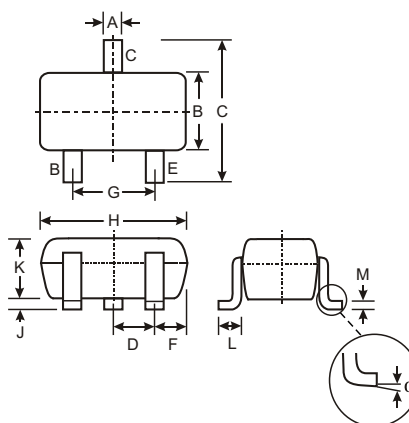


### Features

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

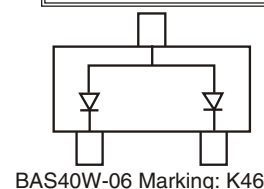
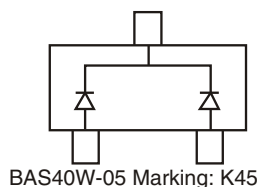
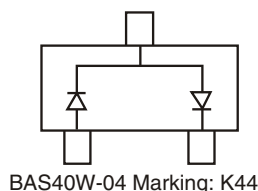
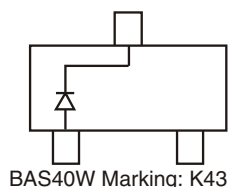
### Mechanical Data

- Case: SOT-323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- 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
- Weight: 0.006 grams (approximate)



TOP VIEW

SOT-323		
Dim	Min	Max
A	0.25	0.40
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.18
	0	8
All Dimensions in mm		



### 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
Power Dissipation (Note 1)	P <sub>d</sub>	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	R <sub>JA</sub>	625	°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)</sub> R	40		V	I <sub>R</sub> = 10 μA
Forward Voltage	V <sub>F</sub>		380 1000	mV mV	I <sub>F</sub> = 1.0mA, t <sub>p</sub> < 300 μs I <sub>F</sub> = 40mA, t <sub>p</sub> < 300 μs
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> = 100

- Notes:
- Device mounted on FR4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  - Short duration test pulse used to minimize self-heating effect.
  - No purposefully added lead.
  - 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).
  - Product manufactured with Date Code 0609 (week 9, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0609 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

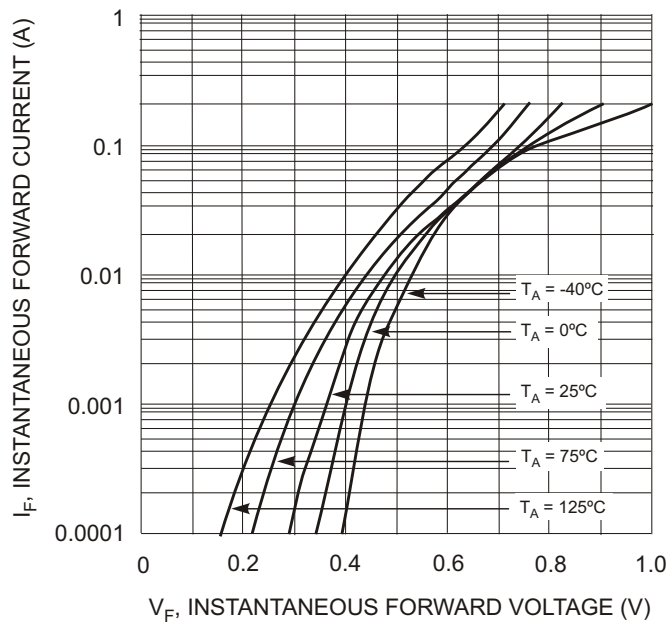


Fig. 1 Typical Forward Voltage

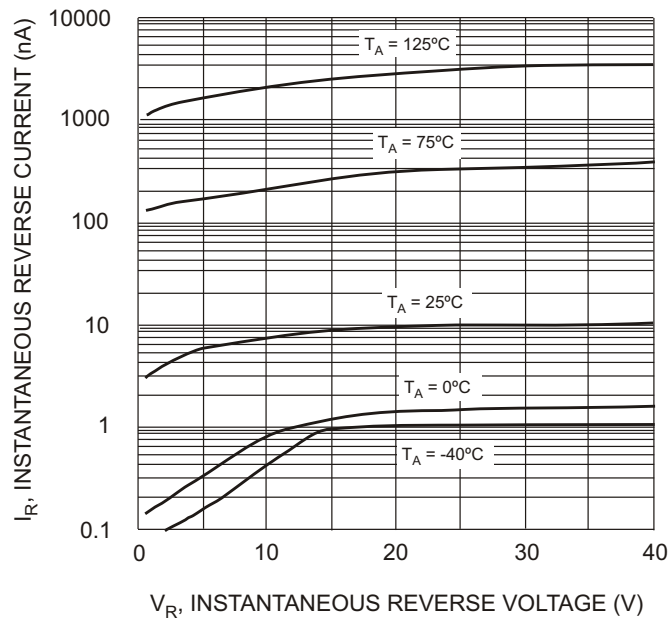


Fig. 2 Typical Reverse Characteristics

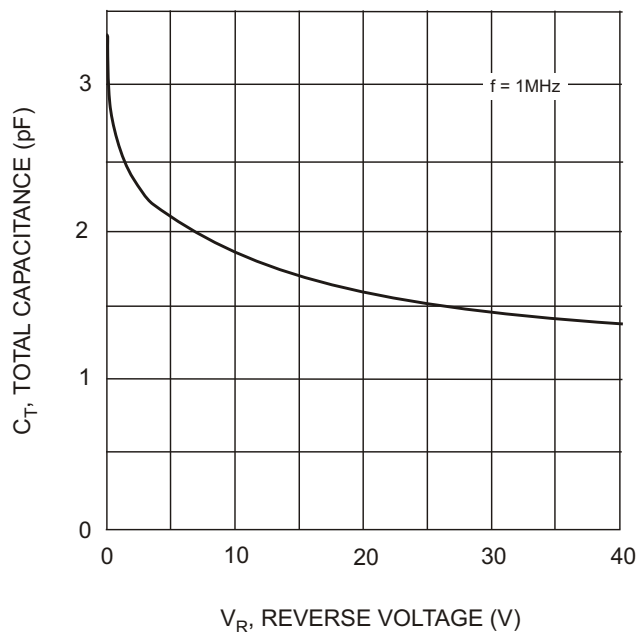


Fig. 3 Typical Capacitance

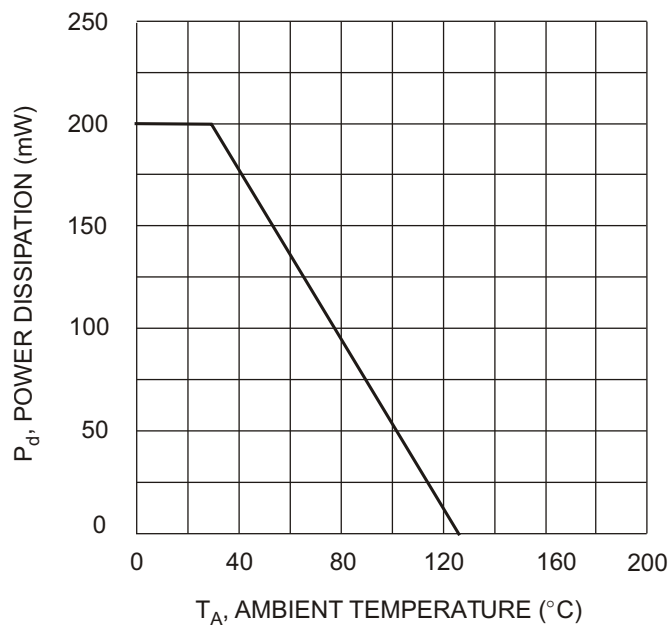


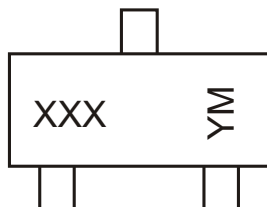
Fig. 4 Power Derating Curve, Total Package

**Ordering Information** (Note 5 and 6)

Device	Packaging	Shipping
BAS40W-7-F	SOT-323	3000/Tape & Reel
BAS40W-04-7-F	SOT-323	3000/Tape & Reel
BAS40W-05-7-F	SOT-323	3000/Tape & Reel
BAS40W-06-7-F	SOT-323	3000/Tape & Reel

Notes: 5. Product manufactured with Date Code 0609 (week 9, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0609 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

6. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**

XXX = Product Type Marking Code (See Sheet 1 Diagrams)

YM = Date Code Marking

Y = Year ex: N = 2002

M = Month ex: 9 = September

## Date Code Key

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	L	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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