



## DESCRIPTION

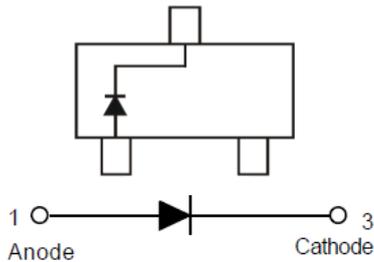
120mA Planar Schottky barrier diodes with an integrated guard ring for stress protection. Single diodes and double diodes with different pinning are available.

The BAS40 is available in SOT-23 package

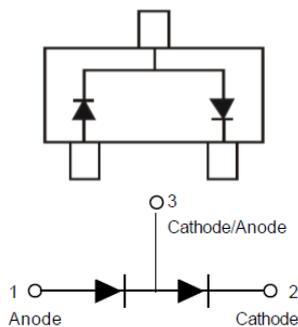
## ORDERING INFORMATION

Package Type	Part Number
SOT-23	BAS40
	BAS40-04
	BAS40-05
	BAS40-06
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

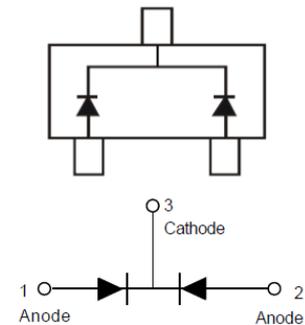
## PIN DESCRIPTION



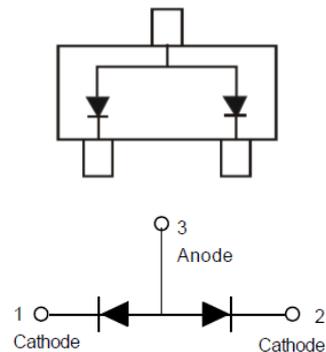
BAS40 single diode.



BAS40-04 double diode.



BAS40-05 double diode.



BAS40-06 double diode.

## FEATURES

- Low Turn-on Voltage
- Fast Switching
- Low forward current
- High breakdown voltage
- Guard ring protected
- Low diode capacitance.
- Available in SOT-23 package

## APPLICATIONS

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



## ABSOLUTE MAXIMUM RATINGS

$V_R$ , Continuous Reverse Voltage	40V
$I_F$ , Continuous Forward Current	120mA
$I_{FSM}$ , Repetitive Peak Forward Surge Current ( $t_p \leq 1s; \delta \leq 0.5$ )	120mA
$I_{FSM}$ , Non-repetitive Peak Forward Current ( $t_p < 10ms$ )	200mA
$T_{STG}$ , Storage Temperature	-65~+150°C
$T_J$ , Junction Temperature	150°C
$T_{AMB}$ , Operating Ambient Temperature	-65~+150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL CHARACTERISTICS

$T_A = 25^\circ C$

Parameter	Symbol	Conditions	Max.	Unit
Forward Voltage (Fig.1)	$V_F$	$I_F=1mA$	400	mV
		$I_F=10mA$	560	mV
		$I_F=40mA$	1	V
Reverse Current (Fig.2) <sup>NOTE1</sup>	$I_R$	$V_R=30V$	1	$\mu A$
		$V_R=40V$	10	$\mu A$
Diode Capacitance (Fig.4)	$C_d$	$f=1MHz; V_R=0$	5	pF

NOTE1: Pulse test:  $t_p=300\mu s; \delta=0.02$ .

## THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient	$R_{th\ j-a}$	500	k/w



## TYPICAL CHARACTERISTICS

$T_A = 25^\circ\text{C}$

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

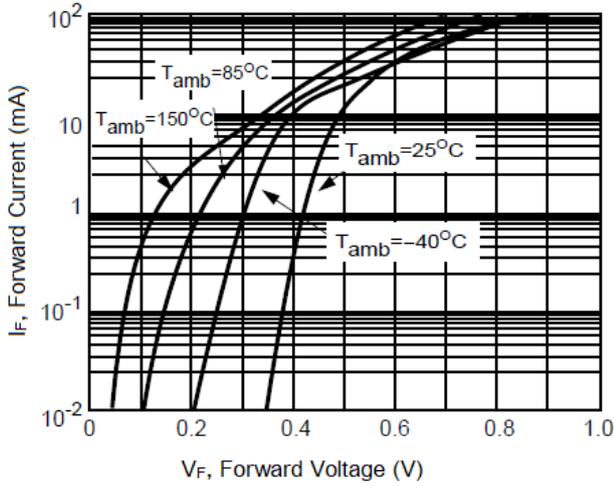


Figure 2. Reverse current as a function of reverse voltage; typical values.

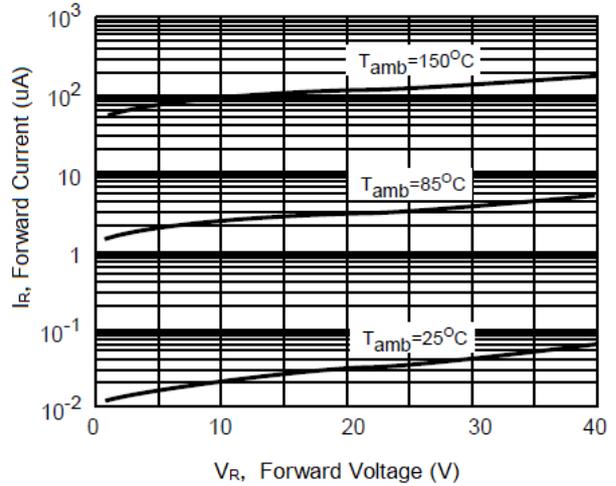


Figure 3. Differential forward resistance as a function of forward current; typical values.

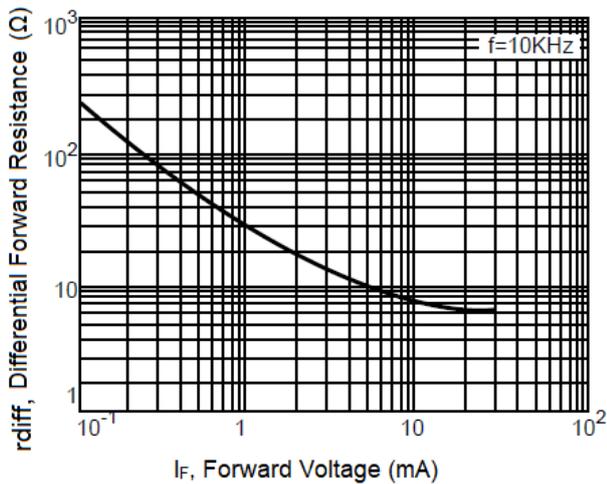
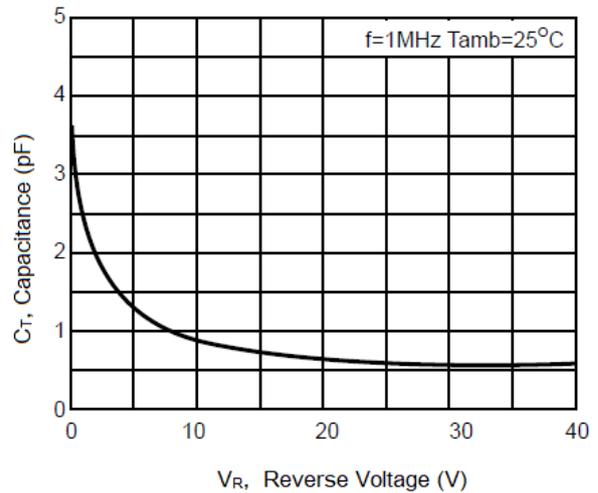


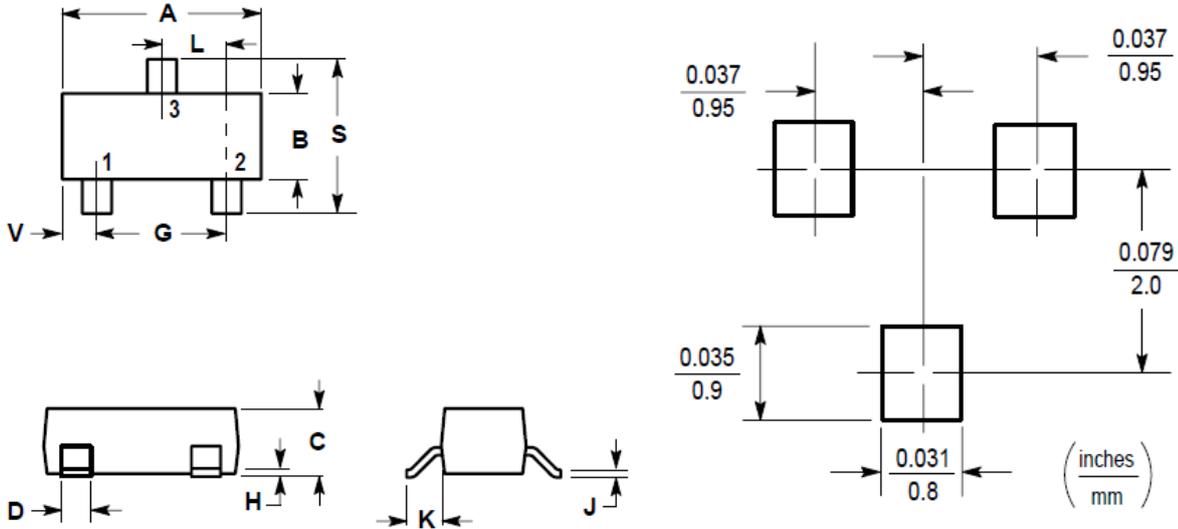
Figure 4. Diode capacitance as a function of reverse voltage; typical values.





**PACKAGE INFORMATION**

Dimension in SOT-23 Package (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.800	3.040	0.1102	0.1197
B	1.200	1.400	0.0472	0.0551
C	0.890	1.110	0.0350	0.0440
D	0.370	0.500	0.0150	0.0200
G	1.780	2.040	0.0701	0.0807
H	0.013	0.100	0.0005	0.0040
J	0.085	0.177	0.0034	0.0070
K	0.350	0.690	0.0140	0.0285
L	0.890	1.020	0.0350	0.0401
S	2.100	2.640	0.0830	0.1039
V	0.450	0.600	0.0177	0.0236



## IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or severe property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.