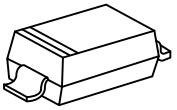
HIGH-SPEED DIODE



SOD-323

■ DESCRIPTION

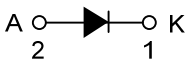
The UTC **BAS316** is high-speed diode, it uses UTC's advanced technology to provide customers with high switching speed, etc.

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
		1	2	
BAS316G-CB2-R	SOD-323	K	A	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

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

■ 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°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°C Prior to Surge	t=1μs	I_{FSM}	4	A
		t=1ms		1	A
		t=1s		0.5	A
Total Power Dissipation	T_S=90°C (Note 1)		P_D	400	mW
Operating Junction Temperature			T_J	150	°C
Storage Temperature			T_{STG}	-65~+150	°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

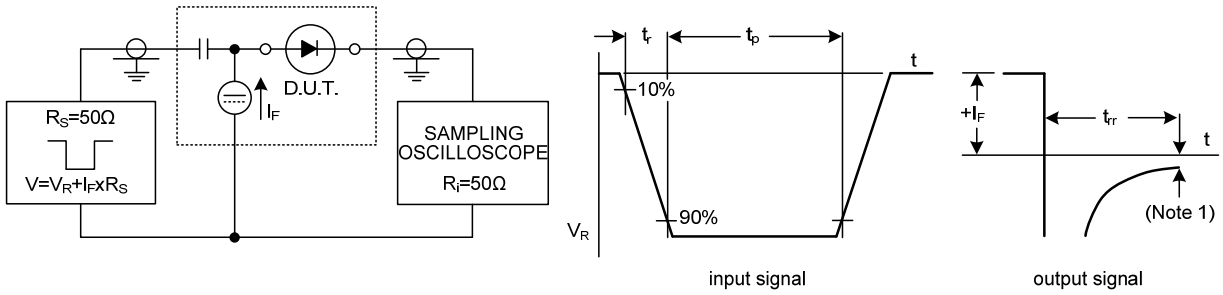
PARAMETER	SYMBOL	VALUE	UNIT
Junction to Soldering Point (Note 2)	θ_{JS}	150	K/W

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°C, unless otherwise specified)

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

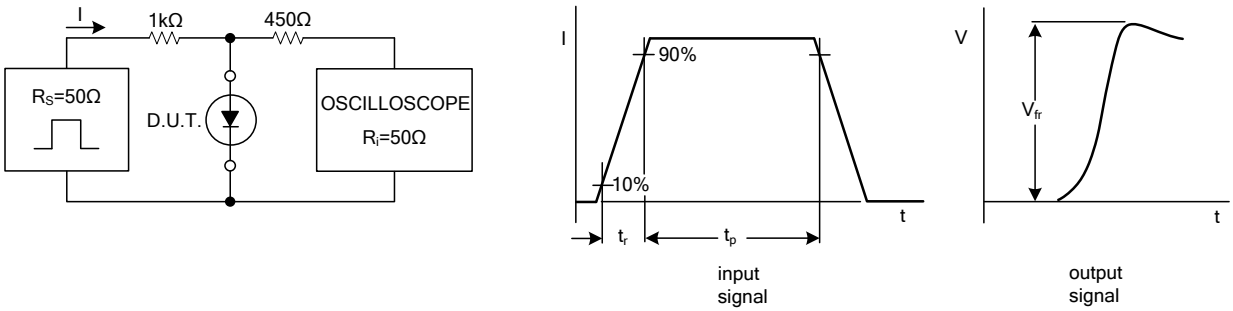
■ TEST CIRCUITS AND WAVEFORMS



Note 1. I_R=1mA.

Input signal: reverse pulse rise time t_r=0.6ns; reverse voltage pulse duration t_p=100ns; duty factor δ=0.05;
Oscilloscope: rise time t_r=0.35ns.

Fig.1 Reverse Recovery Voltage Test Circuit and Waveforms.



Input signal: forward pulse rise time t_r=20ns; forward current pulse duration t_p≥100ns; duty factor δ≤ 0.005.

Fig.2 Forward Recovery Voltage Test Circuit and Waveforms.