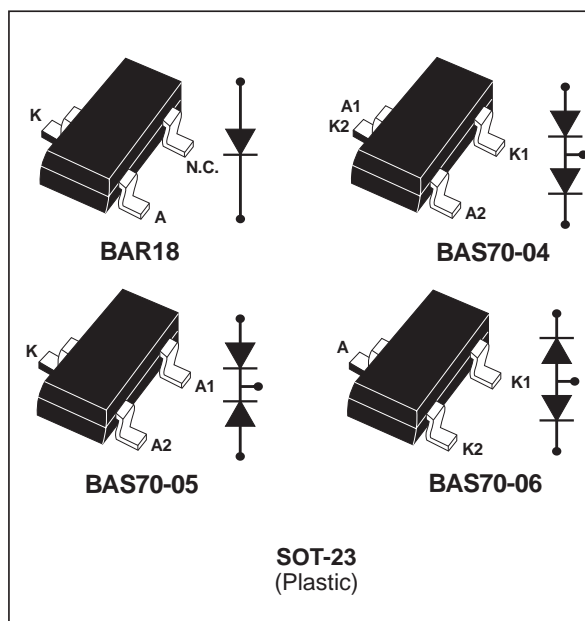


## SMALL SIGNAL SCHOTTKY DIODES



### 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)                   | $T_{amb} = 25^\circ\text{C}$<br>250 | mW               |
| $T_{stg}$ | Maximum storage temperature range            | - 65 to +150                        | $^\circ\text{C}$ |
| $T_j$     | Maximum operating junction temperature *     | 150                                 | $^\circ\text{C}$ |
| $T_L$     | Maximum temperature for soldering during 10s | 260                                 | $^\circ\text{C}$ |

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

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

### THERMAL RESISTANCE

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

(\*) 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).

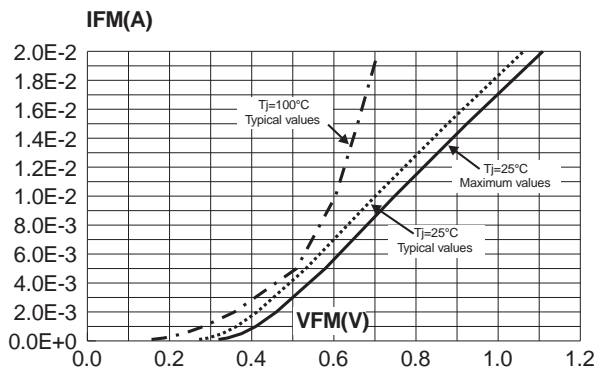
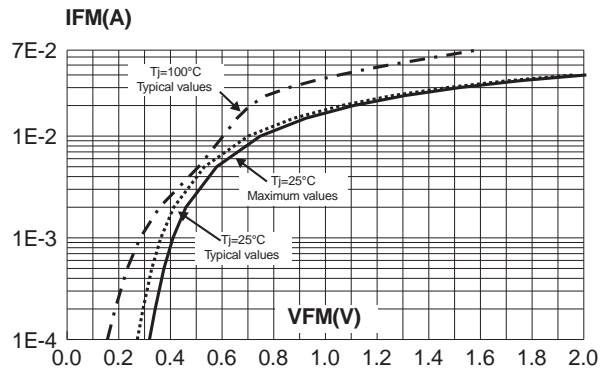
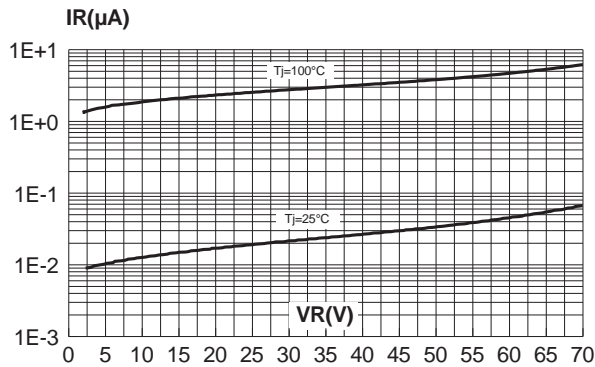


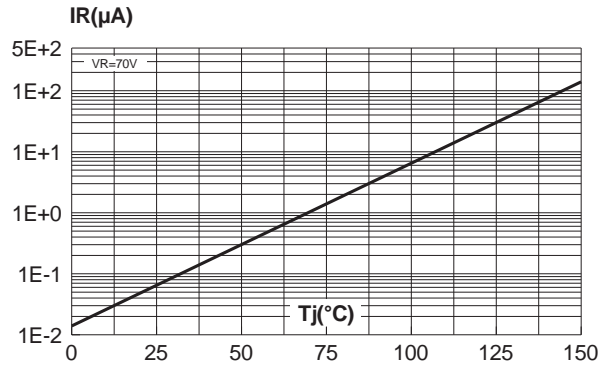
Fig. 1-2: Forward voltage drop versus forward current (high level).



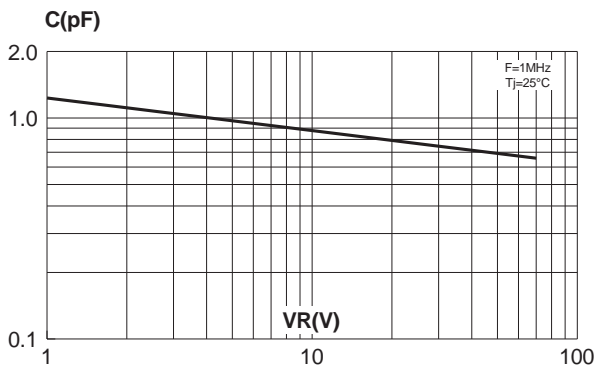
**Fig. 2:** Reverse leakage current versus reverse voltage applied (typical values).



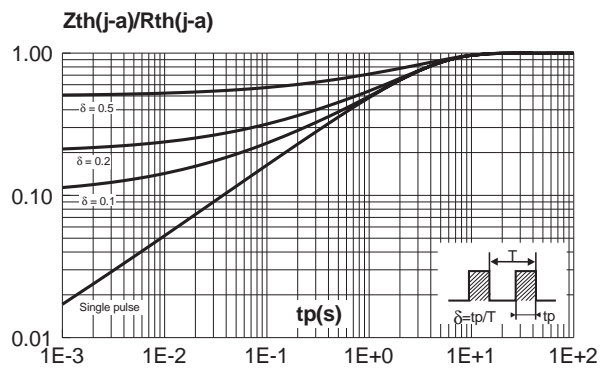
**Fig. 3:** Reverse leakage current versus junction temperature (typical values)



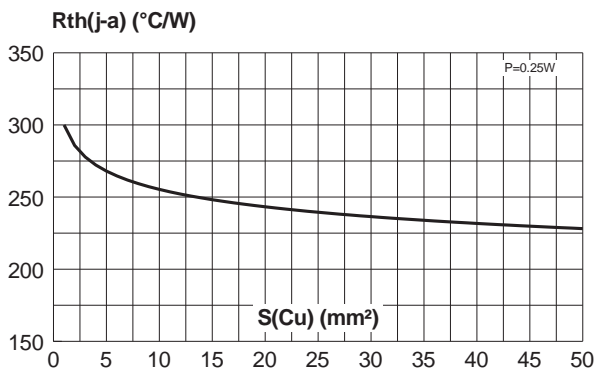
**Fig. 4:** Junction capacitance versus reverse voltage applied (typical values).



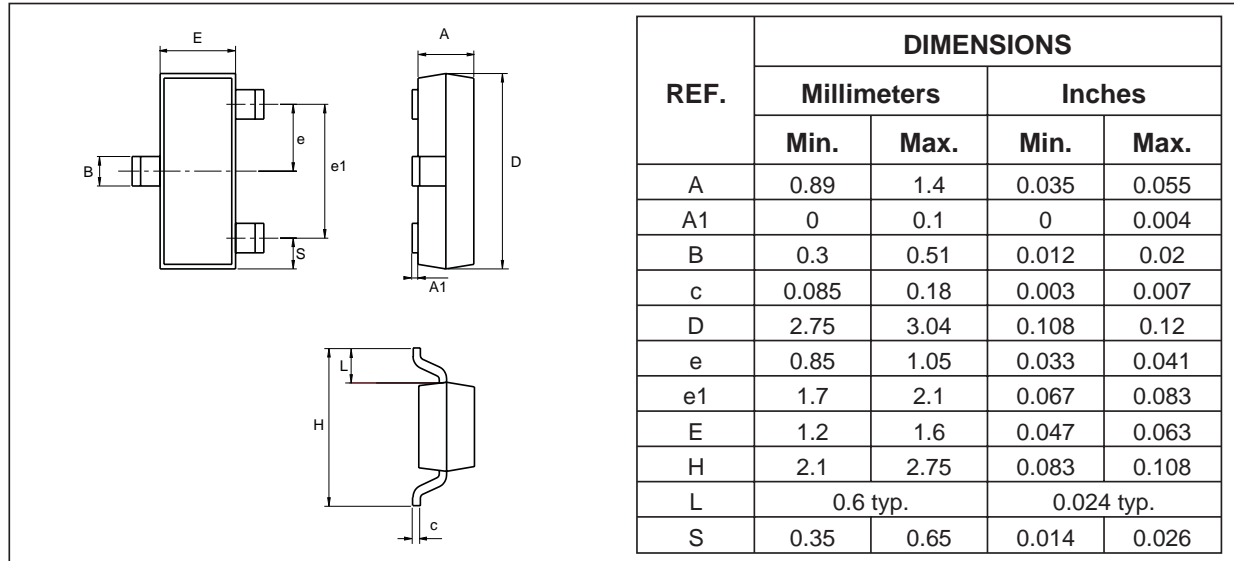
**Fig. 5:** Relative variation of thermal impedance junction to ambient versus pulse duration (alumine substrate 10mm\*8mm\*0.5mm).



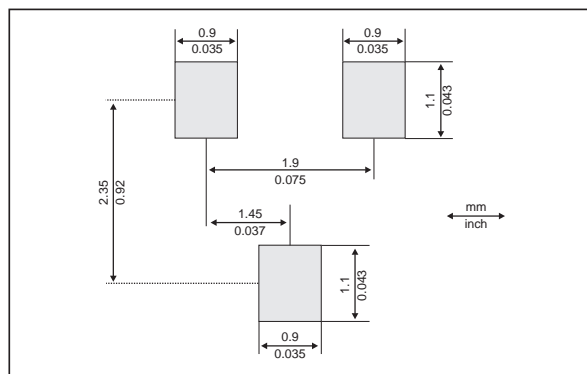
**Fig. 6:** Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35 $\mu m$ ).



**PACKAGE MECHANICAL DATA**  
SOT23 (Plastic)



**FOOTPRINT DIMENSIONS**



| 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   |

- Epoxy meets UL94,V0

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