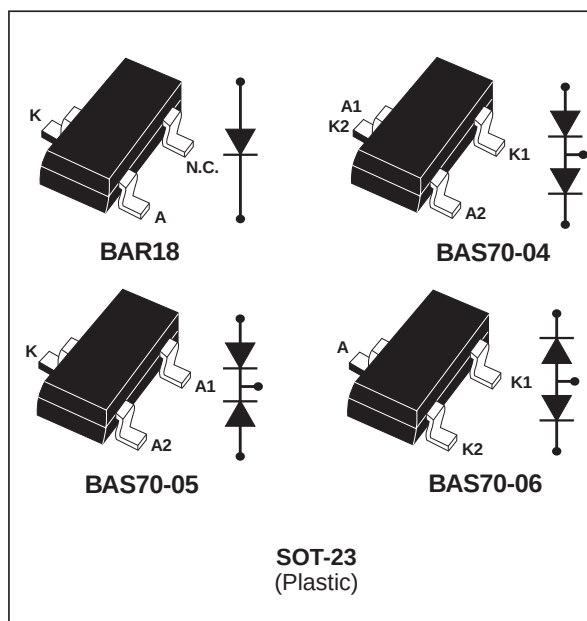


SMALL SIGNAL SCHOTTKY DIODES

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

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

THERMAL RESISTANCE

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

(*) 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
τ^*	$T_j = 25^{\circ}\text{C}$ $I_F = 5\text{mA}$ Krakauer Method			100	ps

* Effective carrier life time.

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

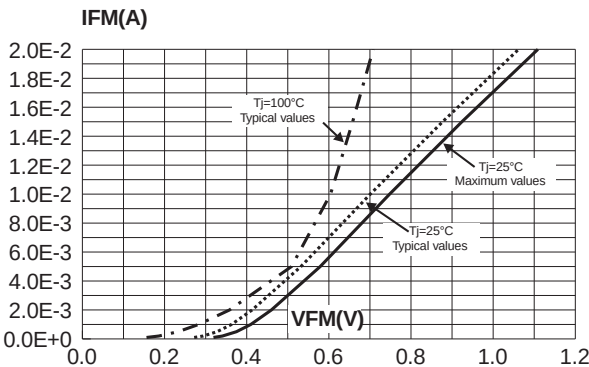


Fig. 1-2: Forward voltage drop versus forward current (high level).

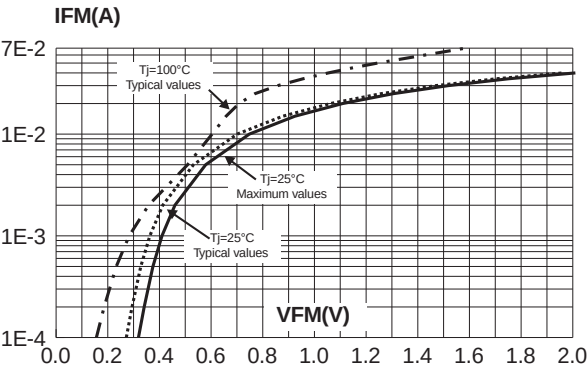


Fig. 2: Reverse leakage current versus reverse voltage applied (typical values).

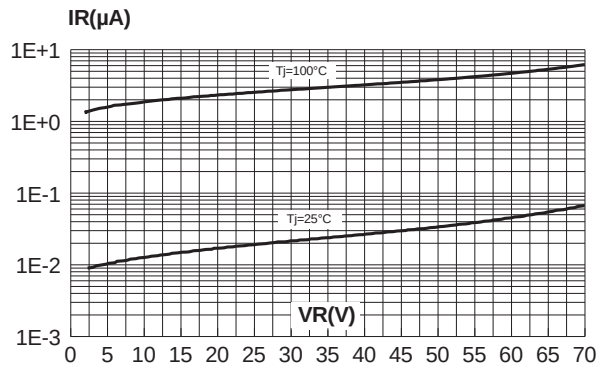


Fig. 3: Reverse leakage current versus junction temperature (typical values)

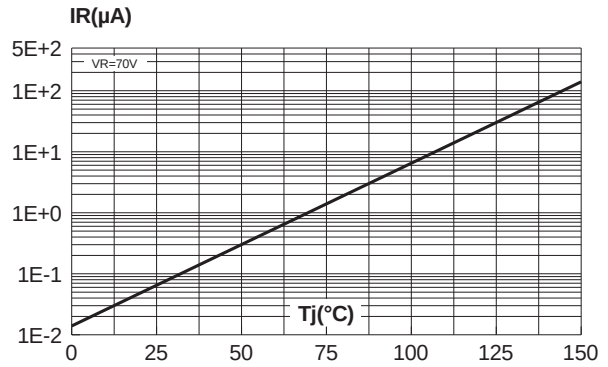


Fig. 4: Junction capacitance versus reverse voltage applied (typical values).

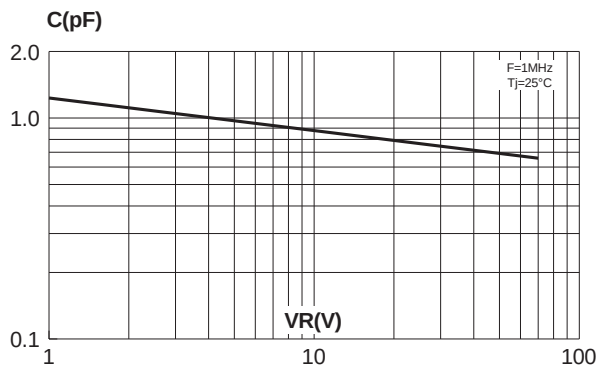


Fig. 5: Relative variation of thermal impedance junction to ambient versus pulse duration (alumine substrate 10mm*8mm*0.5mm).

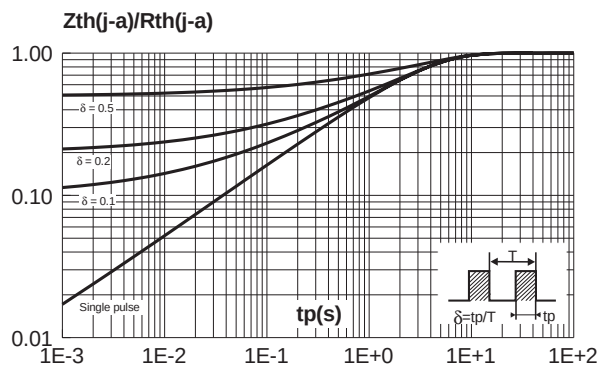
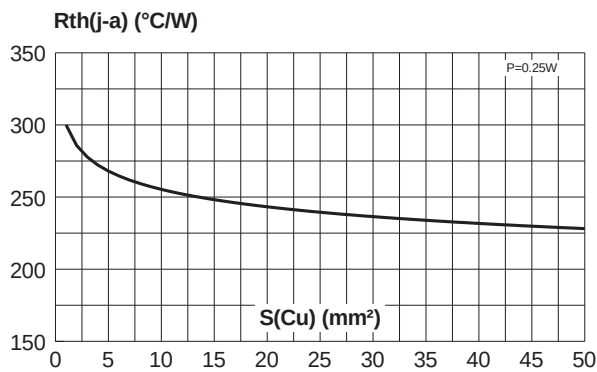


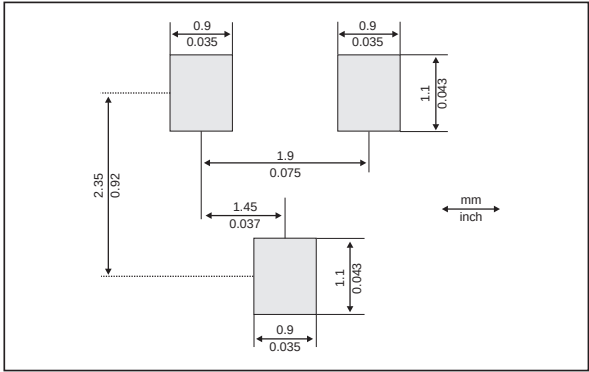
Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35 μm).



PACKAGE MECHANICAL DATA
SOT23 (Plastic)

The image displays three views of an SOT23 package: a top view, a side view, and a cross-sectional view. The top view shows dimensions E (width), B (lead width), e (lead thickness), e1 (total width including leads), and S (pitch). The side view shows dimensions A (body width), A1 (lead thickness), and D (body height). The cross-sectional view shows dimensions H (body height), L (lead height), and c (lead thickness).

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.89	1.4	0.035	0.055
A1	0	0.1	0	0.004
B	0.3	0.51	0.012	0.02
c	0.085	0.18	0.003	0.007
D	2.75	3.04	0.108	0.12
e	0.85	1.05	0.033	0.041
e1	1.7	2.1	0.067	0.083
E	1.2	1.6	0.047	0.063
H	2.1	2.75	0.083	0.108
L	0.6 typ.		0.024 typ.	
S	0.35	0.65	0.014	0.026

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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