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

SMALL SIGNAL SCHOTTKY DIODE

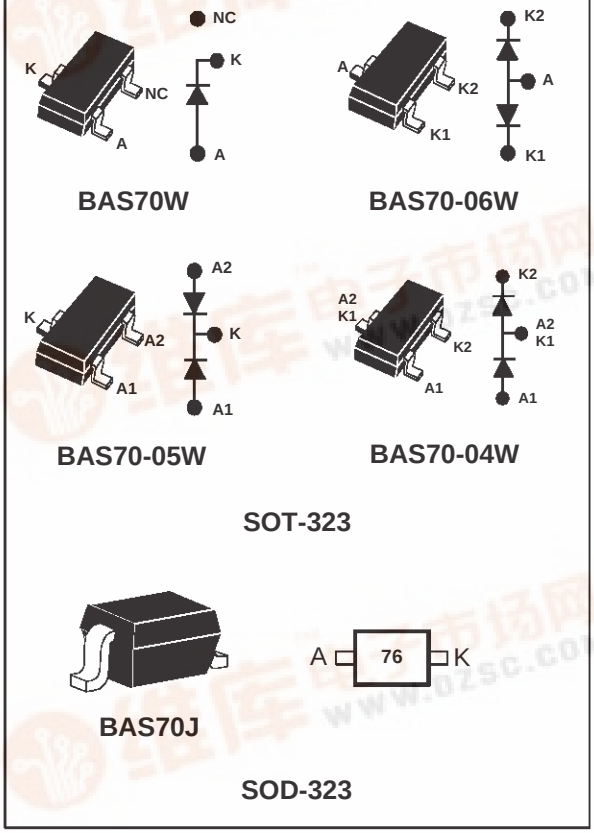
FEATURES AND BENEFITS

- 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 pining 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	tp = 10 ms	1	A
P_{tot}	Power dissipation (note 1) Tamb = 25°C	SOD-323	230	mW
		SOT-323		
T_{stg}	Maximum storage temperature range		- 65 to +150	°C
Tj	Maximum operating junction temperature *		150	°C
T_L	Maximum temperature for soldering during 10s		260	°C

Note 1: for double diodes, Ptot is the total dissipation of both diodes.

* : $\frac{dPtot}{dTj} < \frac{1}{Rth(j-a)}$ thermal runaway condition for a diode on its own heatsink

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}	Tj = 25°C	I_R = 10µA	70			V
V_F *	Tj = 25°C	I_F = 1mA			410	mV
I_R **	Tj = 25°C	V_R = 50V			100	nA

Pulse test: * tp = 380µs, δ < 2%
** tp = 5 ms, δ < 2%

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	Tj = 25°C F = 1MHz	V_R = 0V			2	pF
τ*	Tj = 25°C Krakauer Method	I_F = 5mA			100	ps

* Effective carrier life time.

Fig. 1: Forward voltage drop versus forward current.

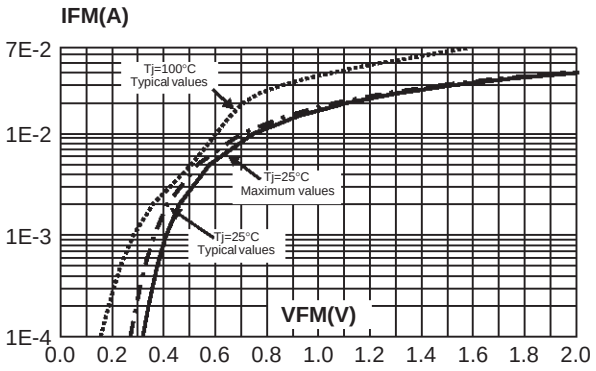


Fig. 2: Reverse leakage current versus reverse voltage applied (typical values).

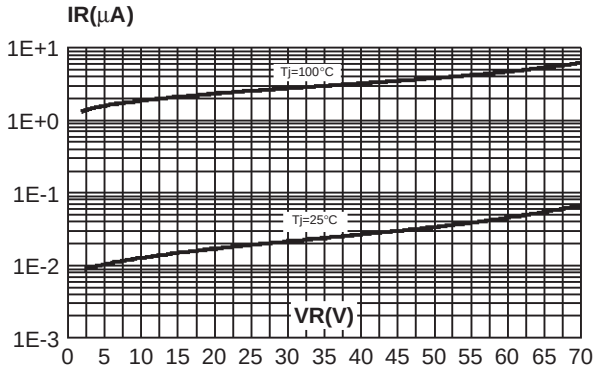


Fig. 3: Reverse leakage current versus junction temperature (typical values).

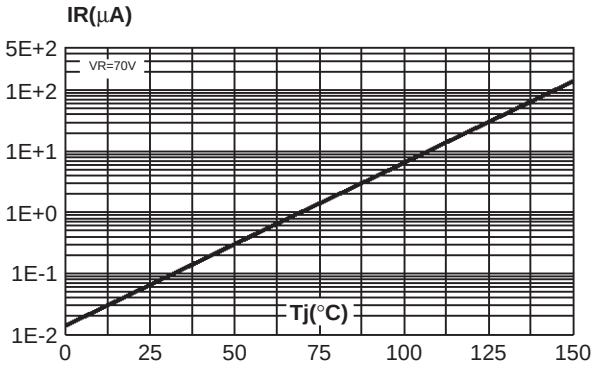


Fig. 4: Junction capacitance versus reverse voltage applied (typical values).

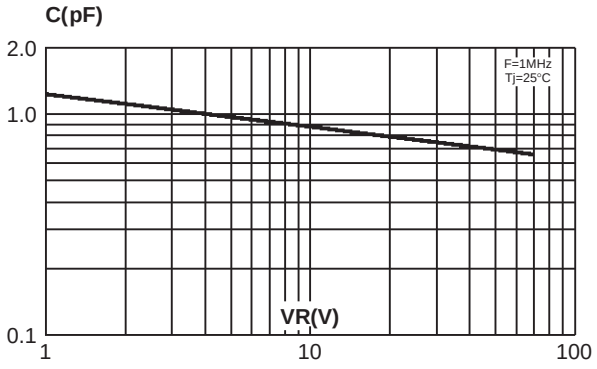


Fig. 5: Relative variation of thermal impedance junction to ambient versus pulse duration (epoxy FR4 with recommended pad layout, S(Cu)=35µm).

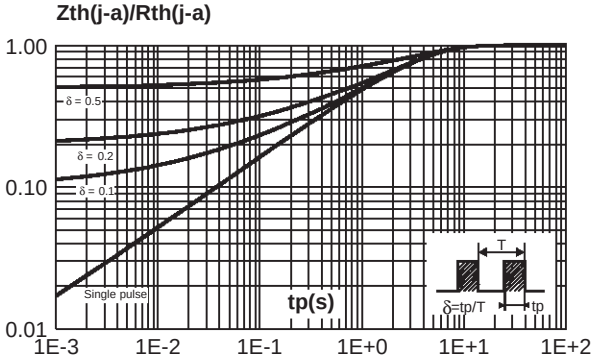
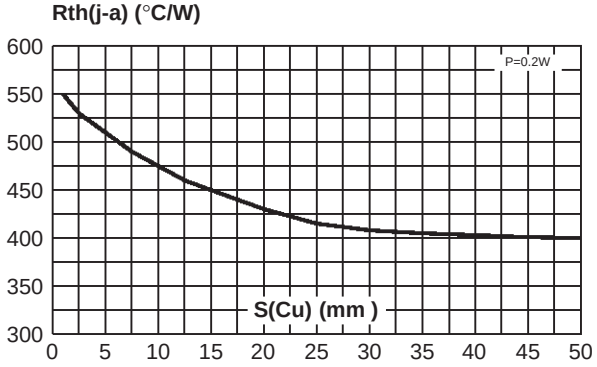
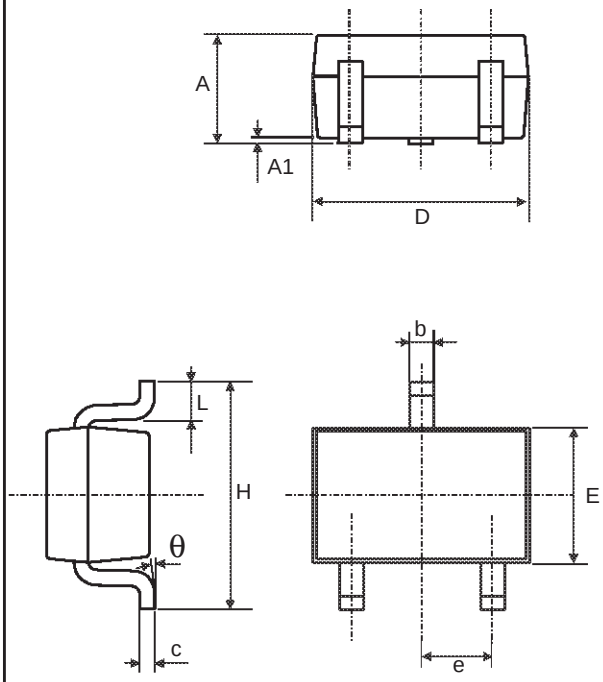


Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35µm).



PACKAGE MECHANICAL DATA

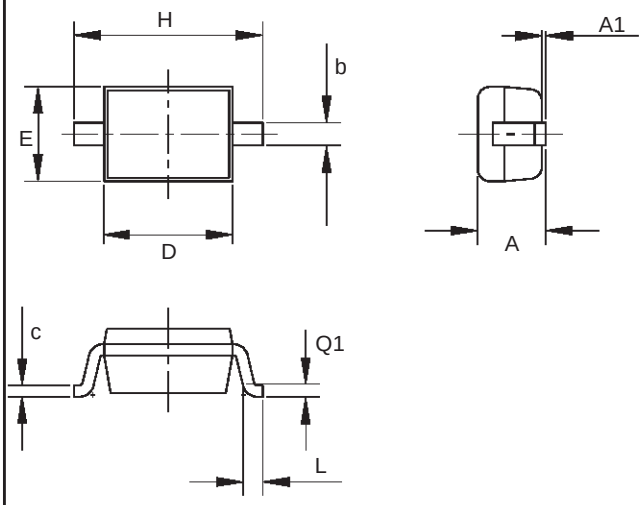
SOT-323



REF.	DIMENSIONS					
	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

(a) Epoxy meets UL94,V0