



BAS316

Preliminary

DIODE

HIGH-SPEED DIODE

DESCRIPTION

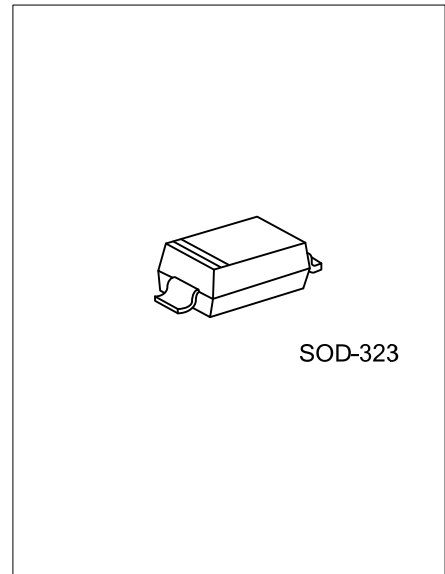
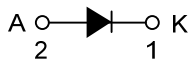
The UTC **BAS316** is high-speed diode, it uses UTC's advanced technology to provide customers with high switching speed, etc.

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

FEATURES

* High switching speed

SYMBOL



SOD-323

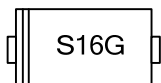
ORDERING INFORMATION

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>
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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)	θ_{JS}	150	K/W

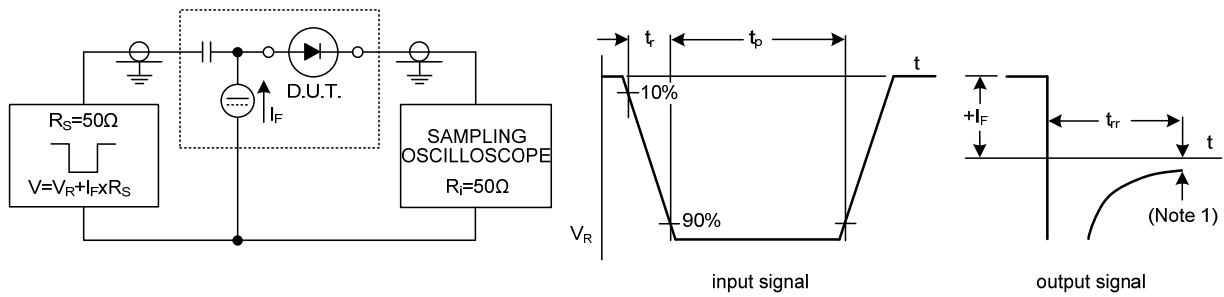
Notes: 1. T_S is the temperature at the soldering point of the cathode tab.

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	μA
		$V_R=25\text{V}, T_J=150^\circ\text{C}$			30	μA
		$V_R=75\text{V}, T_J=150^\circ\text{C}$			50	μA
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

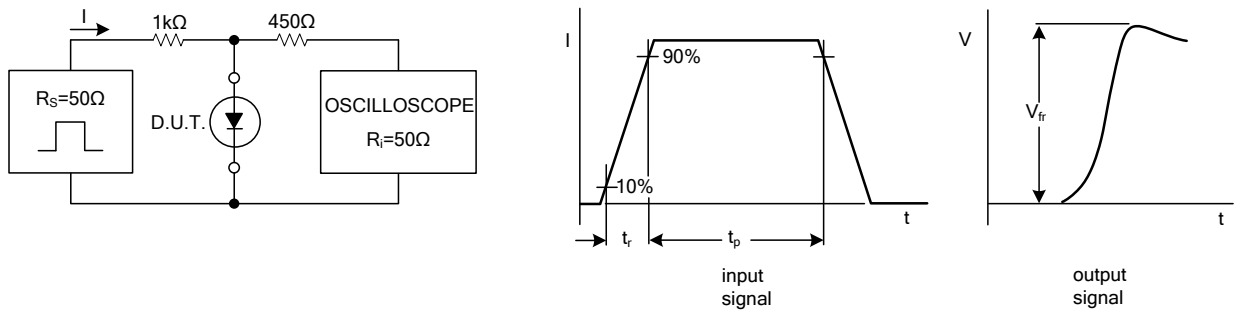
■ TEST CIRCUITS AND WAVEFORMS



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

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.

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