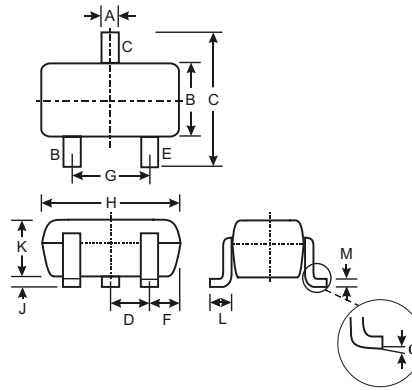


### Features

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection

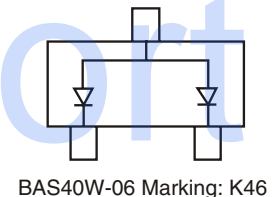
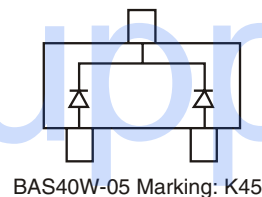
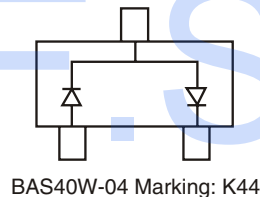
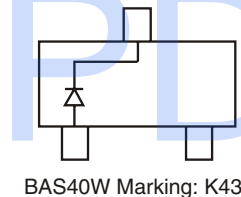
### Mechanical Data

- Case: SOT-323, Molded Plastic
- Case Material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams Below
- Marking: See Diagrams Below & Page 3
- Weight: 0.006 grams (approx.)



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
$\alpha$	0°	8°
All Dimensions in mm		

TOP VIEW



### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	40	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Forward Continuous Current (Note 1)	$I_{FM}$	200	mA
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\text{s}$	$I_{FSM}$	600	mA
Power Dissipation (Note 1)	$P_d$	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating Temperature Range	$T_j$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +150	$^\circ\text{C}$

### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	40	—	V	$I_R = 10\mu\text{A}$
Forward Voltage (Note 2)	$V_F$	—	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)	$I_R$	—	200	nA	$V_R = 30\text{V}$
Total Capacitance	$C_T$	—	5.0	pF	$V_R = 0$ , $f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	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 FR4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

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

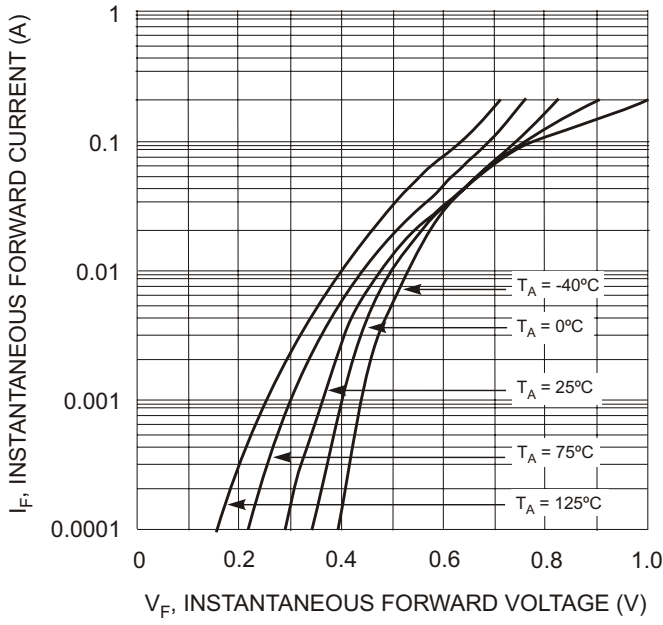


Fig. 1 Typical Forward Voltage

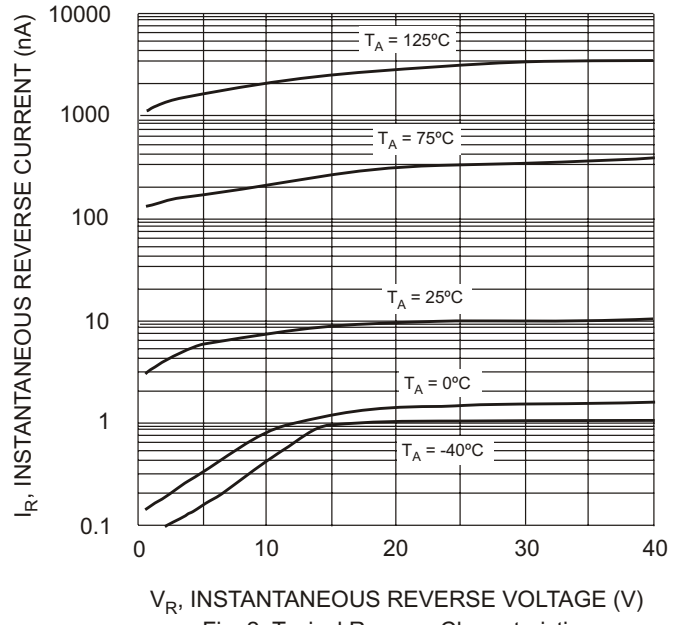


Fig. 2 Typical Reverse Characteristics

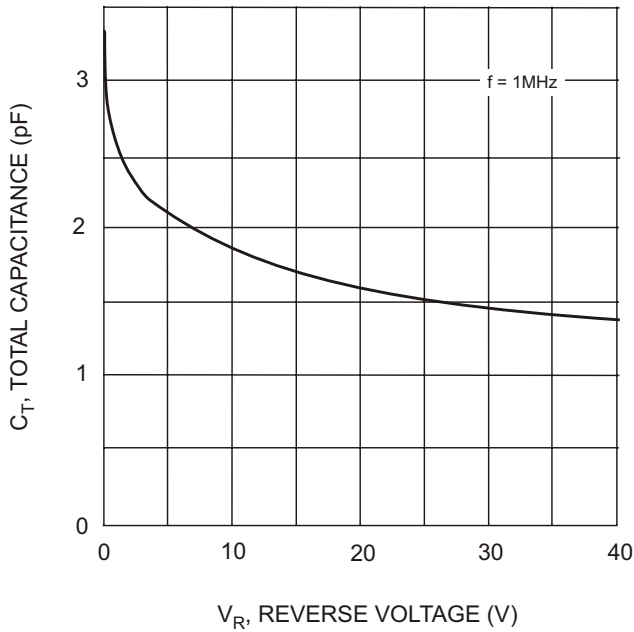


Fig. 3 Typical Capacitance

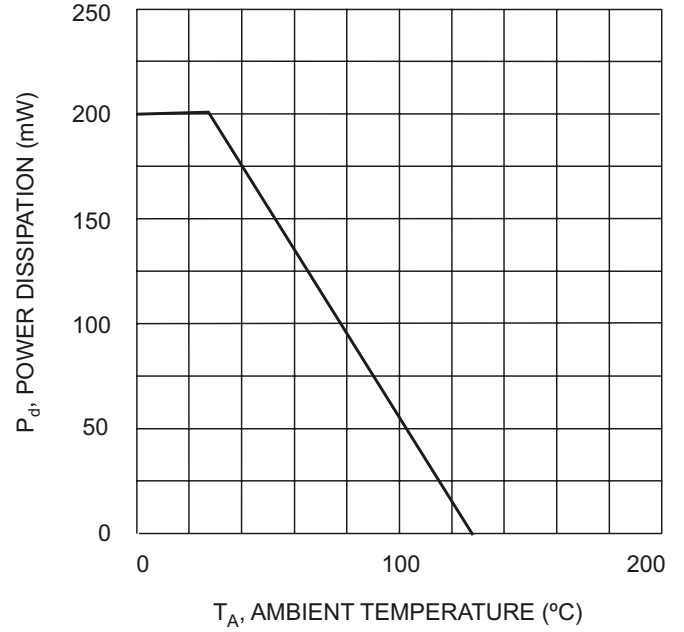


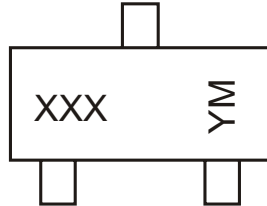
Fig. 4 Power Derating Curve, Total Package

**Ordering Information** (Note 3)

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

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



XXX = Product Type Marking Code (See Page 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
Code	L	M	N	P	R	S	T	U	V	W

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