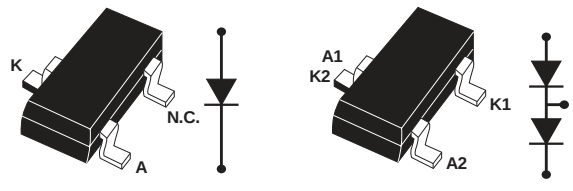
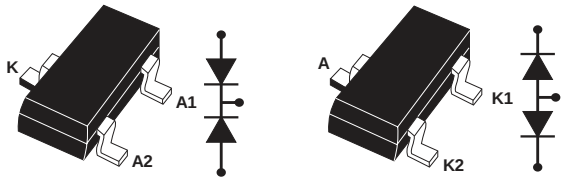
BAR 18
BAS70-04 06

SMALL SIGNAL SCHOTTKY DIODES



BAR18 BAS70-04



BAS70-05 BAS70-06

SOT-23
(Plastic)

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)	Tamb = 25°C	250	mW
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	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction to ambient (*)	500	°C/W

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

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

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			200	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 V_R = 0V F = 1MHz			2	pF
τ*	Tj = 25°C I_F = 5mA Krakauer Method			100	ps

* Effective carrier life time.

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

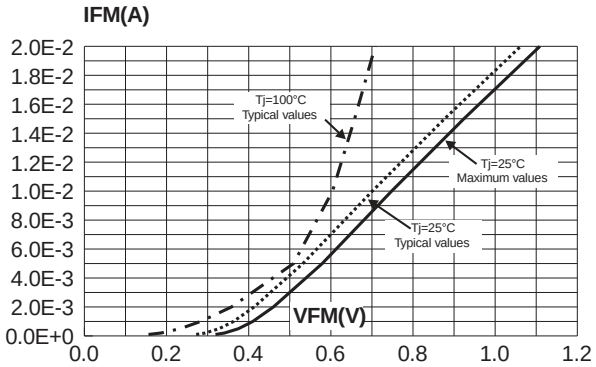


Fig. 1-2: Forward voltage drop versus forward current (high level).

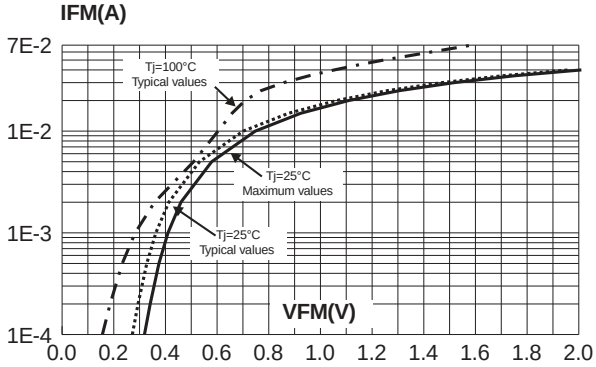


Fig. 2: Reverse leakage current versus reverse voltage applied (typical values).

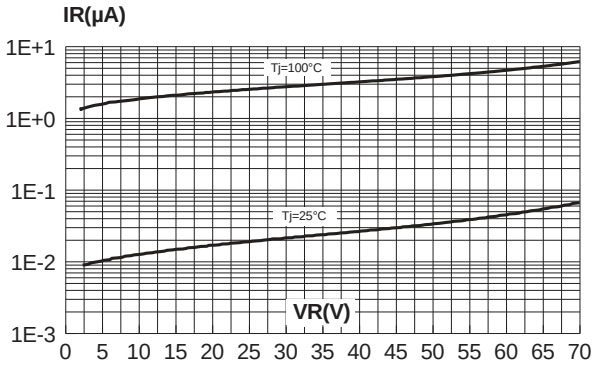


Fig. 3: Reverse leakage current versus junction temperature (typical values)

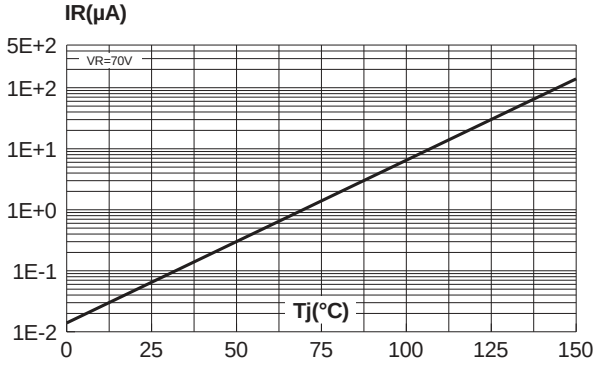


Fig. 4: Junction capacitance versus reverse voltage applied (typical values).

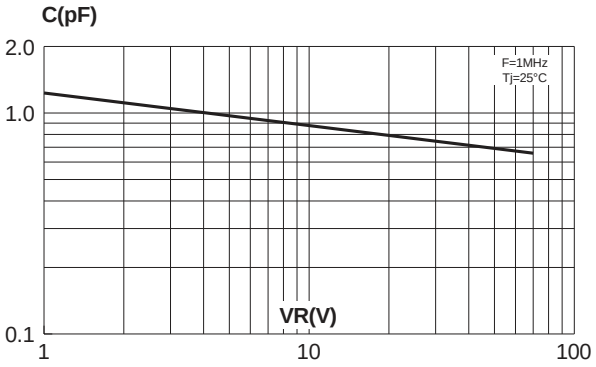


Fig. 5: Relative variation of thermal impedance junction to ambient versus pulse duration (alumine substrate 10mm*8mm*0.5mm).

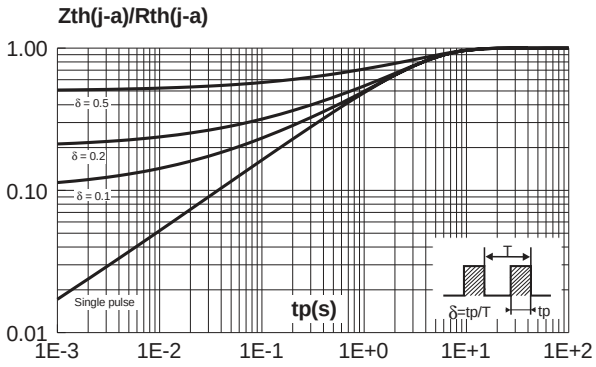
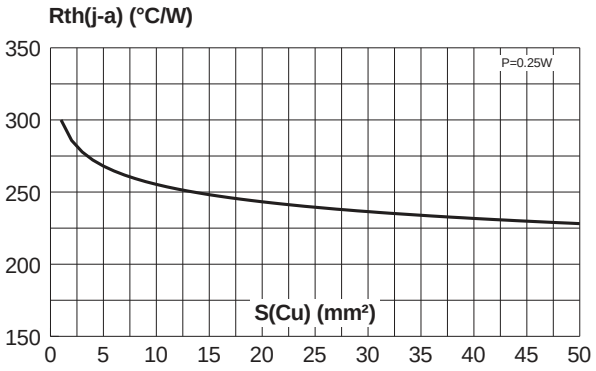
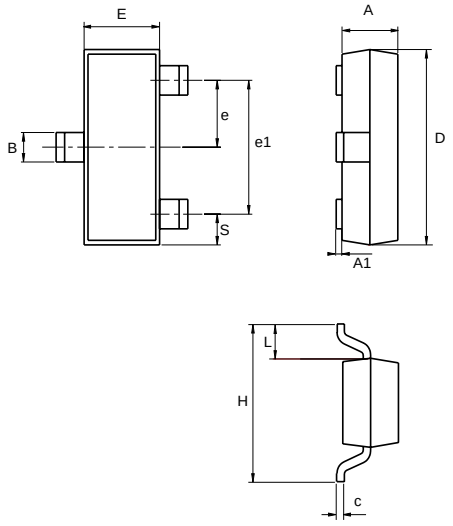


Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35µm).



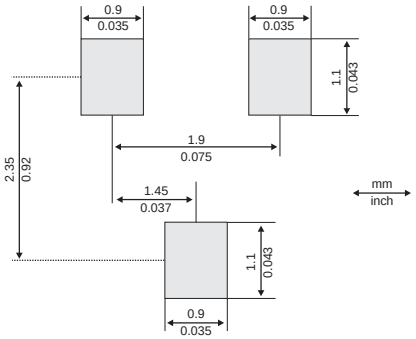
PACKAGE MECHANICAL DATA

SOT23 (Plastic)



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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