



#### SURFACE MOUNT SCHOTTKY BARRIER DIODE

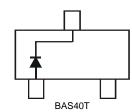
### **Features**

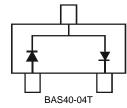
- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3, 4 and 5)

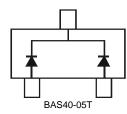
### **Mechanical Data**

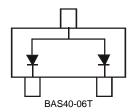
- Case: SOT-523
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagrams Below
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.002 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
RMS Reverse Voltage		V <sub>R(RMS)</sub>	28	V
Forward Continuous Current	(Note 1)	I <sub>FM</sub>	200	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0s	I <sub>FSM</sub>	600	mA

### **Thermal Characteristics**

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Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 1)	$P_{D}$	150	mW
Thermal Resistance Junction to Ambient	(Note 1)	$R_{ hetaJA}$	833	°C/W
Operating Temperature Range		$T_J$	-55 to +125	°C
Storage Temperature Range		T <sub>STG</sub>	-65 to +150	°C

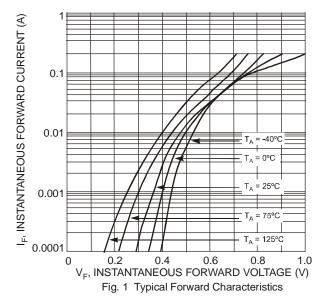
### Electrical Characteristics @TA = 25°C unless otherwise specified

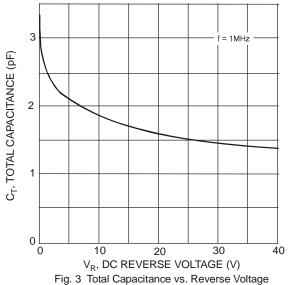
Characteristic	Symbol	Min	Max	Unit	Test Condition	
Reverse Breakdown Voltage	(Note 2)	$V_{(BR)R}$	40		V	$I_R = 10\mu A$
Forward Voltage		V <sub>F</sub>	_	380 1000	mV mV	$I_F = 1.0 \text{mA}, t_p < 300 \mu \text{s}$ $I_F = 40 \text{mA}, t_p < 300 \mu \text{s}$
Leakage Current	(Note 2)	I <sub>R</sub>	_	200	nA	V <sub>R</sub> = 30V
Total Capacitance		Ст	_	5.0	pF	$V_R = 0, f = 1.0MHz$
Reverse Recovery Time		t <sub>rr</sub>	_	5.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100 \Omega$

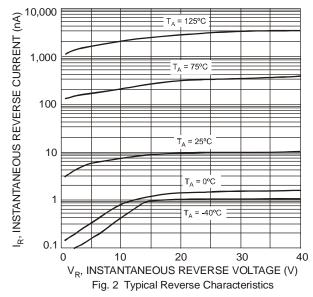
Notes:

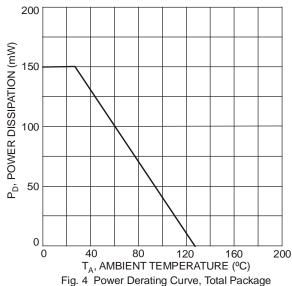
- 1. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 2. Short duration pulse test used to minimize self-heating effect.
- 3. No purposefully added lead. Halogen and Antimony Free.
- 4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.
- 5. Product manufactured with Green Molding Compound and does not contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.









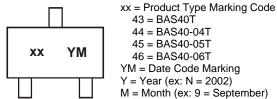


### Ordering Information (Note 6)

Part Number	Case	Packaging
BAS40T-7-F	SOT-523	3000/Tape & Reel
BAS40-04T-7-F	SOT-523	3000/Tape & Reel
BAS40-05T-7-F	SOT-523	3000/Tape & Reel
BAS40-06T-7-F	SOT-523	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**

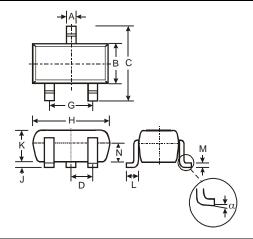


Date Code Key 2003 2001 2002 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 Year Code R S U W

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D

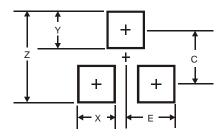


### **Package Outline Dimensions**



	SOT-523					
Dim	Min	Max	Тур			
Α	0.15	0.30	0.22			
В	0.75	0.85	0.80			
С	1.45	1.75	1.60			
D		_	0.50			
G	0.90	1.10	1.00			
Н	1.50	1.70	1.60			
J	0.00	0.10	0.05			
K	0.60	0.80	0.75			
L	0.10	0.30	0.22			
M	0.10	0.20	0.12			
N	0.45	0.65	0.50			
α	0°	8°	_			
All	All Dimensions in mm					

# **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	1.8
Х	0.4
Υ	0.51
С	1.3
E	0.7

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