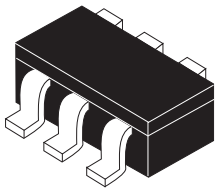
BAS70-07S / BAS70-08S

RF DETECTION DIODE

FEATURES AND BENEFITS

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

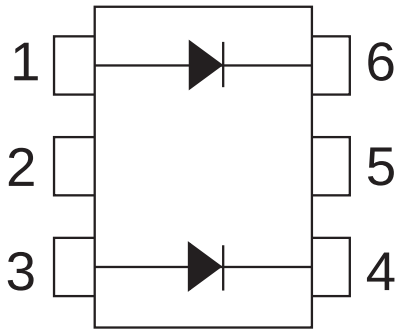


SOT323-6L

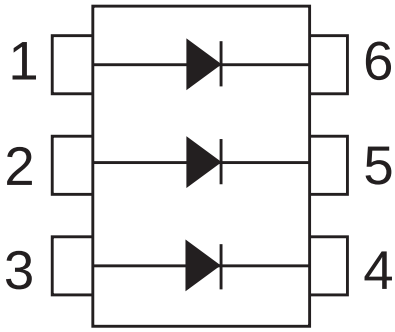
DESCRIPTION

Dual and Triple Schottky diode in SOT323-6L package. This diode is intented 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	Ta = 55°C	250	mW
T_{stg}	Storage temperature range		- 65 to +150	°C
Tj	Maximum junction temperature		150	°C
TL	Maximum temperature for soldering		260	°C

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 (Tj = 25°C otherwise specified)

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

ELECTRICAL CHARACTERISTICS

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

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

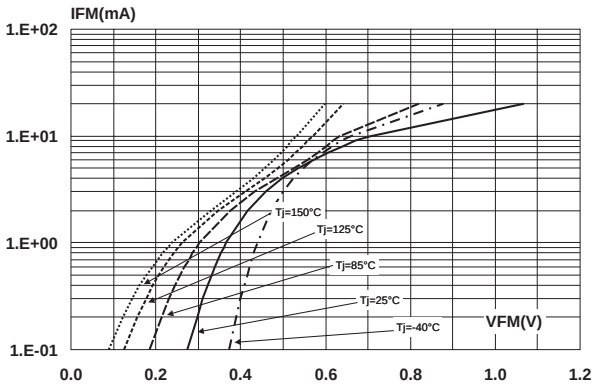


Fig. 2: Reverse leakage current versus reverse voltage applied (typical values).

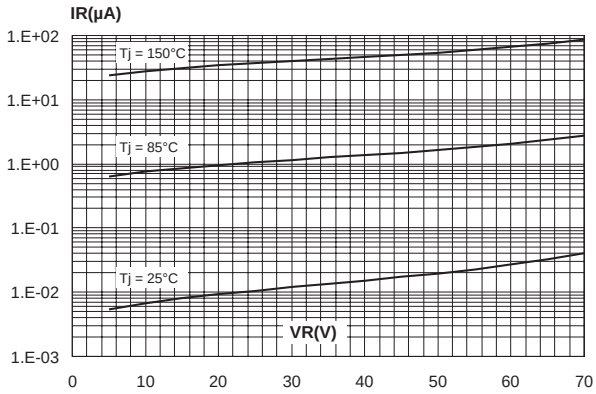


Fig. 3: Differential forward resistance versus forward current (typical values).

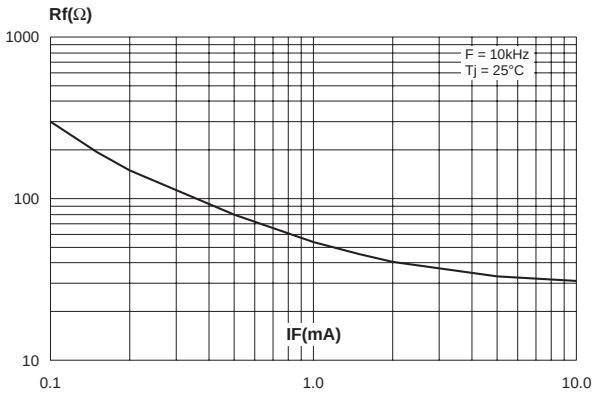


Fig. 4: Junction capacitance versus reverse voltage applied (typical values).

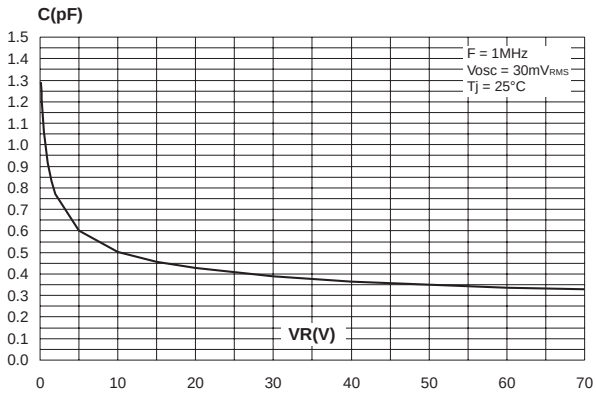


Fig. 5: Variation of thermal impedance junction to ambient versus pulse duration (printed circuit board, epoxy FR4).

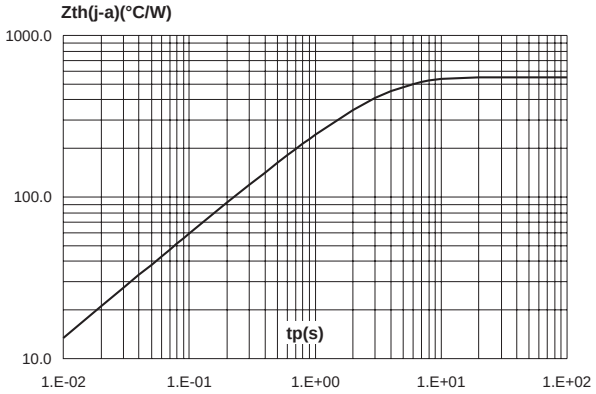
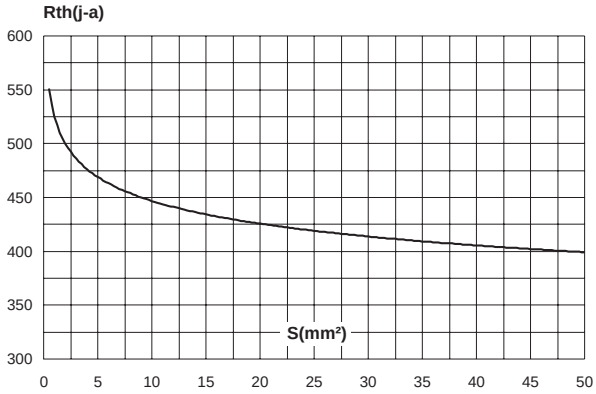
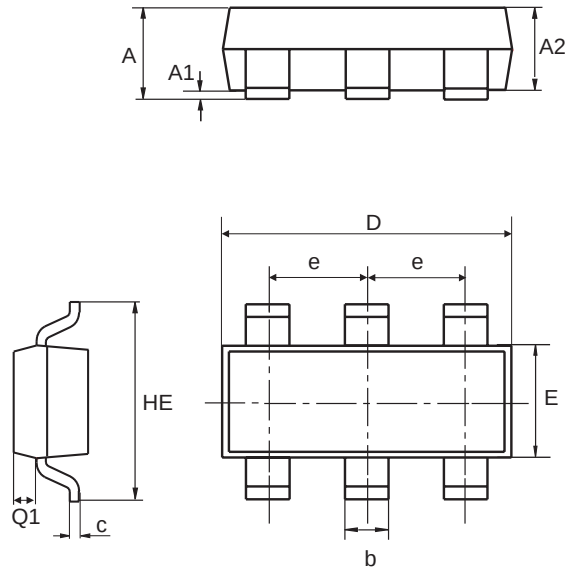


Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (printed circuit board, epoxy FR4).



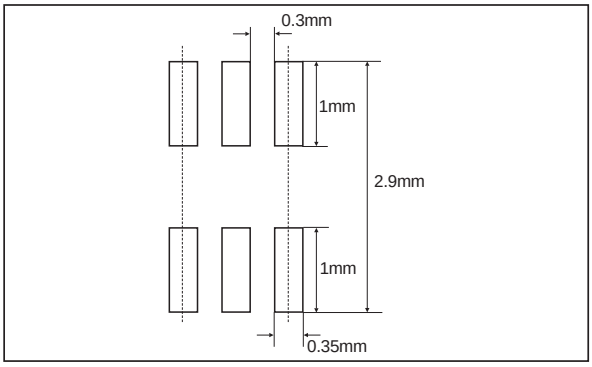
PACKAGE MECHANICAL DATA

SOT323-6L



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.8	1.1	0.031	0.043
A1	0	0.1	0	0.004
A2	0.8	1	0.031	0.039
b	0.15	0.3	0.006	0.012
c	0.1	0.18	0.004	0.007
D	1.8	2.2	0.071	0.086
E	1.15	1.35	0.045	0.053
e	0.65 Typ.		0.025 Typ.	
HE	1.8	2.4	0.071	0.094
Q1	0.1	0.4	0.004	0.016

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