



BAS16

Preliminary

DIODE

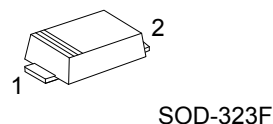
HIGH-SPEED SWITCHING DIODE

DESCRIPTION

High-speed switching diode, encapsulated in a very small and flat lead SOD-323F Surface-Mounted Device (SMD) plastic package.

FEATURES

- * High switching speed: $t_{rr} \leq 4\text{ns}$
- * Low capacitance
- * Low leakage current
- * Reverse voltage: $V_R \leq 100\text{V}$
- * Repetitive peak reverse voltage: $V_{RRM} \leq 100\text{V}$



SYMBOL



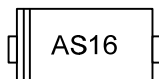
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
BAS16L-CB2F-R	BAS16G-CB2F-R	SOD-323F	K	A	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

<p>BAS16G-CB2F-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) CB2F: SOD-323F (3) G: Halogen Free and Lead Free, L: Lead Free</p>
---	--

MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER			SYMBOL	RATINGS	UNIT
Repetitive Peak Reverse Voltage			V_{RRM}	100	V
Continuous Reverse Voltage			V_R	100	V
Continuous Forward Current (Note 2)			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 ($T_A=25^{\circ}\text{C}$) (Note 3)			P_D	550	mW
Operating Junction Temperature			T_J	+150	$^{\circ}\text{C}$
Storage Temperature			T_{STG}	-65 ~ +150	$^{\circ}\text{C}$

Notes: 1. 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.

2. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

3. Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm².

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient		θ_{JA}	230	$^{\circ}\text{C/W}$
Junction to Soldering Point (Note 2)		θ_{JS}	55	$^{\circ}\text{C/W}$

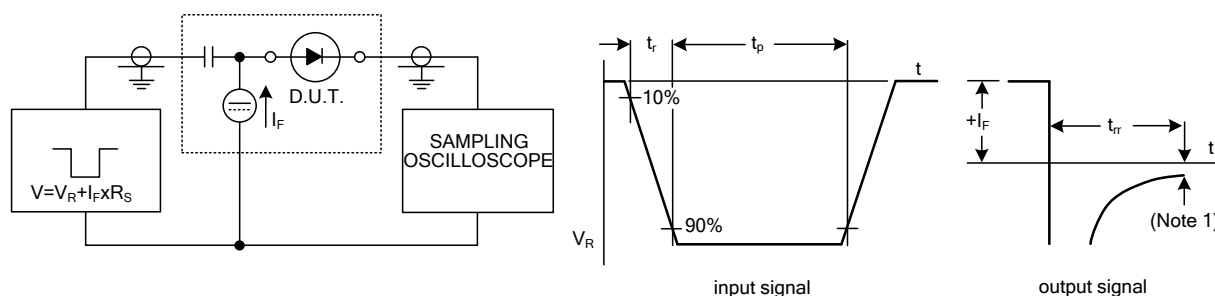
Notes: 1. Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm².

2. Soldering point of the cathode tab.

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

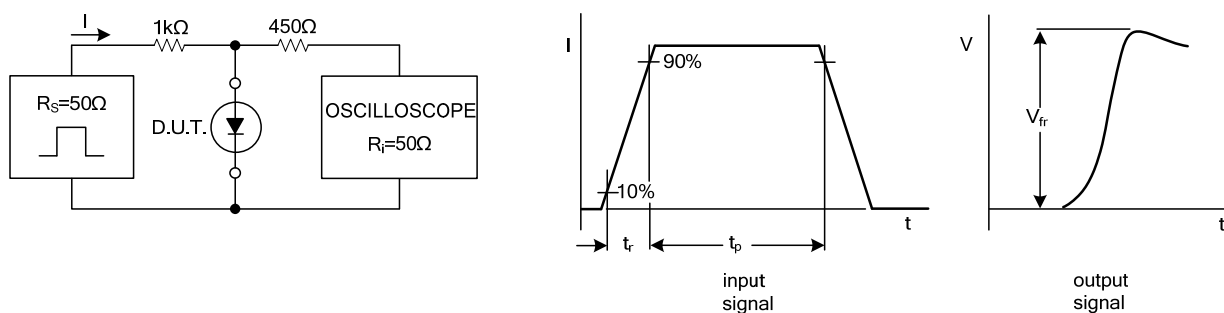
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Forward Voltage	V_F	$I_F=1\text{mA}$			715	mV
		$I_F=10\text{mA}$			855	mV
		$I_F=50\text{mA}$			1	V
		$I_F=150\text{mA}$			1.25	V
Reverse Current	I_R	$V_R=25\text{V}$			30	nA
		$V_R=80\text{V}$			0.5	μA
		$V_R=25\text{V}$, $T_J=150^{\circ}\text{C}$			30	μA
		$V_R=80\text{V}$, $T_J=150^{\circ}\text{C}$			50	μA
Diode Capacitance	C_d	$V_R=0$, $f=1\text{MHz}$		2.1		pF
Reverse Recovery Time	t_{rr}	$I_F=10\text{mA}$, $I_R=10\text{mA}$, $R_L=100\Omega$, $I_{R(\text{meas})}=1\text{mA}$			4	ns

■ TEST CIRCUITS AND WAVEFORMS



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. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.