



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

SMALL SIGNAL SCHOTTKY DIODE

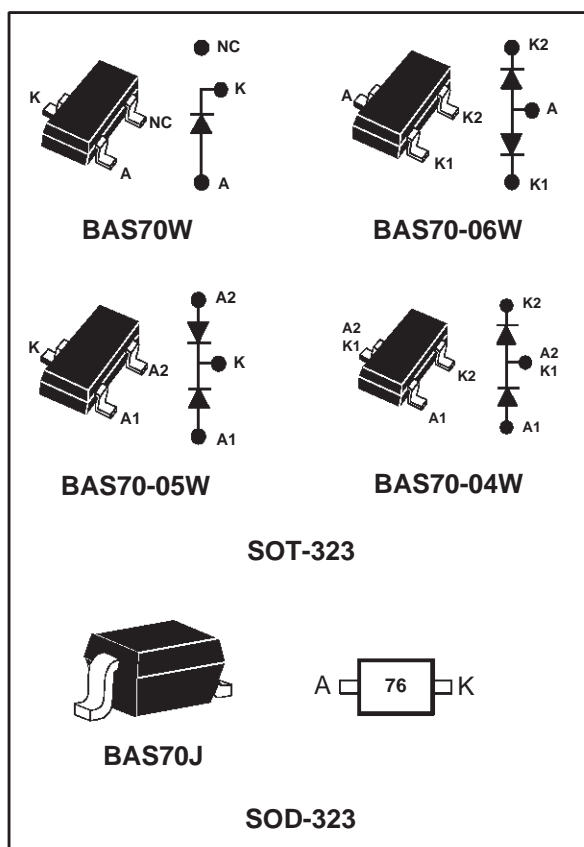
FEATURES AND BENEFITS

- 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_{RRM}	Repetitive peak reverse voltage		70	V
I_F	Continuous forward current		70	mA
I_{FSM}	Surge non repetitive forward current	$t_p = 10 \text{ ms}$	1	A
P_{tot}	Power dissipation (note 1) $T_{amb} = 25^\circ\text{C}$	SOT-323	230	mW
		SOT-323		
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.

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

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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 = 1MHz	$V_R = 0\text{V}$			2	pF
τ^*	$T_j = 25^\circ\text{C}$ Krakauer Method	$I_F = 5\text{mA}$			100	ps

* Effective carrier life time.

Fig. 1: Forward voltage drop versus forward current.

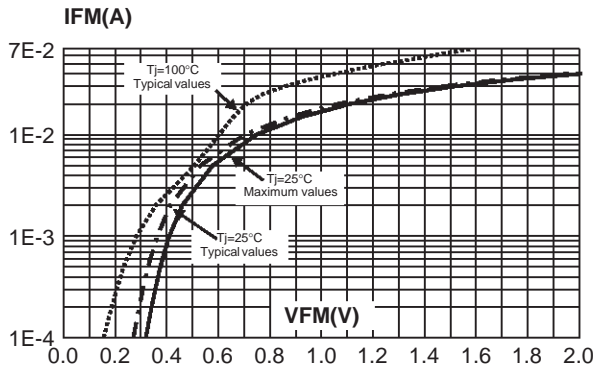


Fig. 2: Reverse leakage current versus reverse voltage applied (typical values).

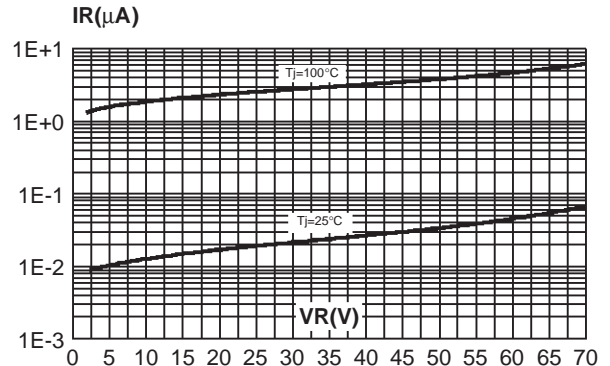


Fig. 3: Reverse leakage current versus junction temperature (typical values).

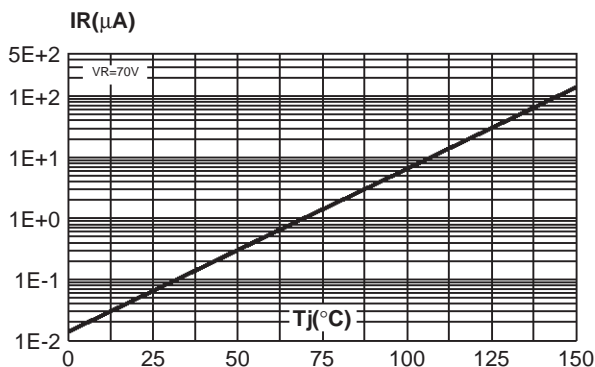


Fig. 4: Junction capacitance versus reverse voltage applied (typical values).

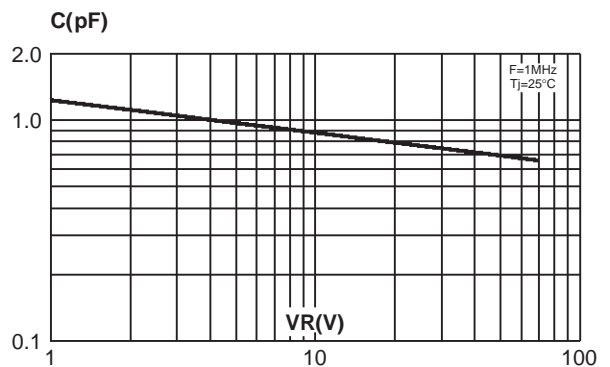


Fig. 5: Relative variation of thermal impedance junction to ambient versus pulse duration (epoxy FR4 with recommended pad layout, S(Cu)=35μm).

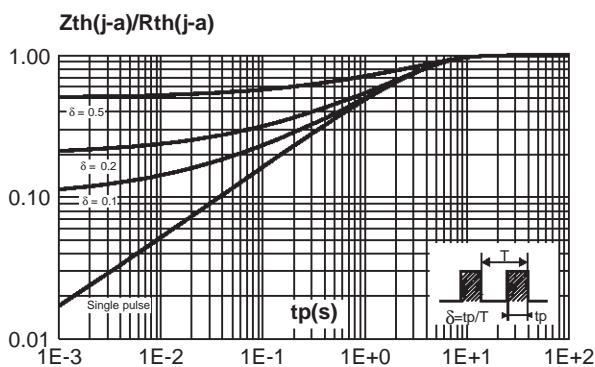
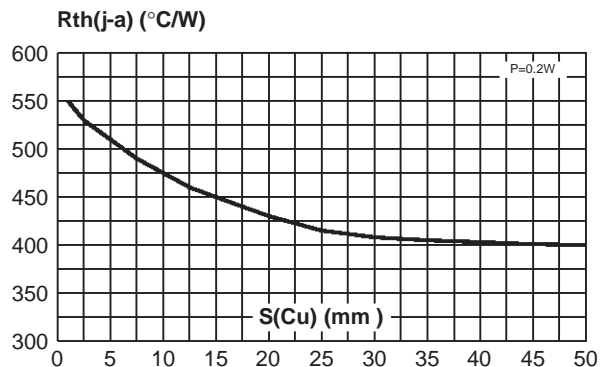
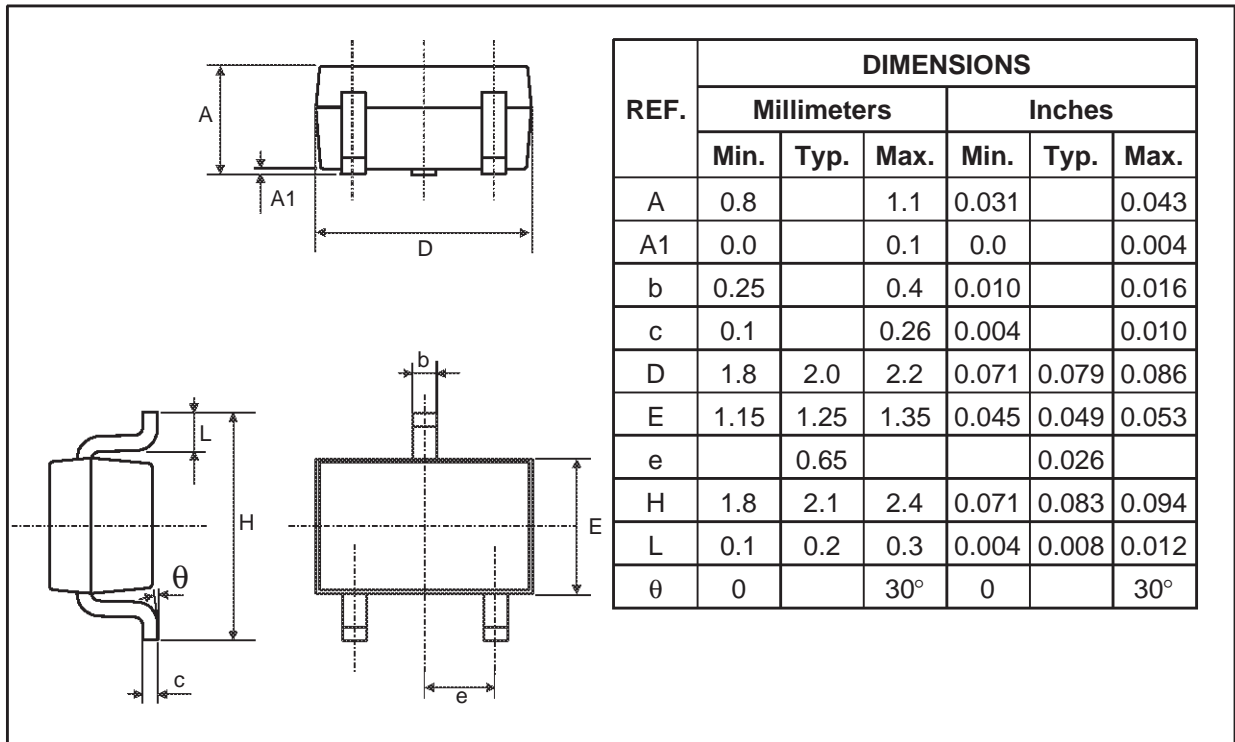


Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35μm).

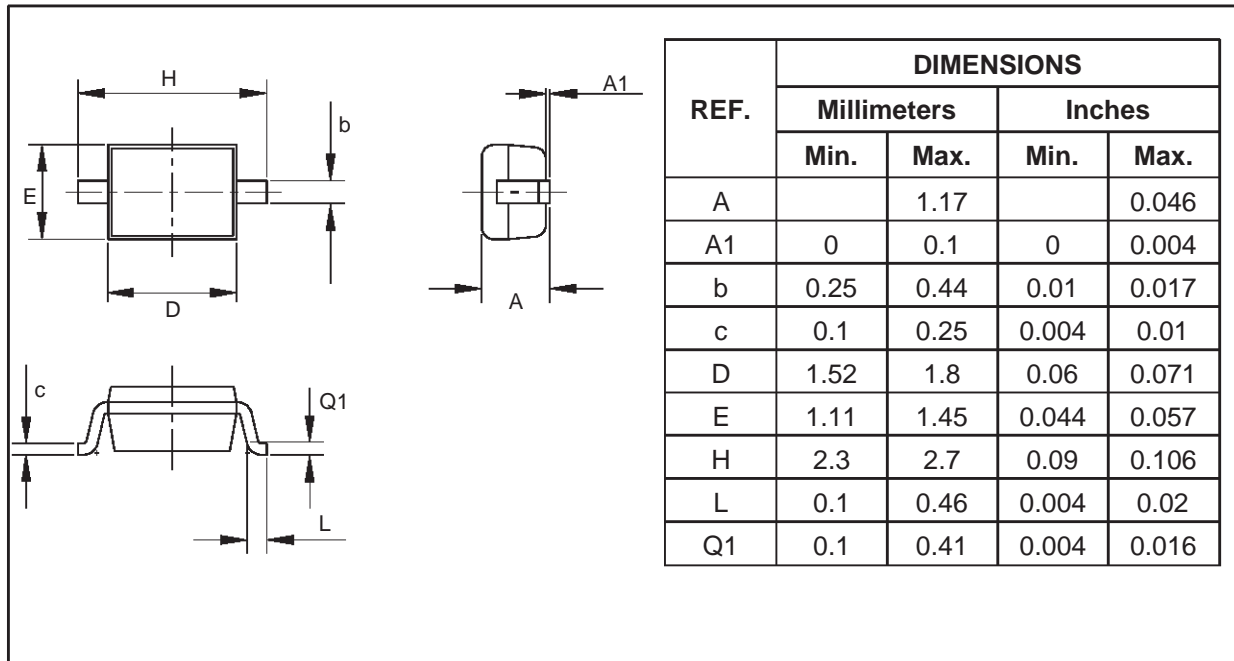


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PACKAGE MECHANICAL DATA
SOT-323



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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