



BAS70-07S / BAS70-08S

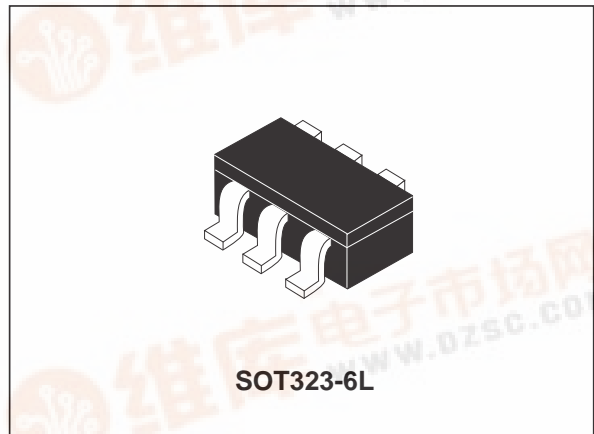
RF DETECTION DIODE

FEATURES AND BENEFITS

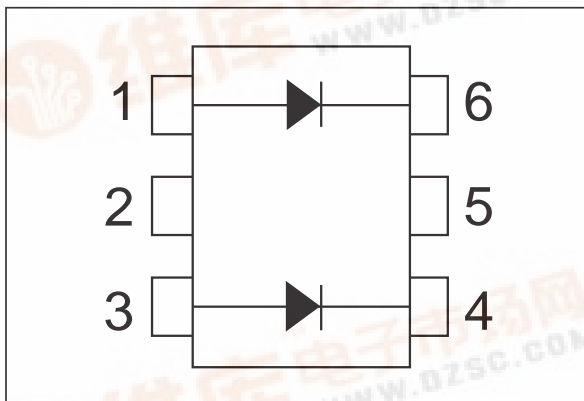
- LOW DIODE CAPACITANCE
- LOW SERIES INDUCTANCE AND RESISTANCE
- SURFACE MOUNT PACKAGE

DESCRIPTION

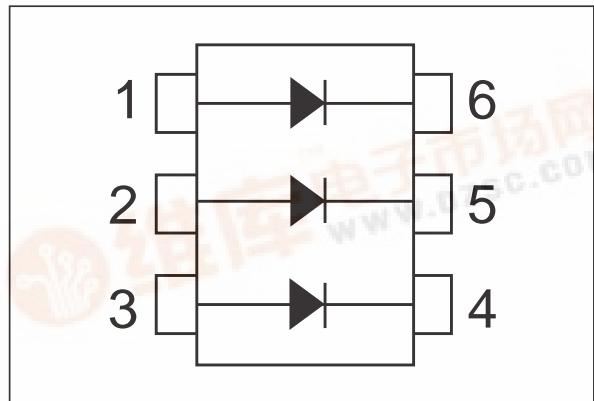
Dual and Triple Schottky diode in SOT323-6L package. This diode is intended to be used in RF application for signal detection and temperature compensation.



BAS70-07S SCHEMATIC DIAGRAM



BAS70-08S SCHEMATIC DIAGRAM



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_R	Continuous reverse voltage		70	V
I_F	Continuous forward current		70	mA
I_{FRM}	Repetitive peak forward current		70	mA
I_{FSM}	Surge non repetitive forward current	$t_p = 10$ ms sinusoidal	1	A
P	Power Dissipation	$T_a = 55^\circ\text{C}$	250	mW
T_{stg}	Storage temperature range		- 65 to +150	$^\circ\text{C}$
T_j	Maximum junction temperature		150	$^\circ\text{C}$
T_L	Maximum temperature for soldering		260	$^\circ\text{C}$

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THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to ambient on printed circuit board FR4 with recommended pad layout	500	°C/W

STATIC ELECTRICAL CHARACTERISTICS (T_j = 25°C otherwise specified)

Symbol	Parameter	Tests Conditions	Min.	Typ.	Max.	Unit
V_F	Forward voltage drop	$I_F = 1 \text{ mA}$			0.41	V
		$I_F = 10 \text{ mA}$			0.75	V
		$I_F = 15 \text{ mA}$			1	V
I_R	Reverse leakage current	$V_R = 70 \text{ V}$			10	μA
V_{BR}	Breakdown voltage	$I_R = 10 \text{ μA}$	70			V

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
C	Junction capacitance	$V_R = 0 \text{ V}$	$F = 1 \text{ MHz}$			2	pF
R_F	Differential forward resistance	$I_F = 10 \text{ mA}$	$F = 100 \text{ MHz}$		30		Ohm
L_s	Series inductance				1.5		nH

Fig. 1: Forward voltage drop versus forward current (typical values).

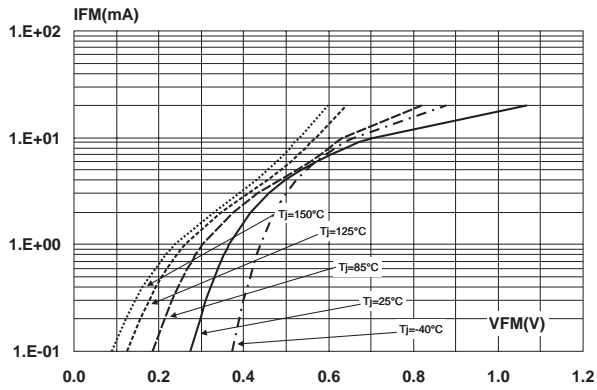


Fig. 2: Reverse leakage current versus reverse voltage applied (typical values).

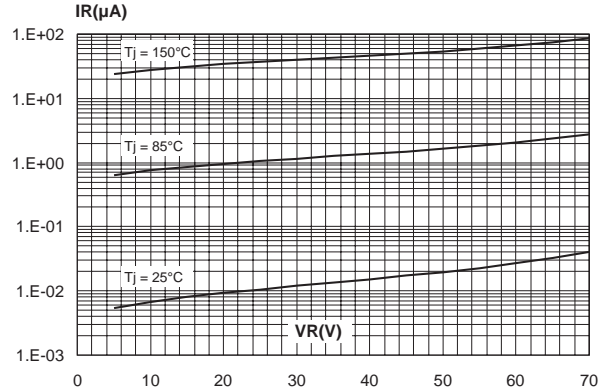


Fig. 3: Differential forward resistance versus forward current (typical values).

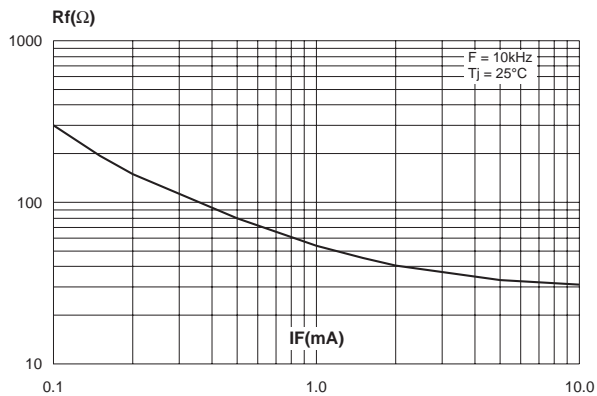


Fig. 4: Junction capacitance versus reverse voltage applied (typical values).

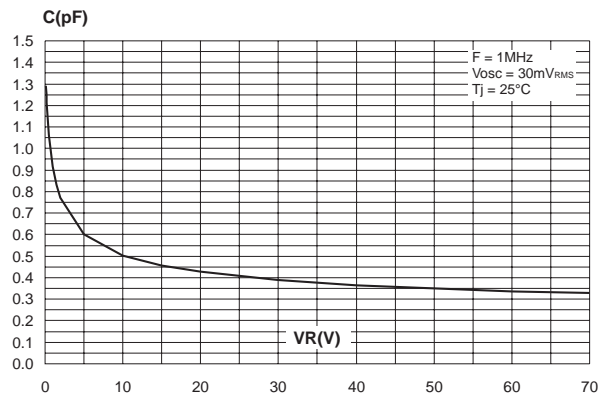


Fig. 5: Variation of thermal impedance junction to ambient versus pulse duration (printed circuit board, epoxy FR4).

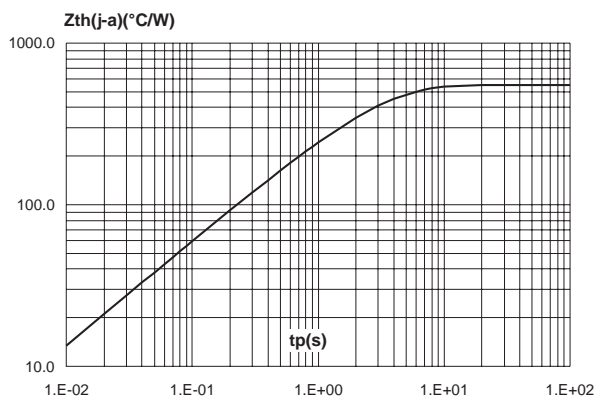
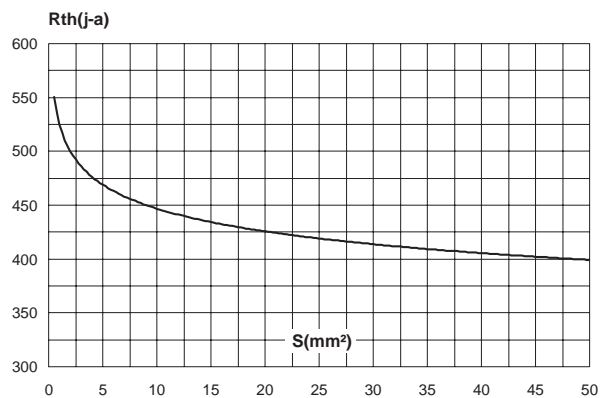
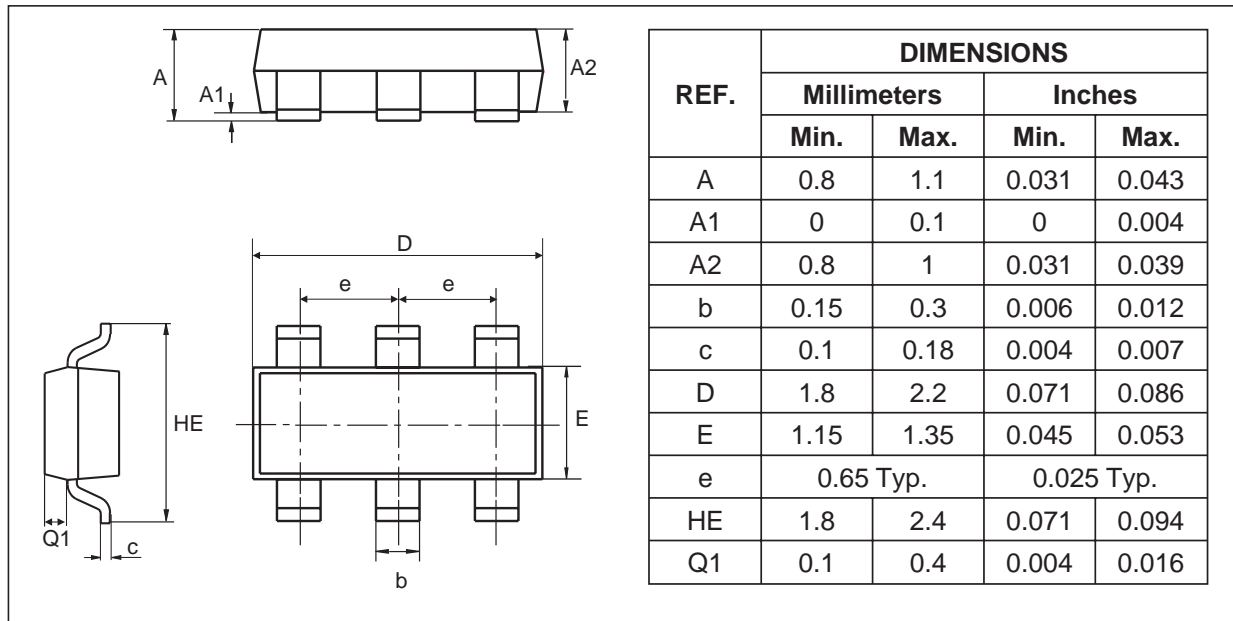


Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (printed circuit board, epoxy FR4).

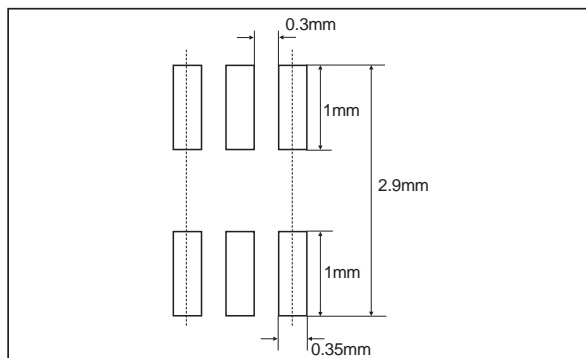


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PACKAGE MECHANICAL DATA SOT323-6L



FOOTPRINT DIMENSIONS (millimeters)



MARKING

Type	Marking	Package	Weight	Base qty	Delivery mode
BAS70-07S	D32	SOT323-6L	0.006g	3000	Tape & reel
BAS70-08S	D33				

- Epoxy meets UL94, V0

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