SEMICONDUCTOR

DATA SHEET

BAS40/A/C/S

SCHOTTKY BARRIER DIODE

Features

- Low forward current
- Guard ring protected
- Low diode capacitance.

APPLICATIONS

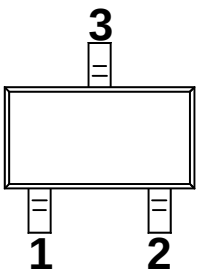
- Ultra high-speed switching
- Voltage clamping
- Protection circuits.
- Blocking diodes.

DESCRIPTION

Planar Schottky barrier diodes with an integrated guard ring for stress protection.

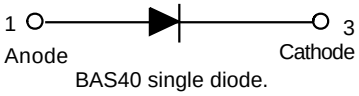
Pb-Free Package is Available.

SOT–23 (TO–236AB)

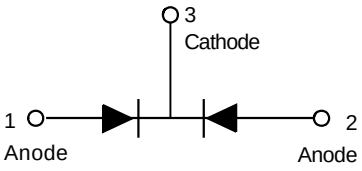


ORDERING INFORMATION

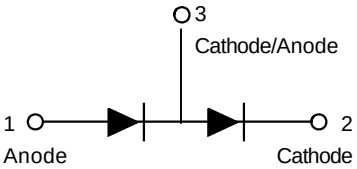
Device	Marking	Shipping
BAS40	B1	3000 Tape & Reel
BAS40A	L2	3000 Tape & Reel
BAS40C	45	3000 Tape & Reel
BAS40S	CB	3000 Tape & Reel



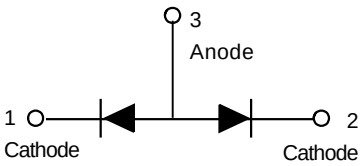
BAS40 single diode.



BAS40C double diode.



BAS40S double diode.



BAS40A double diode.

MAXIMUM RATINGS (T_A = 25°C)

Parameter	Symbol	Min.	Max.	Unit	Conditions
Continuous reverse voltage	V_R	–	40	V	
Continuous forward current	I_F	–	120	mA	
Repetitive Peak forward surge current	I_{FSM}	–	120	mA	$t_p \leqslant 1s; \delta \leqslant 0.5$
Non-repetitive peak forward current	I_{FSM}	–	200	mA	t_p<10ms
Storage temperature	T_{stg}	-65	+150	°C	
Junction temperature	T_j	–	150	°C	
Operating ambient temperature	T_{amb}	-65	+150	°C	

DEVICE MARKING

ELECTRICAL CHARACTERISTICS(T_A = 25°C**)**

Parameter	Symbol	Max.	Unit	Conditions
Forward voltage(Fig.1)	V_F	400	mV	I_F=1mA
		560	mv	I_F=10mA
		1	v	I_F=40mA
Reverse current(Fig.2 ;note1)	I_R	1	μA	V_R=30V
		10	μA	V_R=40V
Diode capacitance(Fig.4)	C_d	5	pF	f=1MHz;V_R=0

Note:

1. Pulse test:t_p=300μs;δ=0.02.

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT	CONDITIONS
Thermal resistance from junction to ambient	$R_{th\ j\text{-}a}$	500	k/w	note1

Note

1. Refer to SOT23 or SOT143B standard mounting conditions.

DEVICE CHARACTERISTICS

BAS40/A/C/S

Electrical characteristic curves(T_A = 25°C)

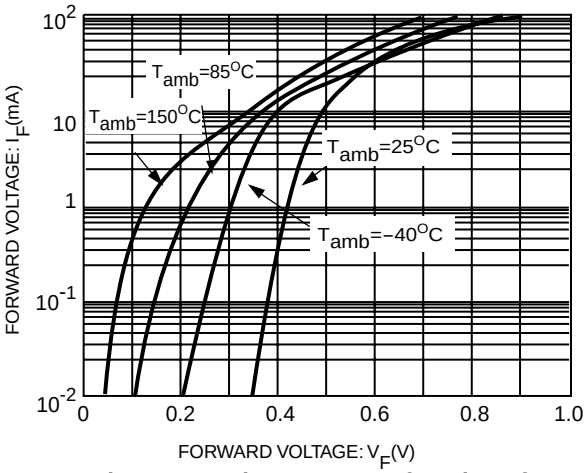


Fig.1 Forward current as a function of forward voltage; typical values.

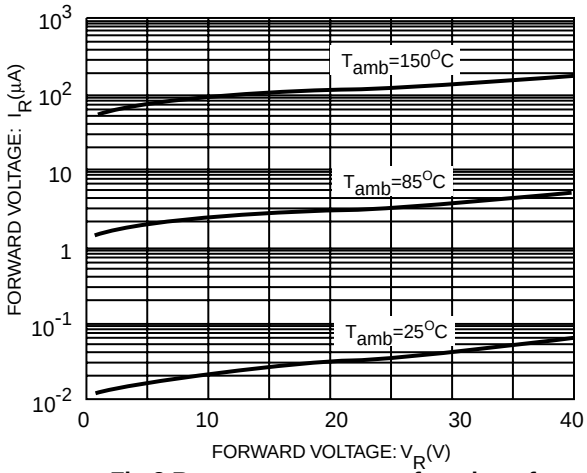


Fig.2 Reverse current as a function of reverse voltage; typical values.

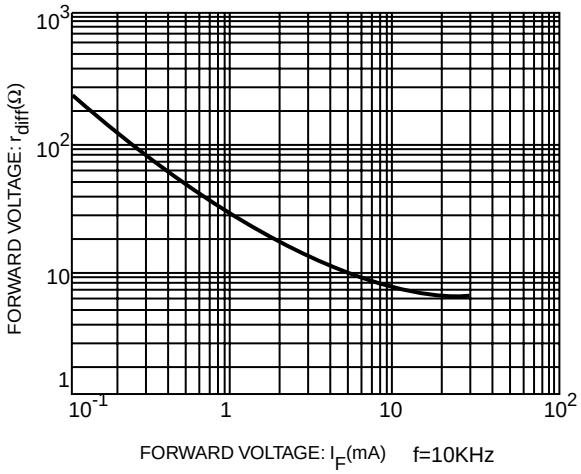


Fig.3 Differential forward resistance as a function of forward current;typical values.

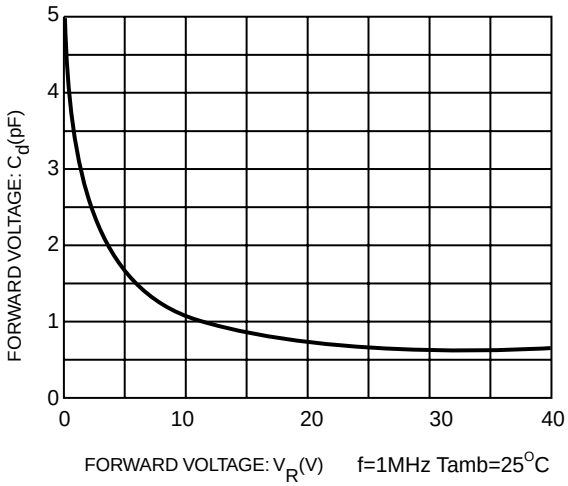
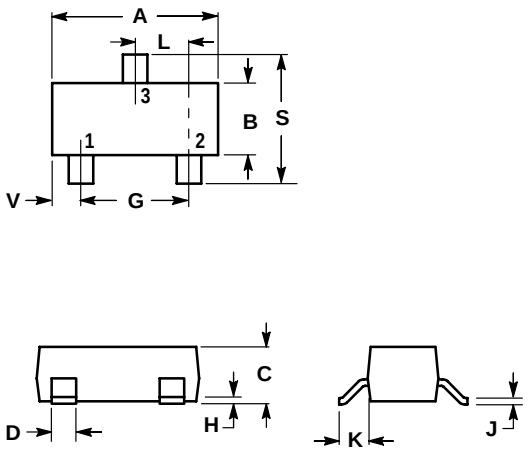


Fig.4 Diode capacitance as a function of reverse voltage;typical values.

PACKAGE OUTLINE & DIMENSIONS

BAS40/A/C/S

SOT–23



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60