



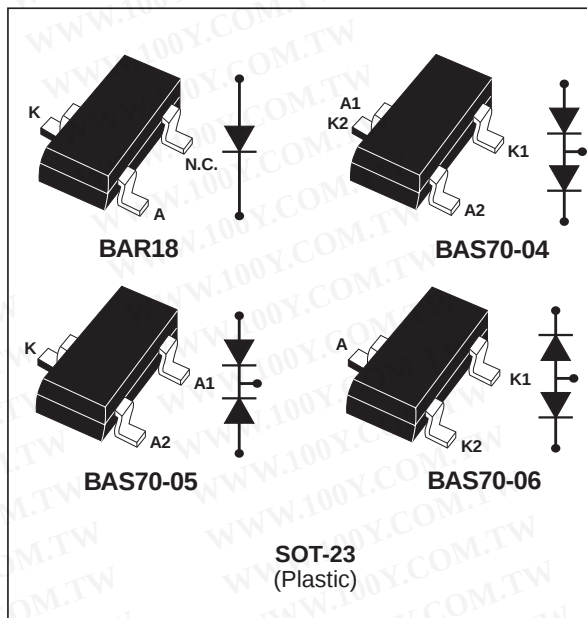
# BAR 18 BAS70-04 06

## SMALL SIGNAL SCHOTTKY DIODES

勝特力材料 886-3-5753170  
勝特力电子(上海) 86-21-34970699  
勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

### DESCRIPTION

Low turn-on and high breakdown voltage diodes intended for ultrafast switching and UHF detectors in hybrid micro circuits.



### ABSOLUTE RATINGS (limiting values)

| Symbol    | Parameter                                    |                         | Value        | Unit        |
|-----------|----------------------------------------------|-------------------------|--------------|-------------|
| $V_{RRM}$ | Repetitive peak reverse voltage              |                         | 70           | V           |
| $I_F$     | Continuous forward current                   |                         | 70           | mA          |
| $P_{tot}$ | Power dissipation (note 1)                   | $T_{amb} = 25^{\circ}C$ | 250          | mW          |
| $T_{stg}$ | Maximum storage temperature range            |                         | - 65 to +150 | $^{\circ}C$ |
| $T_j$     | Maximum operating junction temperature *     |                         | 150          | $^{\circ}C$ |
| $T_L$     | Maximum temperature for soldering during 10s |                         | 260          | $^{\circ}C$ |

**Note 1:** for double diodes,  $P_{tot}$  is the total dissipation of both diodes

\* :  $\frac{dP_{tot}}{dT_j} < \frac{1}{R_{th(j-a)}}$  thermal runaway condition for a diode on its own heatsink

### THERMAL RESISTANCE

| Symbol        | Parameter               | Value | Unit          |
|---------------|-------------------------|-------|---------------|
| $R_{th(j-a)}$ | Junction to ambient (*) | 500   | $^{\circ}C/W$ |

(\*) Mounted on epoxy board with recommended pad layout.

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

| Symbol     | Test Conditions                                  | Min. | Typ. | Max. | Unit |
|------------|--------------------------------------------------|------|------|------|------|
| $V_{BR}$   | $T_j = 25^{\circ}\text{C}$ $I_R = 10\mu\text{A}$ | 70   |      |      | V    |
| $V_F^*$    | $T_j = 25^{\circ}\text{C}$ $I_F = 1\text{mA}$    |      |      | 410  | mV   |
| $I_R^{**}$ | $T_j = 25^{\circ}\text{C}$ $V_R = 50\text{V}$    |      |      | 200  | nA   |

Pulse test: \*  $t_p = 380\mu\text{s}$ ,  $\delta < 2\%$   
\*\*  $t_p = 5\text{ms}$ ,  $\delta < 2\%$

DYNAMIC CHARACTERISTICS

| Symbol   | Test Conditions                                                | Min. | Typ. | Max. | Unit |
|----------|----------------------------------------------------------------|------|------|------|------|
| C        | $T_j = 25^{\circ}\text{C}$ $V_R = 0\text{V}$ $F = 1\text{MHz}$ |      |      | 2    | pF   |
| $\tau^*$ | $T_j = 25^{\circ}\text{C}$ $I_F = 5\text{mA}$ Krakauer Method  |      |      | 100  | ps   |

\* Effective carrier life time.

Fig. 1-1: Forward voltage drop versus forward current (low level).

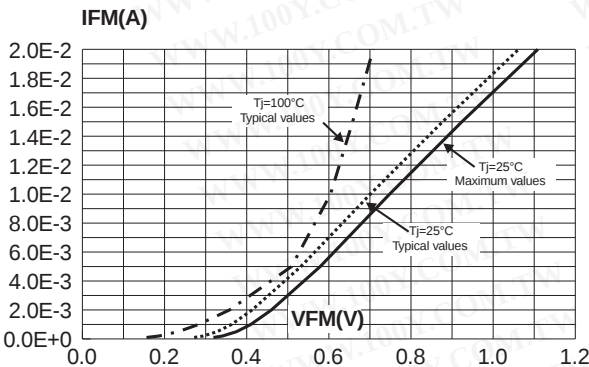
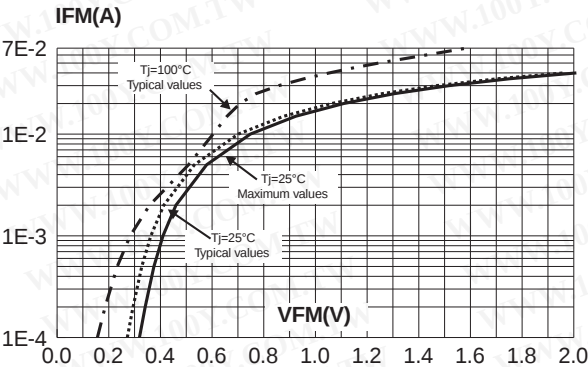
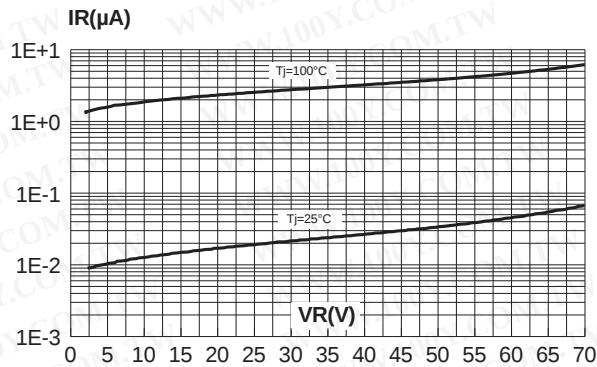


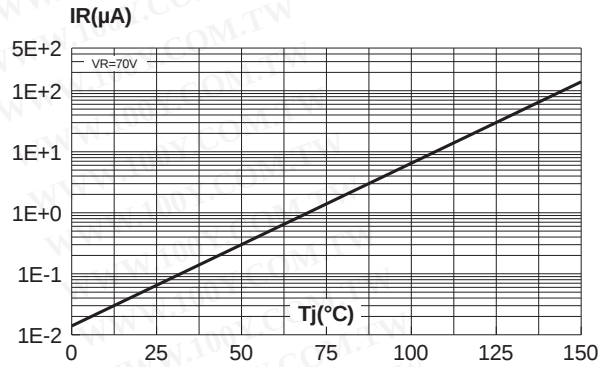
Fig. 1-2: Forward voltage drop versus forward current (high level).



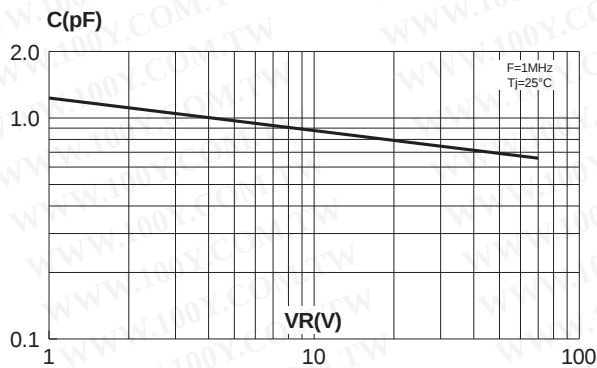
**Fig. 2:** Reverse leakage current versus reverse voltage applied (typical values).



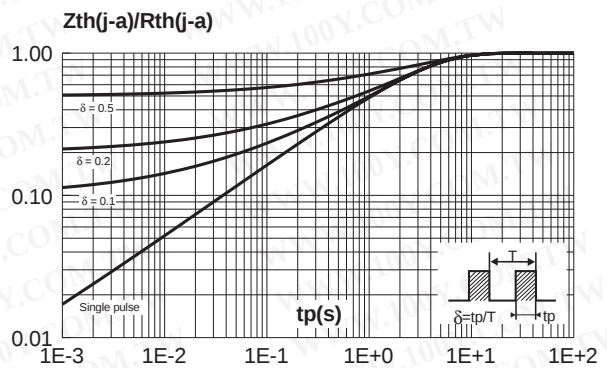
**Fig. 3:** Reverse leakage current versus junction temperature (typical values)



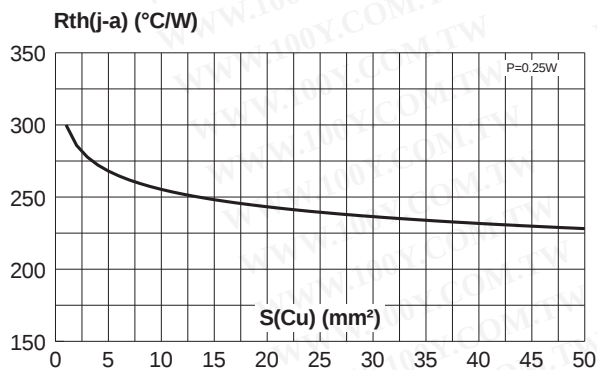
**Fig. 4:** Junction capacitance versus reverse voltage applied (typical values).



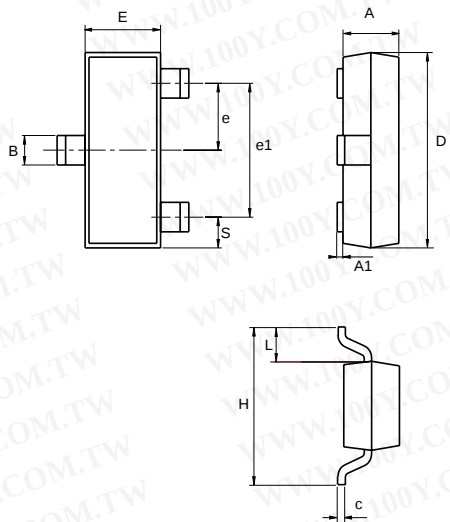
**Fig. 5:** Relative variation of thermal impedance junction to ambient versus pulse duration (alumine substrate 10mm\*8mm\*0.5mm).



**Fig. 6:** Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35μm).



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| REF. | DIMENSIONS  |      |            |       |
|------|-------------|------|------------|-------|
|      | Millimeters |      | Inches     |       |
|      | Min.        | Max. | Min.       | Max.  |
| A    | 0.89        | 1.4  | 0.035      | 0.055 |
| A1   | 0           | 0.1  | 0          | 0.004 |
| B    | 0.3         | 0.51 | 0.012      | 0.02  |
| c    | 0.085       | 0.18 | 0.003      | 0.007 |
| D    | 2.75        | 3.04 | 0.108      | 0.12  |
| e    | 0.85        | 1.05 | 0.033      | 0.041 |
| e1   | 1.7         | 2.1  | 0.067      | 0.083 |
| E    | 1.2         | 1.6  | 0.047      | 0.063 |
| H    | 2.1         | 2.75 | 0.083      | 0.108 |
| L    | 0.6 typ.    |      | 0.024 typ. |       |
| S    | 0.35        | 0.65 | 0.014      | 0.026 |

| Ordering type | Marking | Package | Weight | Base qty | Delivery mode |
|---------------|---------|---------|--------|----------|---------------|
| BAR18         | D76     | SOT-23  | 0.01g  | 3000     | Tape & reel   |
| BAS70-04      | D96     | SOT-23  | 0.01g  | 3000     | Tape & reel   |
| BAS70-05      | D97     | SOT-23  | 0.01g  | 3000     | Tape & reel   |
| BAS70-06      | D98     | SOT-23  | 0.01g  | 3000     | Tape & reel   |

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