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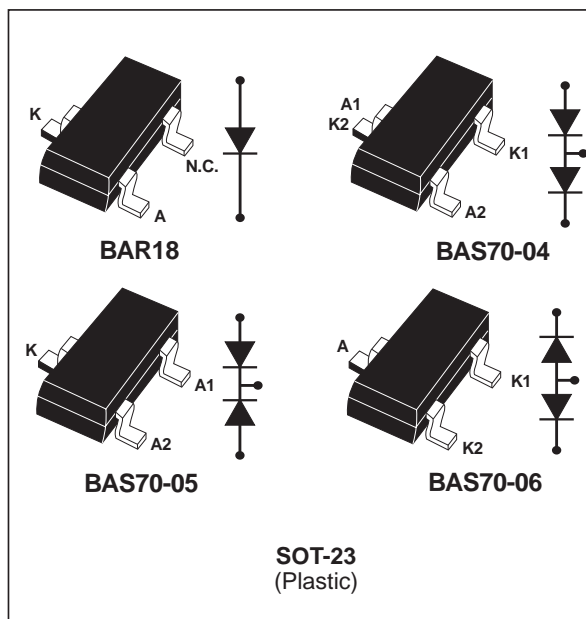


BAR 18 BAS70-04 06

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)	$T_{amb} = 25^\circ\text{C}$	250 mW
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

THERMAL RESISTANCE

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

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

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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).

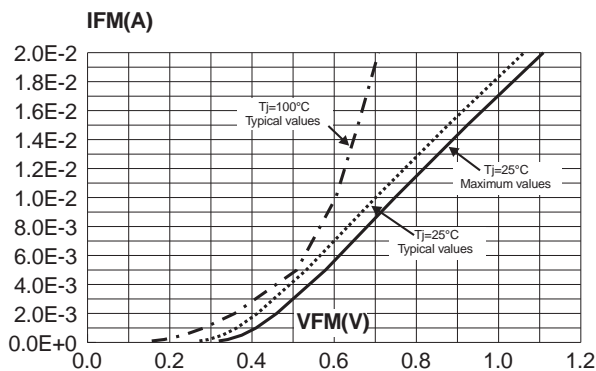
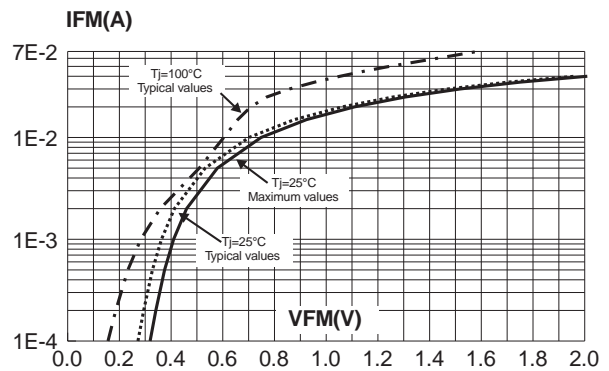


Fig. 1-2: Forward voltage drop versus forward current (high level).



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

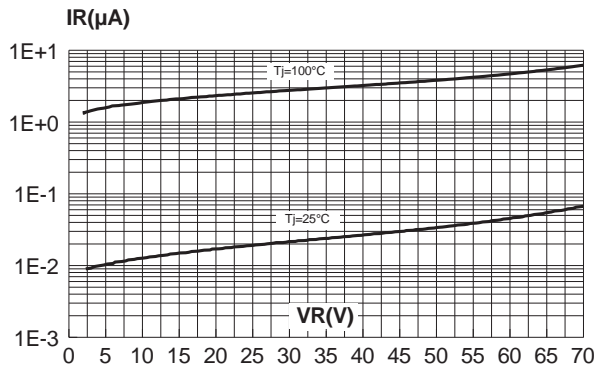


Fig. 3: Reverse leakage current versus junction temperature (typical values)

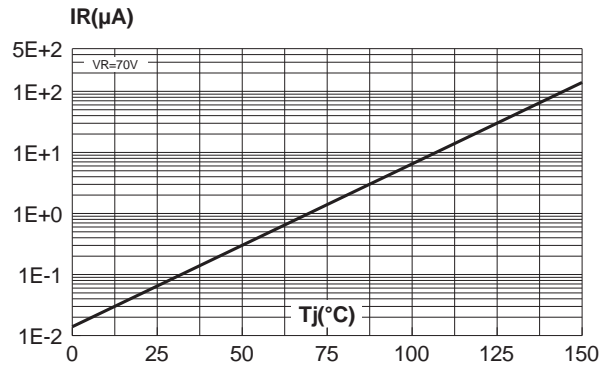


Fig. 4: Junction capacitance versus reverse voltage applied (typical values).

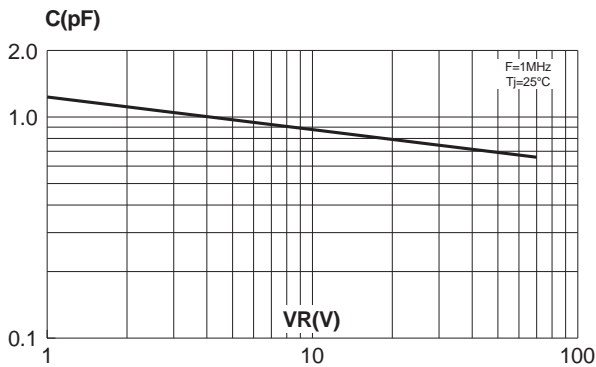


Fig. 5: Relative variation of thermal impedance junction to ambient versus pulse duration (alumine substrate 10mm*8mm*0.5mm).

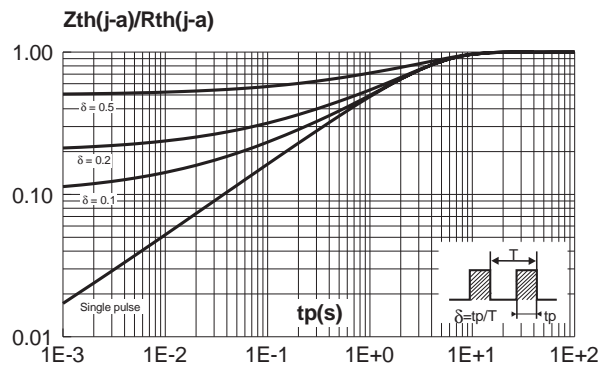
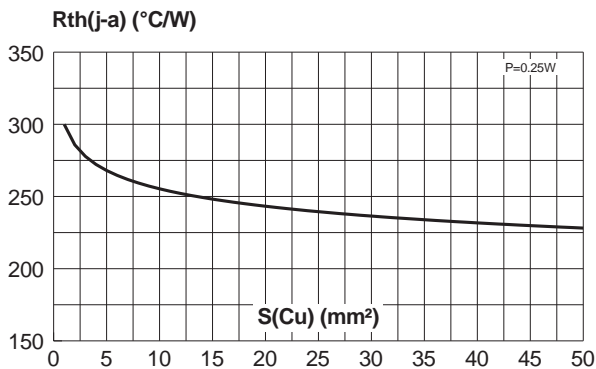


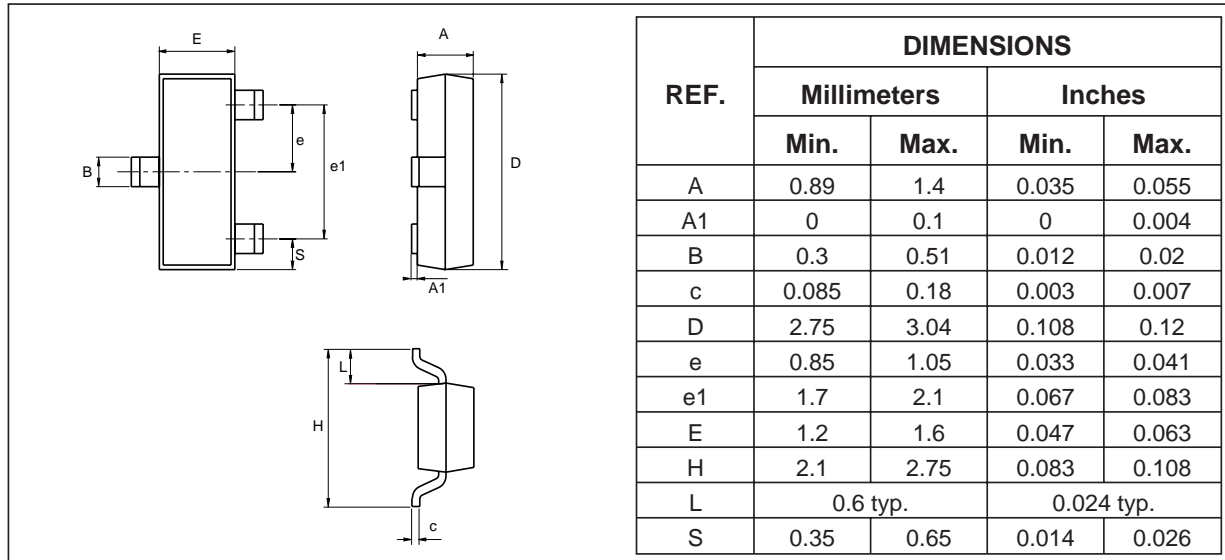
Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35 μm).



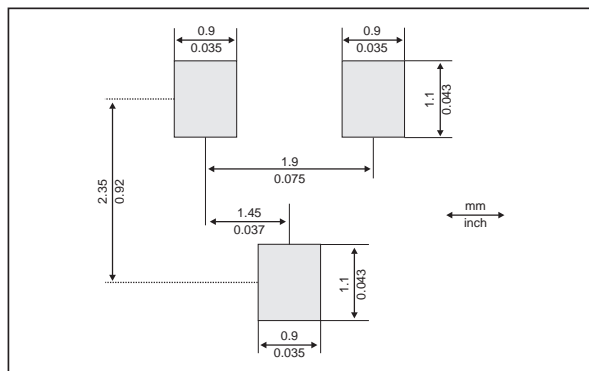
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PACKAGE MECHANICAL DATA

SOT23 (Plastic)



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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