



BAS316

Preliminary

DIODE

HIGH-SPEED DIODE

DESCRIPTION

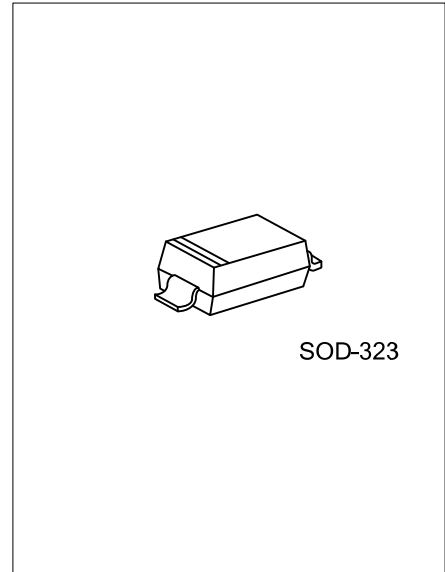
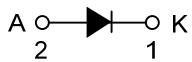
The UTC BAS316 is high-speed diode, it uses UTC's advanced technology to provide customers with high switching speed, etc.

The UTC BAS316 is suitable for high-speed switching in e.g. surface mounted circuits.

FEATURES

\* High switching speed

SYMBOL



SOD-323

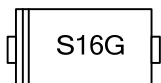
ORDERING INFORMATION

Ordering Number	Package	Pin Assignment		Packing
		1	2	
BAS316G-CB2-R	SOD-323	K	A	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

<p>BAS316G-CB2-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) CB2 : SOD-323 (3) G: Halogen Free and Lead Free</p>
--	---

MARKING



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
repetitive Peak Reverse Voltage		$V_{RRM}$	85	V
Continuous Reverse Voltage		$V_R$	75	V
Continuous Forward Current	$T_S=90^\circ\text{C}$ (Note 1)	$I_F$	250	mA
Repetitive Peak Forward Current		$I_{FRM}$	500	mA
Non-Repetitive Peak Forward Current	Square Wave, $T_J=25^\circ\text{C}$ Prior to Surge	$t=1\mu\text{s}$	4	A
		$t=1\text{ms}$	1	A
		$t=1\text{s}$	0.5	A
Total Power Dissipation	$T_S=90^\circ\text{C}$ (Note 1)	$P_D$	400	mW
Operating Junction Temperature		$T_J$	150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-65~+150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Soldering Point (Note 2)	$\theta_{JS}$	150	K/W

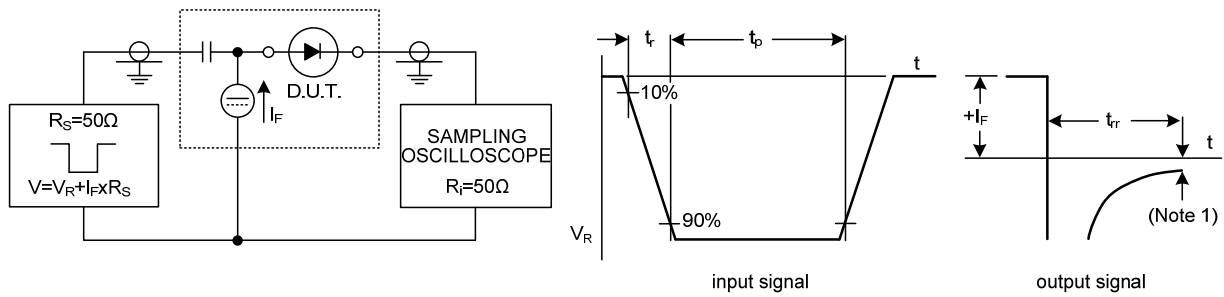
Notes: 1.  $T_S$  is the temperature at the soldering point of the cathode tab.

2. Soldering point of the cathode tab.

### ■ ELECTRICAL CHARACTERISTICS ( $T_J=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Forward Voltage	$V_F$	$I_F=1\text{mA}$			715	mV
		$I_F=10\text{mA}$			855	mV
		$I_F=50\text{mA}$			1	V
		$I_F=150\text{mA}$			1.25	V
Reverse Current	$I_R$	$V_R=25\text{V}$			30	nA
		$V_R=75\text{V}$			1	$\mu\text{A}$
		$V_R=25\text{V}, T_J=150^\circ\text{C}$			30	$\mu\text{A}$
		$V_R=75\text{V}, T_J=150^\circ\text{C}$			50	$\mu\text{A}$
Diode Capacitance	$C_D$	$f=1\text{MHz}, V_R=0$			1.5	pF
Reverse Recovery Time	$t_{rr}$	When Switched from $I_F=10\text{mA}$ to $I_R=10\text{mA}$ , $R_L=100\Omega$ , Measured at $I_R=1\text{mA}$ , See Fig.1			4	ns
Forward Recovery Voltage	$V_{fr}$	When Switched from $I_F=10\text{mA}$ , $t_r=20\text{ns}$ , See Fig.2			1.75	V

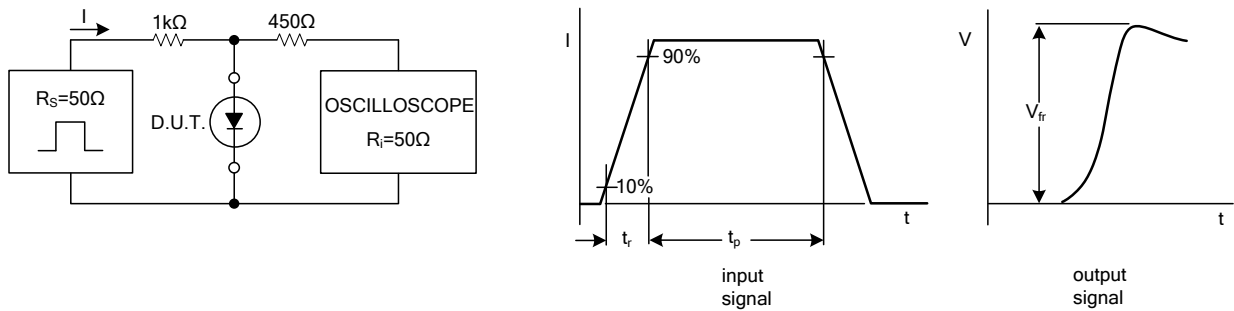
■ TEST CIRCUITS AND WAVEFORMS



Note 1.  $I_F=1\text{mA}$ .

Input signal: reverse pulse rise time  $t_r=0.6\text{ns}$ ; reverse voltage pulse duration  $t_p=100\text{ns}$ ; duty factor  $\delta=0.05$ ;  
Oscilloscope: rise time  $t_r=0.35\text{ns}$ .

Fig.1 Reverse Recovery Voltage Test Circuit and Waveforms.



Input signal: forward pulse rise time  $t_r=20\text{ns}$ ; forward current pulse duration  $t_p \geq 100\text{ns}$ ; duty factor  $\delta \leq 0.005$ .

Fig.2 Forward Recovery Voltage Test Circuit and Waveforms.

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.