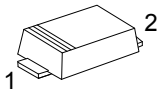
HIGH-SPEED SWITCHING DIODE



SOD-323F

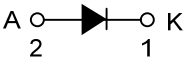
■ DESCRIPTION

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} ≤ 4ns
* Low capacitance
* Low leakage current
* Reverse voltage: V_R ≤ 100V
* Repetitive peak reverse voltage: V_{RRM} ≤ 100V

■ 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

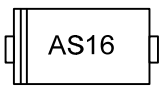
Note: Pin Assignment: A: Anode K: Cathode

BAS16G-CB2F-R

(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel
(2) CB2F: SOD-323F
(3) G: Halogen Free and Lead Free, L: Lead Free

■ 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°C Prior to Surge	t=1μs	I_{FSM}	4	A
		t=1ms		1	A
		t=1s		0.5	A
Total Power Dissipation (T_A=25°C) (Note 3)			P_D	550	mW
Operating Junction Temperature			T_J	+150	°C
Storage Temperature			T_{STG}	-65 ~ +150	°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

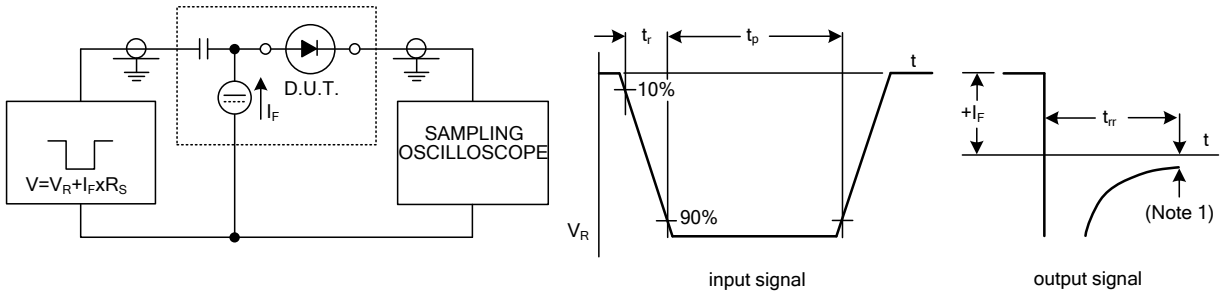
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	230	°C/W
Junction to Soldering Point (Note 2)	θ_{JS}	55	°C/W

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°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=80V			0.5	μA
		V_R=25V, T_J=150°C			30	μA
		V_R=80V, T_J=150°C			50	μA
Diode Capacitance	C_d	V_R=0, f=1MHz		2.1		pF
Reverse Recovery Time	t_{rr}	I_F=10mA, I_R=10mA, R_L=100Ω, $I_{R(meas)}$=1mA			4	ns

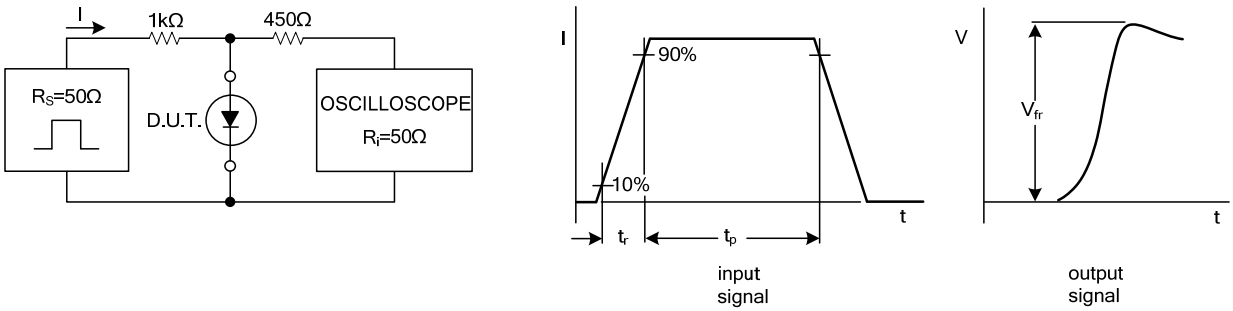
■ TEST CIRCUITS AND WAVEFORMS



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.