



BAS316

DIODE

HIGH-SPEED DIODE

DESCRIPTION

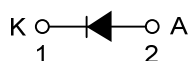
The UTC **BAS316** is high-speed diode, it uses UTC's advanced technology to provide customers with high switching speed, etc.

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

FEATURES

* High switching speed

SYMBOL



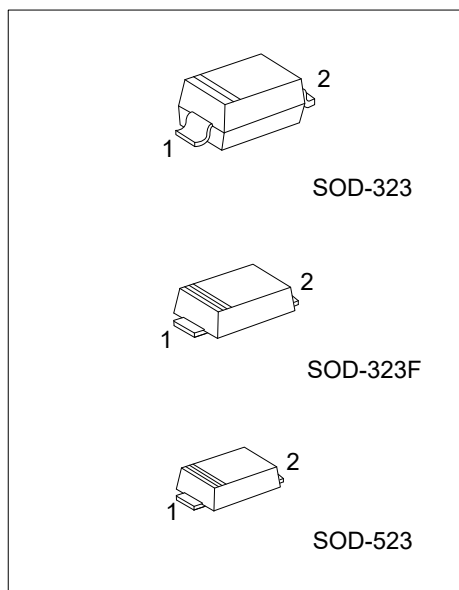
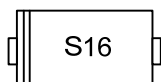
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
BAS316L-CB2-R	BAS316G-CB2-R	SOD-323	K	A	Tape Reel
BAS316L-CB2F-R	BAS316G-CB2F-R	SOD-323F	K	A	Tape Reel
BAS316L-CC2-R	BAS316G-CC2-R	SOD-523	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, CB2F: SOD-323F, CC2: SOD-523 (3) G: Halogen Free and Lead Free, L: 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	$t=1\mu\text{s}$	I_{FSM}	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
	$(T_A=25^{\circ}\text{C})$			200	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 DATA

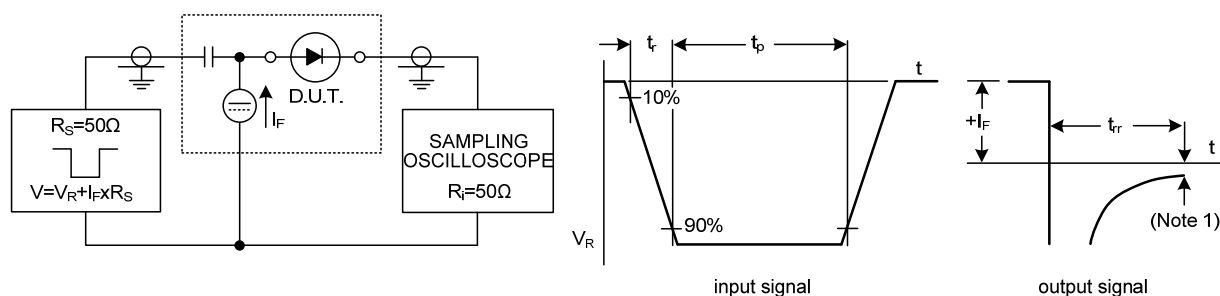
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	500	$^\circ\text{C/W}$
Junction to Soldering Point (Note 2)	θ_{JS}	150	$^\circ\text{C/W}$

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

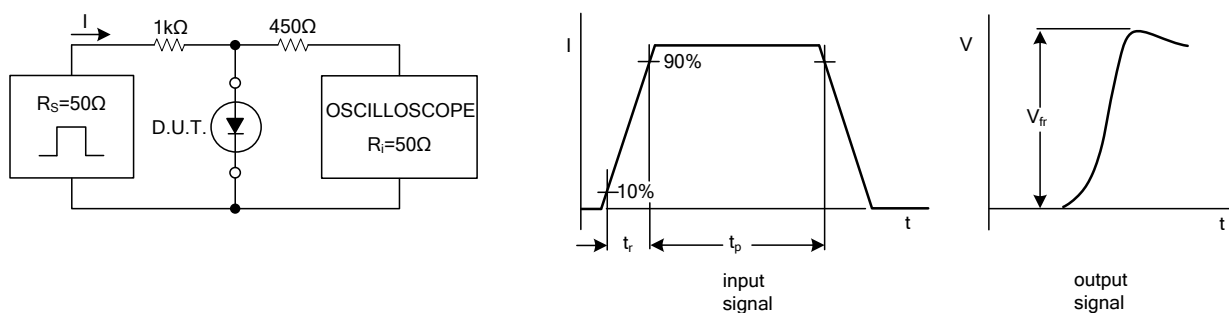
■ TEST CIRCUITS AND WAVEFORMS



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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