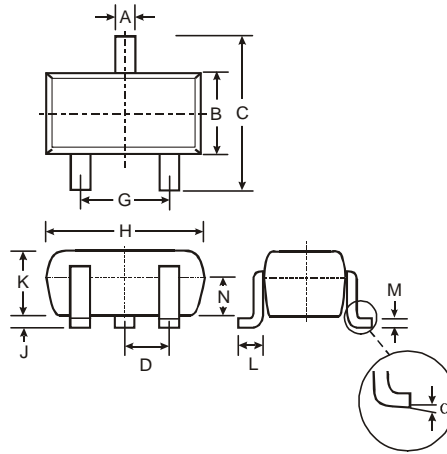


### Features

- 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)

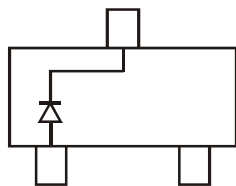
### Mechanical Data

- 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: See Diagrams Below & Page 3
- Ordering Information: See Page 3
- Weight: 0.002 grams (approximate)

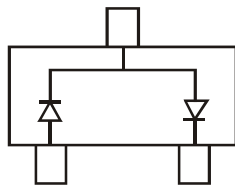


SOT-523			
Dim	Min	Max	Typ
A	0.15	0.30	0.22
B	0.75	0.85	0.80
C	1.45	1.75	1.60
D	—	—	0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
J	0.00	0.10	0.05
K	0.60	0.80	0.75
L	0.10	0.30	0.22
M	0.10	0.20	0.12
N	0.45	0.65	0.50
$\alpha$	0°	8°	—
All Dimensions in mm			

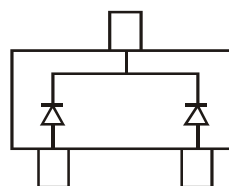
TOP VIEW



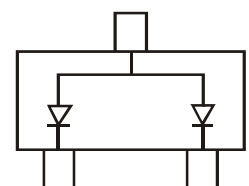
BAS40T Marking: 43



BAS40-04T Marking: 44



BAS40-05T Marking: 45



BAS40-06T Marking: 46

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	40	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
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
Power Dissipation (Note 1)	P <sub>D</sub>	150	mW
Thermal Resistance Junction to Ambient (Note 1)	R <sub>θJA</sub>	833	°C/W
Operating Temperature Range	T <sub>J</sub>	-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	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	V <sub>(BR)R</sub>	40	—	V	I <sub>R</sub> = 10μA
Forward Voltage	V <sub>F</sub>	—	380	mV	I <sub>F</sub> = 1.0mA, t <sub>p</sub> < 300μs
			1000	mV	I <sub>F</sub> = 40mA, t <sub>p</sub> < 300μs
Leakage Current (Note 2)	I <sub>R</sub>	—	200	nA	V <sub>R</sub> = 30V
Total Capacitance	C <sub>T</sub>	—	5.0	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	5.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

- 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](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.

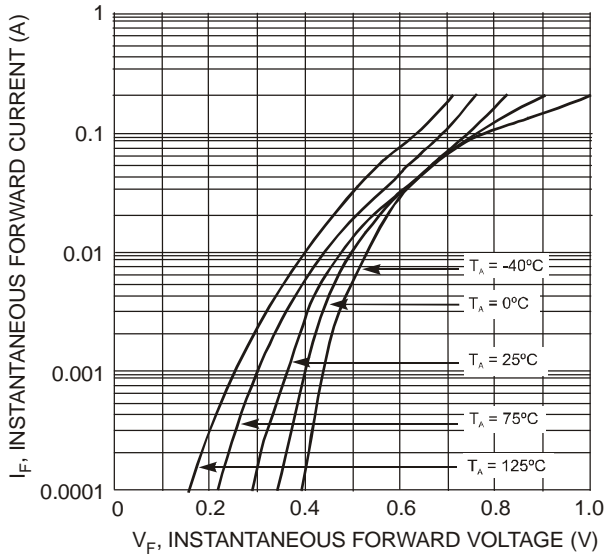


Fig. 1 Typical Forward Voltage

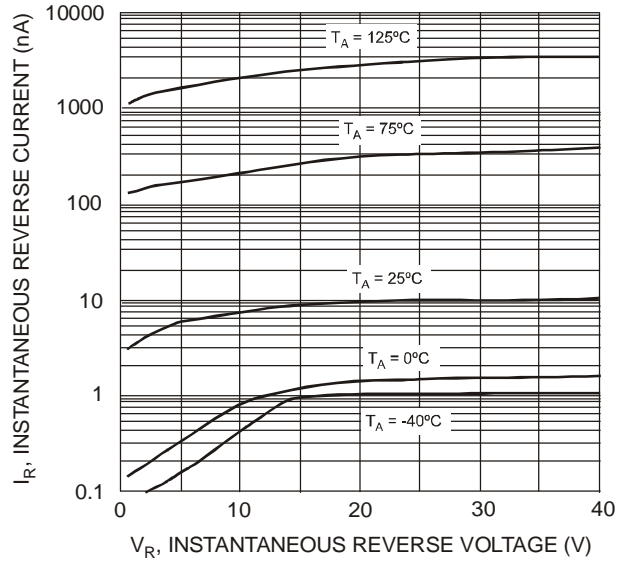


Fig. 2 Typical Reverse Characteristics

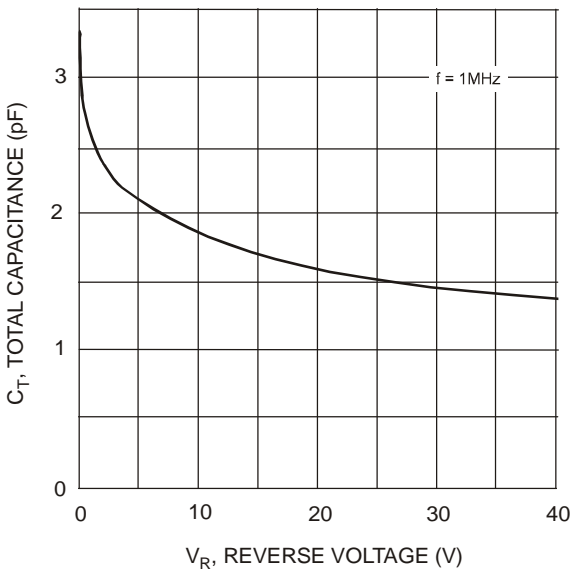


Fig. 3 Typical Capacitance

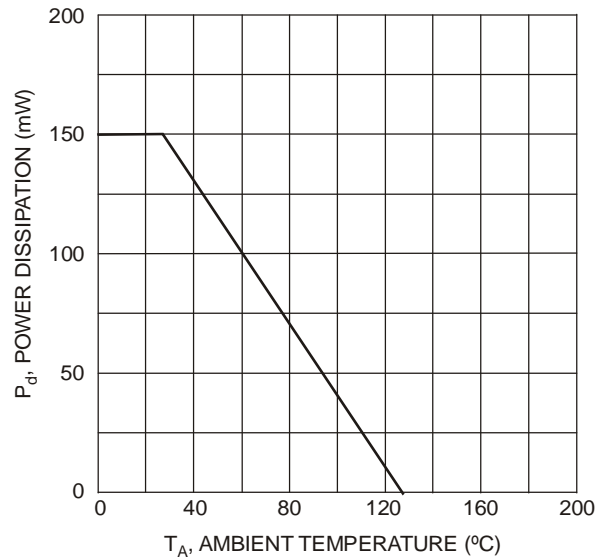


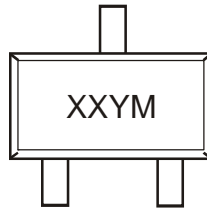
Fig. 4 Power Derating Curve, Total Package

## Ordering Information (Note 6)

Device	Packaging	Shipping
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



XX = Product Type Marking Code (See Page 1, e.g. 43 = BAS40T)  
 YM = Date Code Marking  
 Y = Year (ex: N = 2002)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	M	N	P	R	S	T	U	V	W	X	Y	Z

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

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