



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

SMALL SIGNAL SCHOTTKY DIODE

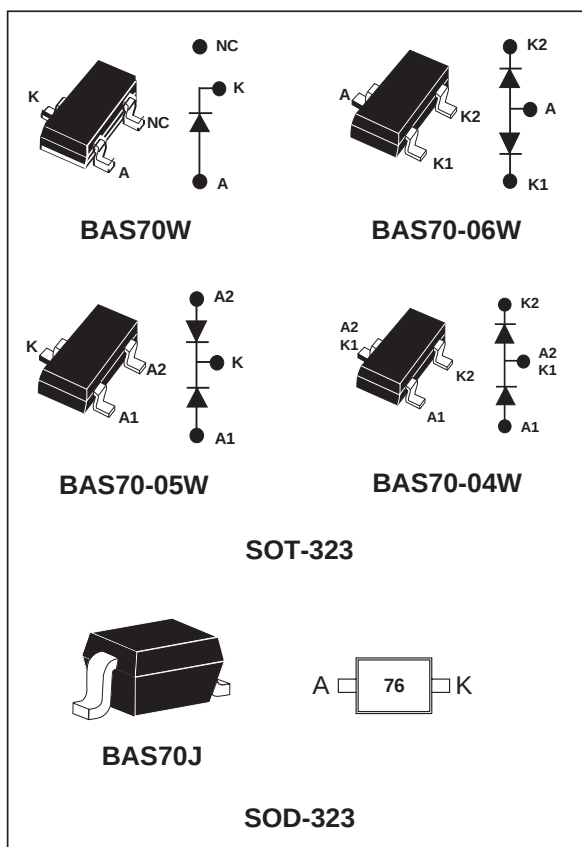
FEATURES AND BENEFITS

- 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) $T_{amb} = 25^\circ\text{C}$	SOD-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

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)

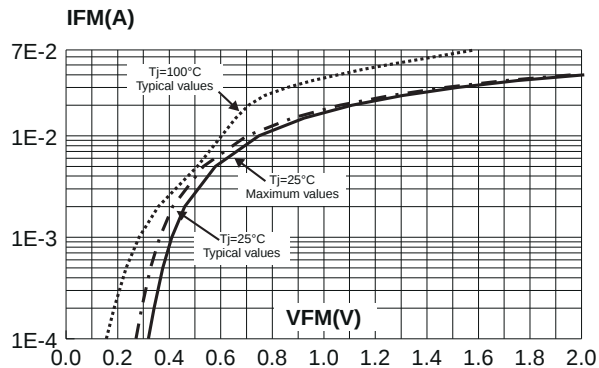
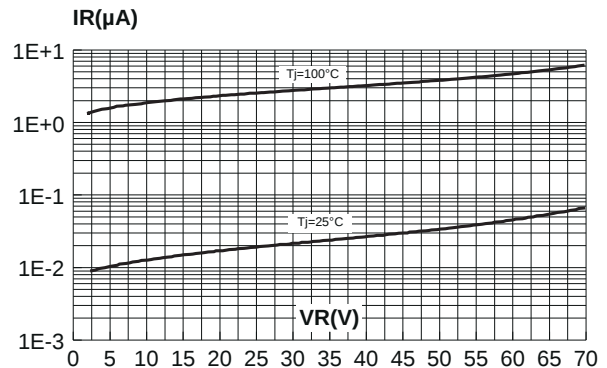
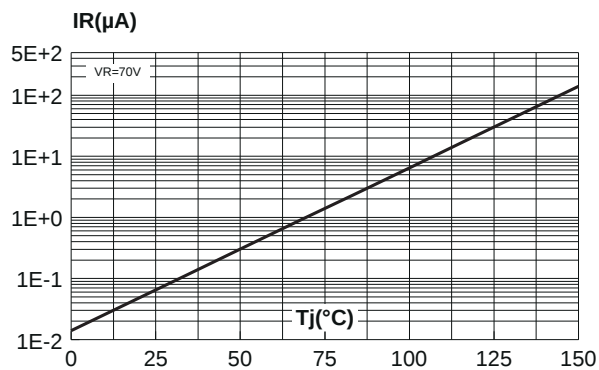
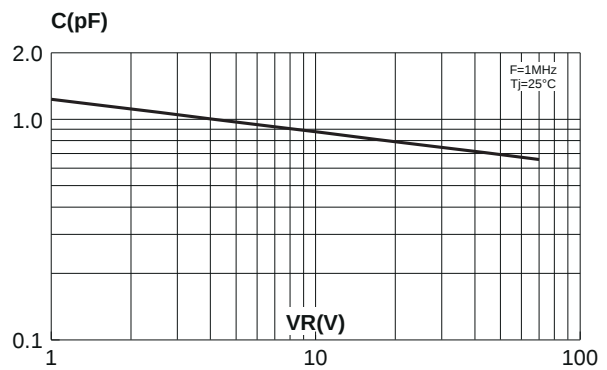
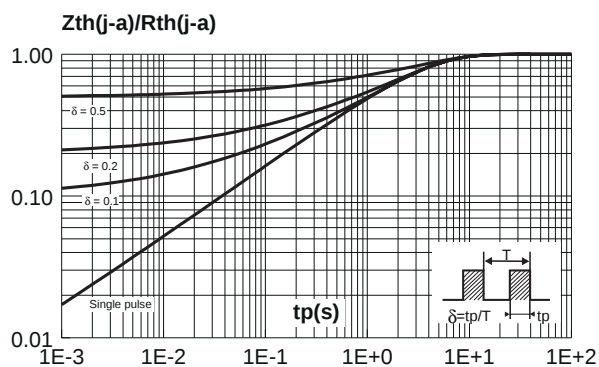
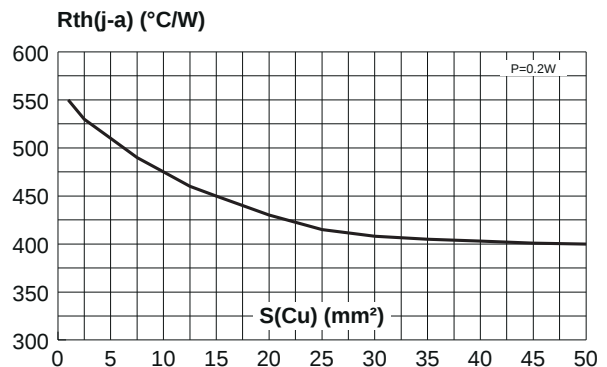
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
V_{BR}	$T_j = 25^{\circ}\text{C}$	$I_R = 10\mu\text{A}$	70			V
V_F^*	$T_j = 25^{\circ}\text{C}$	$I_F = 1\text{mA}$			410	mV
I_R^{**}	$T_j = 25^{\circ}\text{C}$	$V_R = 50\text{V}$			100	nA

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

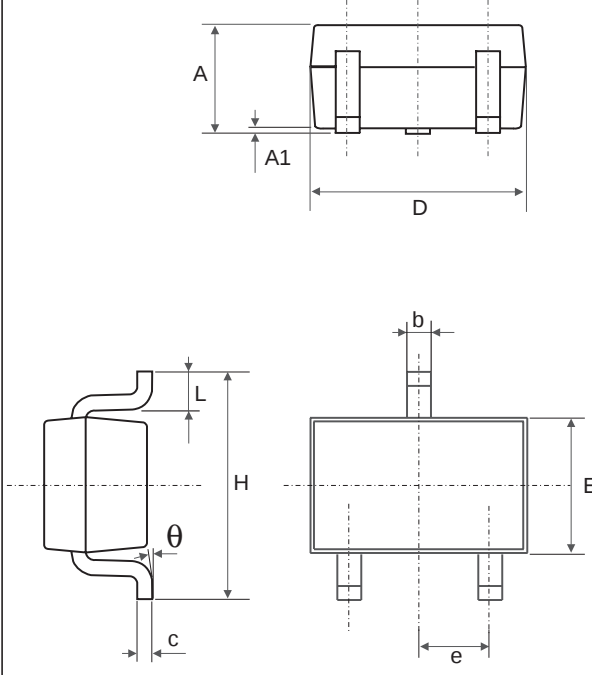
DYNAMIC CHARACTERISTICS

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
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).

PACKAGE MECHANICAL DATA
SOT-323

		DIMENSIONS					
REF.	Millimeters			Inches			
	Min.	Typ.	Max.	Min.	Typ.	Max.	
A	0.8		1.1	0.031		0.043	
A1	0.0		0.1	0.0		0.004	
b	0.25		0.4	0.010		0.016	
c	0.1		0.26	0.004		0.010	
D	1.8	2.0	2.2	0.071	0.079	0.086	
E	1.15	1.25	1.35	0.045	0.049	0.053	
e		0.65			0.026		
H	1.8	2.1	2.4	0.071	0.083	0.094	
L	0.1	0.2	0.3	0.004	0.008	0.012	
θ	0		30°	0		30°	

PACKAGE MECHANICAL DATA
 SOD-323

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A		1.17		0.046
A1	0	0.1	0	0.004
b	0.25	0.44	0.01	0.017
c	0.1	0.25	0.004	0.01
D	1.52	1.8	0.06	0.071
E	1.11	1.45	0.044	0.057
H	2.3	2.7	0.09	0.106
L	0.1	0.46	0.004	0.02
Q1	0.1	0.41	0.004	0.016

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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