | $\mu\text{A}$     | V    | V              | mA | V                     | A    | V                  | A    | $10^{-4}/^{\circ}\text{C}$ | pF    |
| BZW06-5V8      | BZW06-5V8B    | 1000              | 5.8  | 6.45           | 10 | 10.5                  | 57.0 | 13.4               | 298  | 5.7                        | 4000  |
| BZW06-6V4      | BZW06-6V4B    | 500               | 6.4  | 7.13           | 10 | 11.3                  | 53.0 | 14.5               | 276  | 6.1                        | 3700  |
| BZW06-8V5      | BZW06-8V5B    | 10                | 8.5  | 9.5            | 1  | 14.5                  | 41   | 18.6               | 215  | 7.3                        | 2800  |
| BZW06-10       | BZW06-10B     | 5                 | 10.2 | 11.4           | 1  | 16.7                  | 36.0 | 21.7               | 184  | 7.8                        | 2300  |
| BZW06-13       | BZW06-13B     | 5                 | 12.8 | 14.3           | 1  | 21.2                  | 28.0 | 27.2               | 147  | 8.4                        | 1900  |
| BZW06-15       | BZW06-15B     | 1                 | 15.3 | 17.1           | 1  | 25.2                  | 24.0 | 32.5               | 123  | 8.8                        | 1600  |
| BZW06-19       | BZW06-19B     | 1                 | 18.8 | 20.9           | 1  | 30.6                  | 19.6 | 39.3               | 102  | 9.2                        | 1350  |
| BZW06-20       | BZW06-20B     | 1                 | 20.5 | 22.8           | 1  | 33.2                  | 18.0 | 42.8               | 93   | 9.4                        | 1250  |
| BZW06-23       | BZW06-23B     | 1                 | 23.1 | 25.7           | 1  | 37.5                  | 16.0 | 48.3               | 83   | 9.6                        | 1150  |
| BZW06-26       | BZW06-26B     | 1                 | 25.6 | 28.5           | 1  | 41.5                  | 14.5 | 53.5               | 75   | 9.7                        | 1075  |
| BZW06-28       | BZW06-28B     | 1                 | 28.2 | 31.4           | 1  | 45.7                  | 13.1 | 59.0               | 68   | 9.8                        | 1000  |
| BZW06-31       | BZW06-31B     | 1                 | 30.8 | 34.2           | 1  | 49.9                  | 12.0 | 64.3               | 62   | 9.6                        | 950   |
| BZW06-33       | BZW06-33B     | 1                 | 33.3 | 37.1           | 1  | 53.9                  | 11.1 | 69.7               | 57   | 10.0                       | 900   |
| BZW06-40       | BZW06-40B     | 1                 | 40.2 | 44.7           | 1  | 64.8                  | 9.3  | 84                 | 48   | 10.1                       | 800   |
| BZW06-48       | BZW06-48B     | 1                 | 47.8 | 53.2           | 1  | 77.0                  | 7.8  | 100                | 40   | 10.3                       | 700   |
| BZW06-58       | BZW06-58B     | 1                 | 58.1 | 64.6           | 1  | 92.0                  | 6.5  | 121                | 33   | 10.4                       | 625   |
| BZW06-70       | BZW06-70B     | 1                 | 70.1 | 77.9           | 1  | 113                   | 5.3  | 146                | 27.0 | 10.5                       | 550   |
| BZW06-85       | BZW06-85B     | 1                 | 85.5 | 95.0           | 1  | 137                   | 4.4  | 178                | 22.5 | 10.6                       | 500   |
| BZW06-102      | BZW06-102B    | 1                 | 102  | 114            | 1  | 165                   | 3.6  | 212                | 19.0 | 10.7                       | 450   |
| BZW06-128      | BZW06-128B    | 1                 | 128  | 143            | 1  | 207                   | 2.9  | 265                | 15.0 | 10.8                       | 400   |
| BZW06-154      | BZW06-154B    | 1                 | 154  | 171            | 1  | 246                   | 2.4  | 317                | 12.6 | 10.8                       | 360   |
| BZW06-171      | BZW06-171B    | 1                 | 171  | 190            | 1  | 274                   | 2.2  | 353                | 11.3 | 10.8                       | 350   |

| Types          |               | $I_{RM}$ @ $V_{RM}$ |            | $V_{BR}$ @ $I_R$ |          | $V_{CL}$ @ $I_{PP}$ |            | $V_{CL}$ @ $I_{PP}$ |            | $\alpha T$          | C          |
|----------------|---------------|---------------------|------------|------------------|----------|---------------------|------------|---------------------|------------|---------------------|------------|
|                |               |                     |            | min              |          | max                 |            | max                 |            | max                 | typ        |
|                |               |                     |            | note2            |          | 10/1000 $\mu s$     |            | 8/20 $\mu s$        |            | note3               | note4      |
| Unidirectional | Bidirectional | $\mu A$             | V          | V                | mA       | V                   | A          | V                   | A          | $10^{-4}/^{\circ}C$ | pF         |
| BZW06-188      | BZW06-188B    | 1                   | 188        | 209              | 1        | 328                 | 2.0        | 388                 | 10.3       | 10.8                | 330        |
| BZW06-213      | BZW06-213B    | 1                   | 231        | 237              | 1        | 344                 | 2.0        | 442                 | 9.0        | 11.0                | 310        |
| BZW06-256      | BZW06-256B    | 1                   | 256        | 285              | 1        | 414                 | 1.6        | 529                 | 7.6        | 11.0                | 290        |
| BZW06-273      | BZW06-273B    | 1                   | 273        | 304              | 1        | 438                 | 1.6        | 564                 | 7.1        | 11.0                | 280        |
| BZW06-299      | BZW06-299B    | 1                   | 299        | 332              | 1        | 482                 | 1.6        | 618                 | 6.5        | 11.0                | 270        |
| BZW06-342      | BZW06-342B    | 1                   | <b>342</b> | <b>380</b>       | <b>1</b> | <b>548</b>          | <b>1.3</b> | <b>706</b>          | <b>5.7</b> | <b>11.0</b>         | <b>360</b> |
| BZW06-376      | BZW06-376B    | 1                   | <b>376</b> | <b>418</b>       | <b>1</b> | <b>603</b>          | <b>1.3</b> | <b>776</b>          | <b>5.7</b> | <b>11.0</b>         | <b>350</b> |

**Fig. 1:** Peak pulse power dissipation versus initial junction temperature (printed circuit board).



**Note 2 :** Pulse test:  $t_p < 50$  ms.

**Note 3 :**  $\Delta V_{BR} = \alpha T * (T_{amb} - 25) * V_{BR}(25^{\circ}C)$

**Note 4 :**  $V_R = 0$  V,  $F = 1$  MHz. For bidirectional types, capacitance value is divided by 2

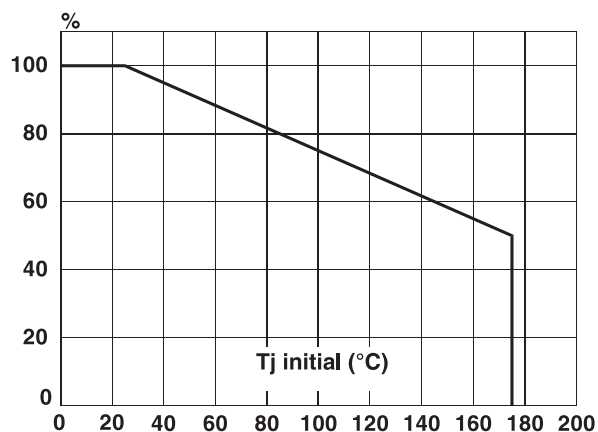


Fig. 2 : Peak pulse power versus exponential pulse duration.

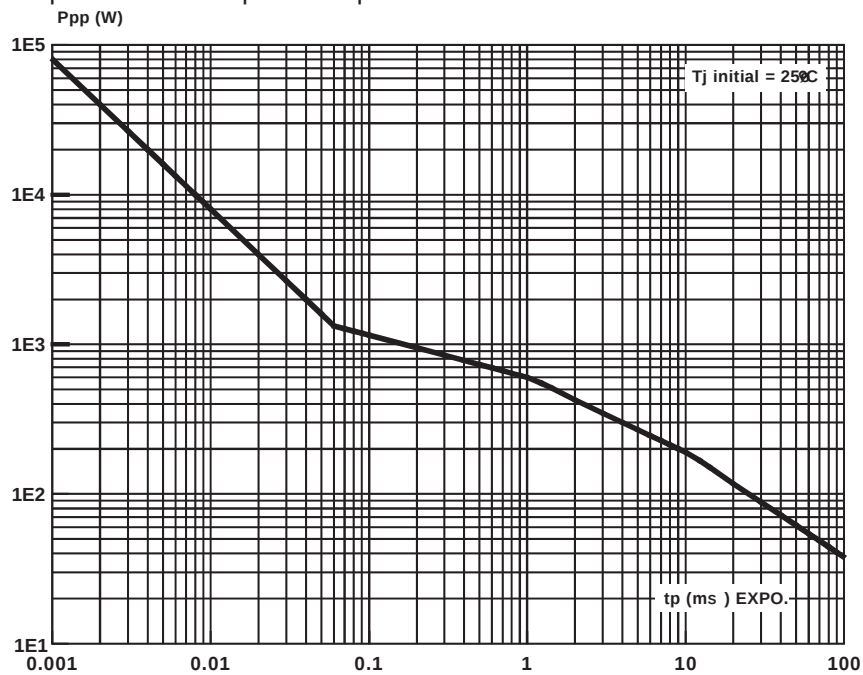
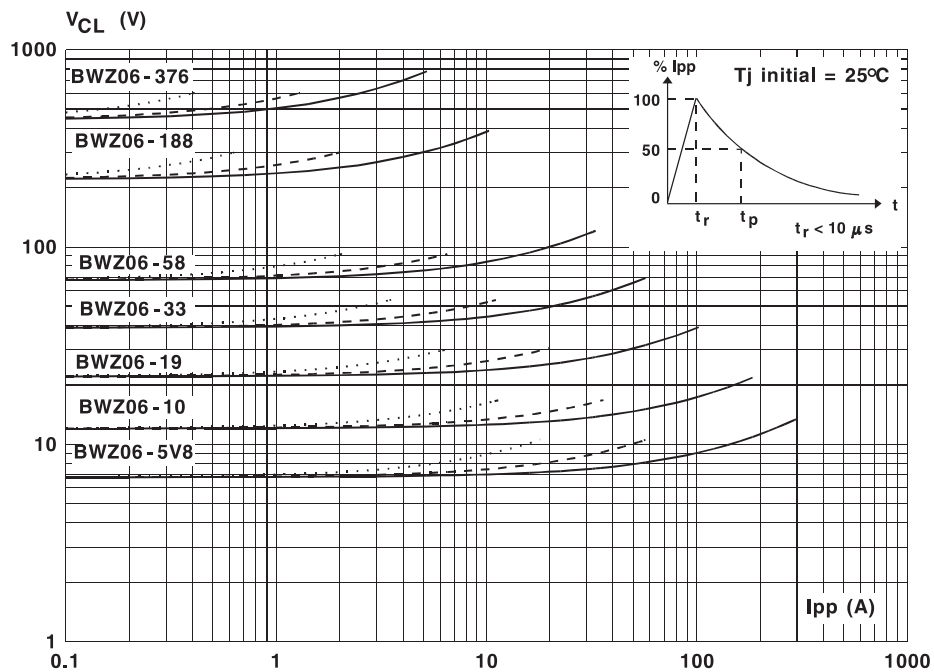


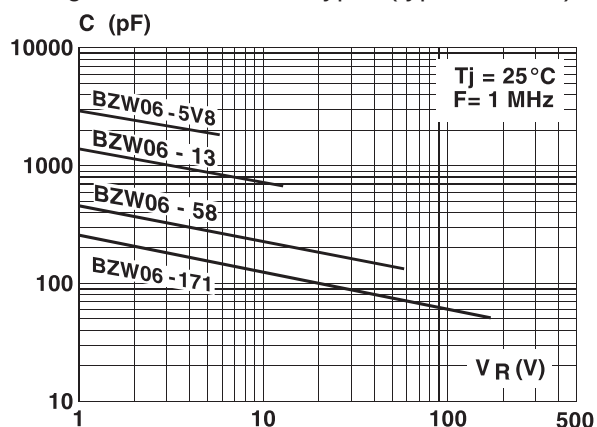
Fig. 3 : Clamping voltage versus peak pulse current.

Exponential waveform  $t_p = 20 \mu\text{s}$  \_\_\_\_\_  
 $t_p = 1 \text{ ms}$  \_\_\_\_\_  
 $t_p = 10 \text{ m.....}$

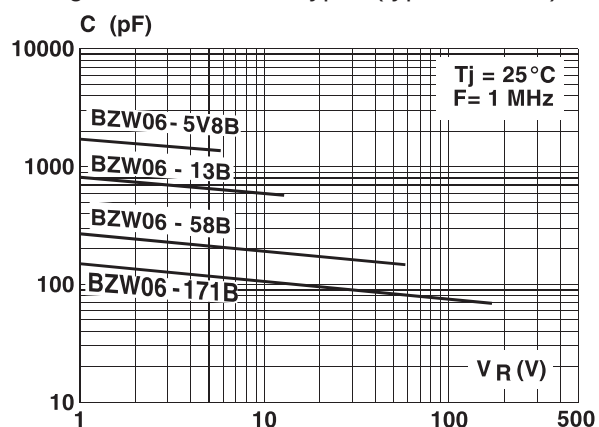


**Note :** The curves of the figure 3 are specified for a junction temperature of  $25^\circ\text{C}$  before surge.  
 The given results may be extrapolated for other junction temperatures by using the following formula :  
 $\Delta V_{BR} = \alpha T * (T_{amb} - 25) * V_{BR} (25^\circ\text{C}).$   
 For intermediate voltages, extrapolate the given results.

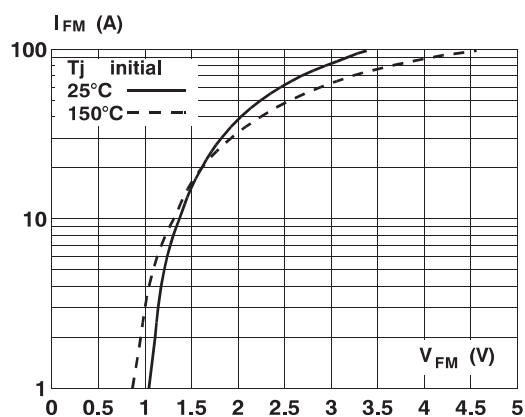
**Fig. 4a :** Capacitance versus reverse applied voltage for unidirectional types (typical values).



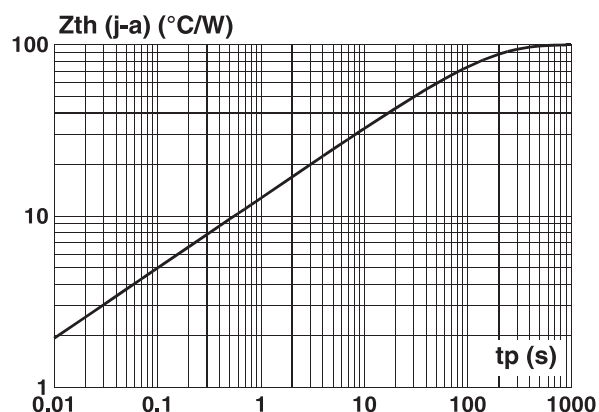
**Fig. 4b :** Capacitance versus reverse applied voltage for bidirectional types (typical values).



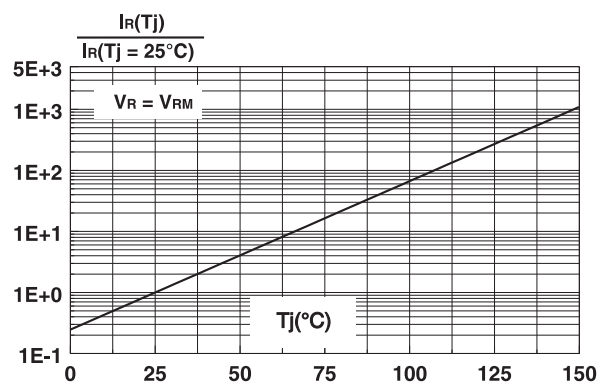
**Fig. 5 :** Peak forward voltage drop versus peak forward current (typical values for unidirectional types).



**Fig. 6 :** Transient thermal impedance junction ambient versus pulse duration (For FR4 PC Board with L lead = 10mm).

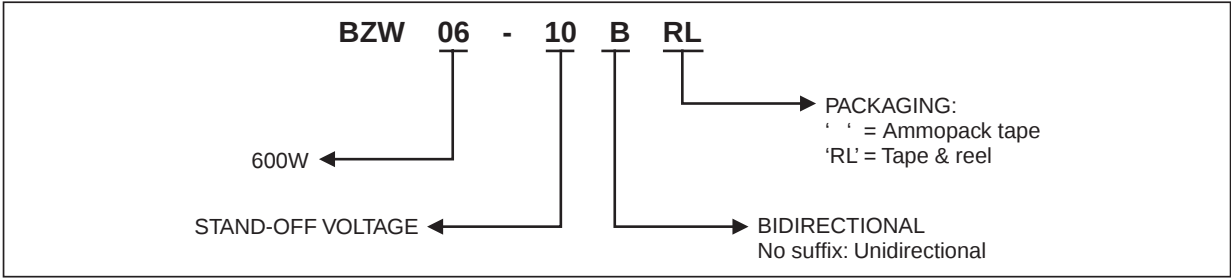


**Fig. 7 :** Relative variation of leakage current versus junction temperature.



# BZW06-xx

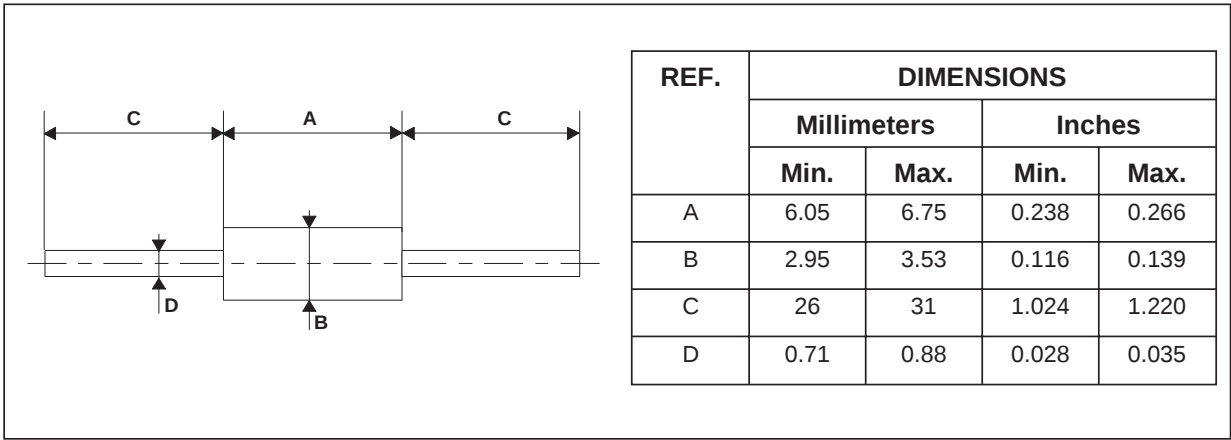
## ORDER



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

## PACKAGE MECHANICAL DATA

DO-15 (Plastic)



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

**Weight** = 0.4 g.

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