



# BAS40 /-04 /-05 /-06

### SURFACE MOUNT SCHOTTKY BARRIER DIODE

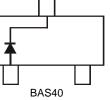
#### **Features**

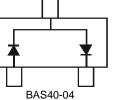
- Low Forward Voltage Drop
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)
- Qualified to AEC-Q101 Standards for High Reliability

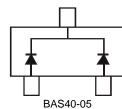
## **Mechanical Data**

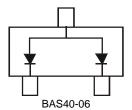
- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagrams Below
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.008 grams (approximate)











### Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	40	V
Forward Continuous Current (Note 1)	I <sub>FM</sub>	200	mA
Forward Surge Current (Note 1) @ t < 1.0s	I <sub>FSM</sub>	600	mA

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	PD	350	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	357	°C/W
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +150	°C

### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

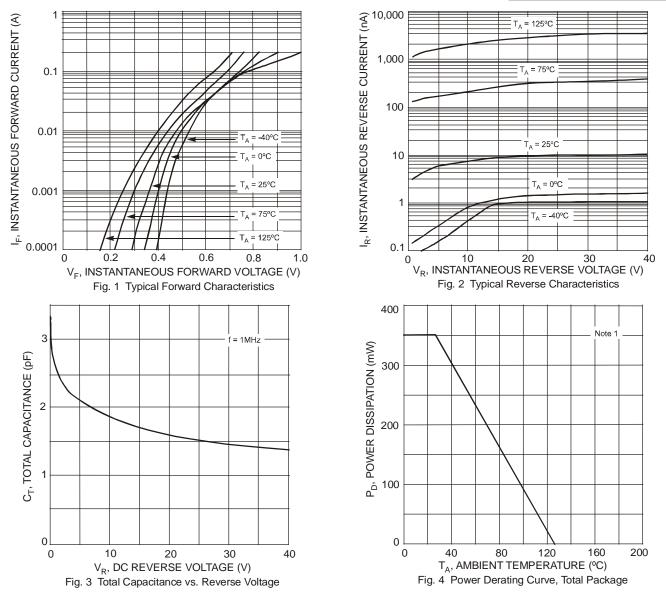
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	V <sub>(BR)R</sub>	40			V	I <sub>R</sub> = 10μA
Forward Voltage	VF			380 1000	mV	t <sub>p</sub> < 300μs, I <sub>F</sub> = 1.0mA t <sub>p</sub> < 300μs, I <sub>F</sub> = 40mA
Reverse Leakage Current (Note 2)	I <sub>R</sub>		20	200	nA	$t_p < 300 \mu s, V_R = 30 V$
Total Capacitance	CT		4.0	5.0	pF	$V_{R} = 0V, f = 1.0MHz$
Reverse Recovery Time	t <sub>rr</sub>			5.0	ns	$I_F = I_R = 10$ mA to $I_R = 1.0$ mA, $R_L = 100\Omega$

1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. Notes:

2. Short duration pulse test used to minimize self-heating effect.

3. No purposefully added lead. Halogen and Antimony Free. 4. Product manufactured with Date Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.





# Ordering Information (Notes 4 & 5)

Part Number	Case	Packaging
BAS40-7-F	SOT-23	3000/Tape & Reel
BAS40-04-7-F	SOT-23	3000/Tape & Reel
BAS40-05-7-F	SOT-23	3000/Tape & Reel
BAS40-06-7-F	SOT-23	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## Marking Information

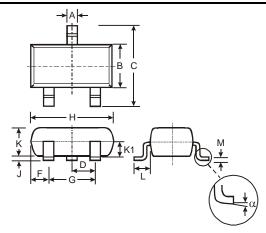
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Code	K	L	М	N	Р	R	S	Т	U	V	W	Х	Y	Z	Α	В	С
Month	Jan		Feb	Mar	Α	pr	Мау	Ju	n	Jul	Aug	S	ер	Oct	No	v	Dec
Code	1		2	3	4 5 6 7 8 9 O N						I	D					
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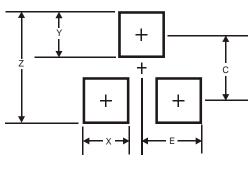


## **Package Outline Dimensions**



SOT-23							
Dim	Min	Max	Тур				
Α	0.37	0.51	0.40				
В	1.20	1.40	1.30				
С	2.30	2.50	2.40				
D	0.89	1.03	0.915				
F	0.45	0.60	0.535				
G	1.78	2.05	1.83				
Н	2.80	3.00	2.90				
J	0.013	0.10	0.05				
К	0.903	1.10	1.00				
K1	-	-	0.400				
L	0.45	0.61	0.55				
М	0.085	0.18	0.11				
α	0°	8°	-				
All	All Dimensions in mm						

# Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Y	0.9
С	2.0
E	1.35

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