



# BAS70J / BAS70W BAS70-04W / BAS70-05W / BAS70-06W

## SMALL SIGNAL SCHOTTKY DIODE

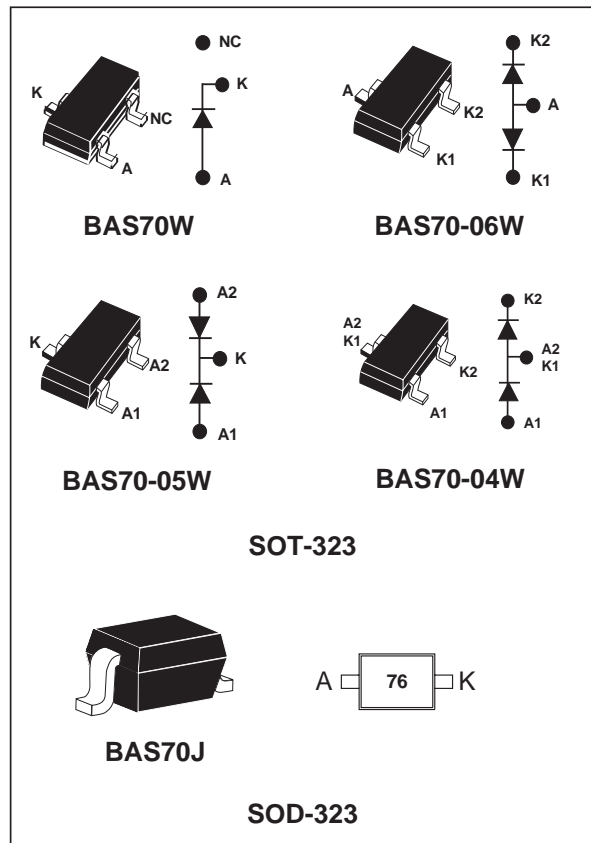
### FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- SURFACE MOUNT DEVICE

### DESCRIPTION

Schottky barrier diodes encapsulated either in SOT-323 or SOD-323 small SMD packages.

Single and double diodes with different pinning are available.



### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V <sub>RRM</sub>	Repetitive peak reverse voltage		70	V
I <sub>F</sub>	Continuous forward current		70	mA
I <sub>FSM</sub>	Surge non repetitive forward current	tp = 10 ms	1	A
P <sub>tot</sub>	Power dissipation (note 1) T <sub>amb</sub> = 25°C	SOT-323	230	mW
		SOT-323		
T <sub>stg</sub>	Maximum storage temperature range		- 65 to +150	°C
T <sub>j</sub>	Maximum operating junction temperature *		150	°C
T <sub>L</sub>	Maximum temperature for soldering during 10s		260	°C

**Note 1:** for double diodes, P<sub>tot</sub> is the total dissipation of both diodes.

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

**BAS70J / BAS70W / BAS70-04W / BAS70-05W / BAS70-06W****THERMAL RESISTANCE**

Symbol	Parameters	Value	Unit	
$R_{th(j-a)}$	Junction to ambient (*)	SOD-323	550	°C/W
		SOT-323		°C/W

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

**STATIC ELECTRICAL CHARACTERISTICS (per diode)**

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
$I_R^{**}$	$T_j = 25^\circ\text{C}$ $V_R = 50\text{V}$			100	nA

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

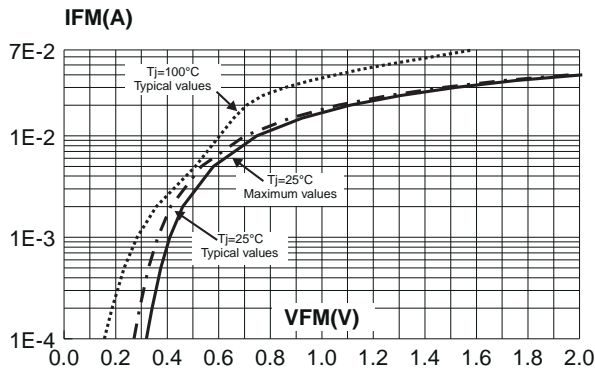
\*\*  $t_p = 5\text{ms}$ ,  $\delta < 2\%$

**DYNAMIC CHARACTERISTICS**

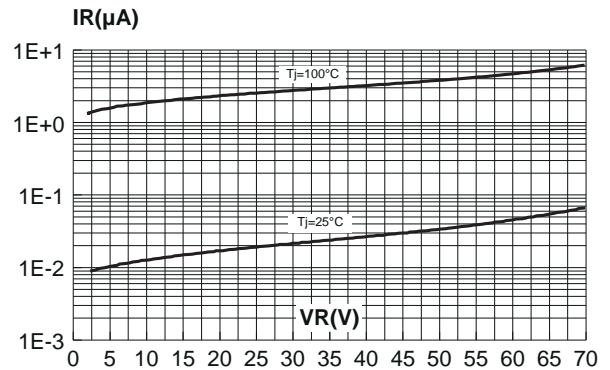
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
C	$T_j = 25^\circ\text{C}$ $F = 1\text{MHz}$ $V_R = 0\text{V}$			2	pF
$\tau^*$	$T_j = 25^\circ\text{C}$ Krakauer Method $I_F = 5\text{mA}$			100	ps

\* Effective carrier life time.

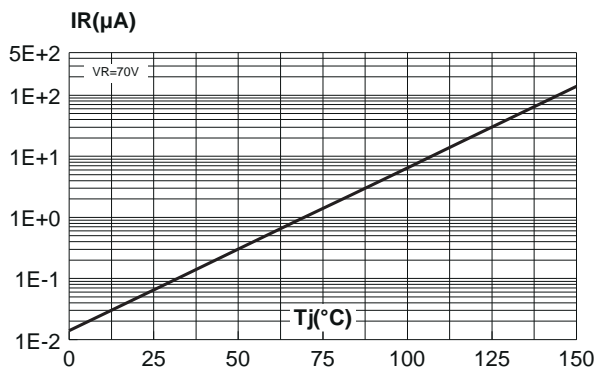
**Fig. 1:** Forward voltage drop versus forward current.



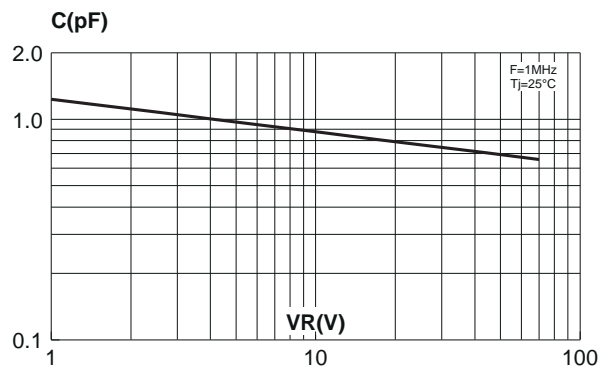
**Fig. 2:** Reverse leakage current versus reverse voltage applied (typical values).



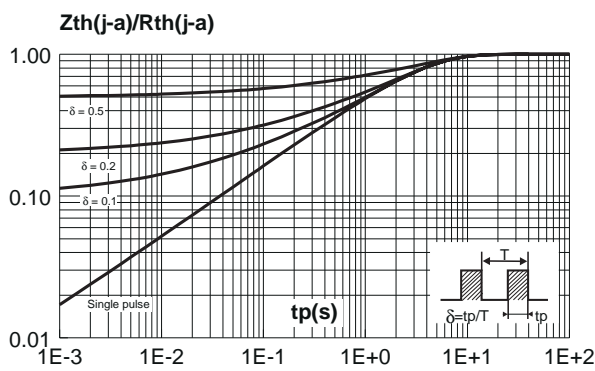
**Fig. 3:** Reverse leakage current versus junction temperature (typical values).



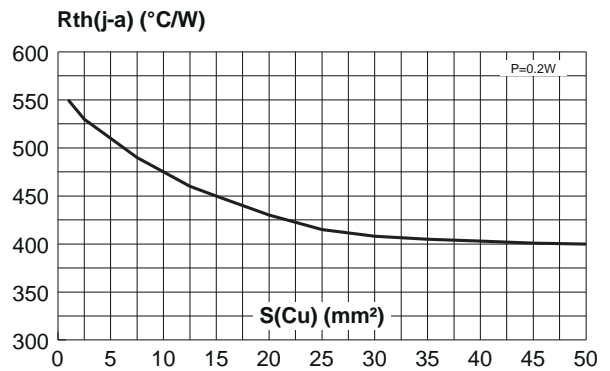
**Fig. 4:** Junction capacitance versus reverse voltage applied (typical values).



**Fig. 5:** Relative variation of thermal impedance junction to ambient versus pulse duration (epoxy FR4 with recommended pad layout, S(Cu)=35μm).

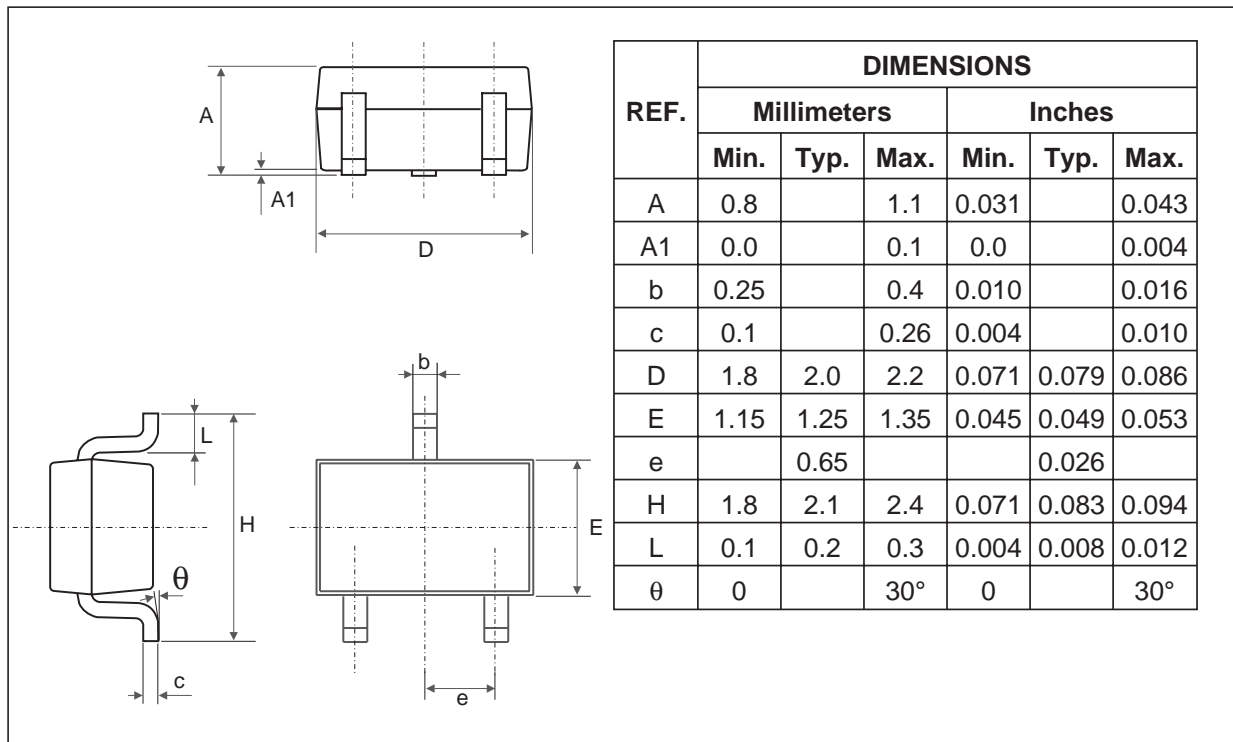


**Fig. 6:** Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35μm).

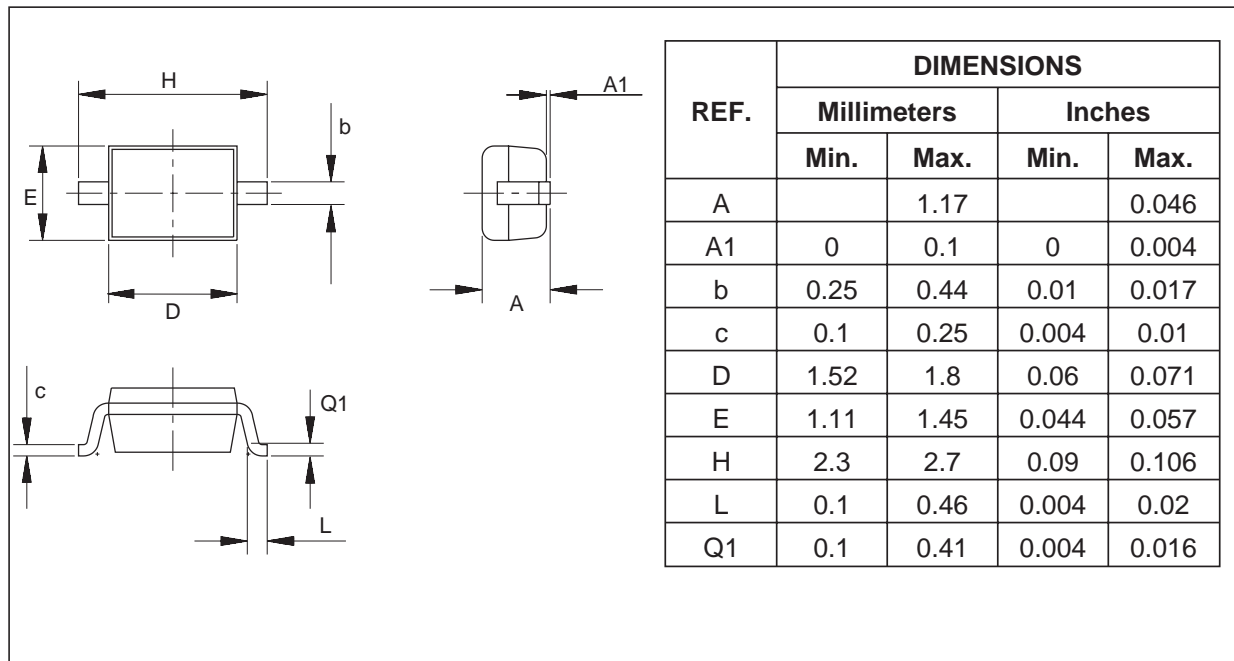


**BAS70J / BAS70W / BAS70-04W / BAS70-05W / BAS70-06W**

**PACKAGE MECHANICAL DATA**  
SOT-323



**PACKAGE MECHANICAL DATA**  
SOD-323



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
BAS70W	D28	SOT-323	0.006g	3000	Tape & reel
BAS70-04W	D31	SOT-323	0.006g	3000	Tape & reel
BAS70-05W	D30	SOT-323	0.006g	3000	Tape & reel
BAS70-06W	D29	SOT-323	0.006g	3000	Tape & reel
BAS70J	76	SOD-323	0.005g	3000	Tape & reel

- Epoxy meets UL94,V0

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