

## High Speed Switching Diodes

 **Lead(Pb)-Free**

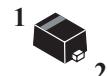
### Features:

- \* High switching speed: max. 4 ns
- \* Continuous reverse voltage: max. 75 V
- \* Repetitive peak forward current: max. 500 mA

### Applications:

- \* High-speed switching in e.g. surface mounted circuits.

**SWITCHING DIODE  
250 mAMPERES  
75 VOLTS**



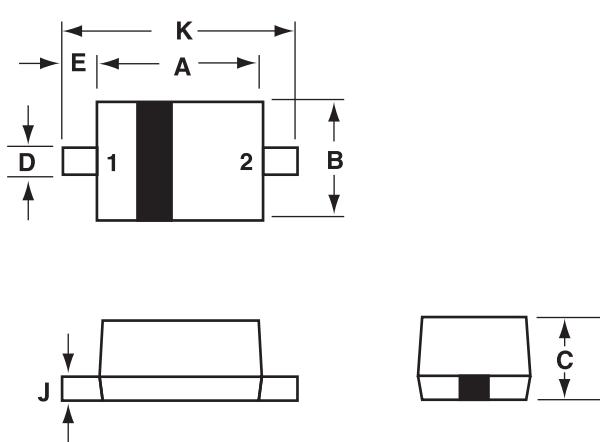
**SOD-523**

### Description:

- \* The BAS516 is a high-speed switching diode fabricated in planar technology, and encapsulated in the SOD-523 (SC79) SMD plastic package.

## SOD-523 Outline Dimensions

Unit:mm



<b>SOD-523</b>		
<b>Dim</b>	<b>Min</b>	<b>Max</b>
<b>A</b>	1.10	1.30
<b>B</b>	0.70	0.90
<b>C</b>	0.50	0.70
<b>D</b>	0.25	0.35
<b>E</b>	0.15	0.25
<b>J</b>	0.07	0.20
<b>K</b>	1.50	1.70

**PIN 1. CATHODE  
2. ANODE**

**Maximum Ratings** ( $T_A=25^\circ\text{C}$  Unless otherwise noted)

Characteristic	Symbol	Value	Unit
DC Reverse Voltage	$V_R$	75	V
Mean Rectifying Current	$I_O$	250	mA
Peak Forward Surge Current @ $t=1\text{s}$	$I_{FSM}$	500	mA
Operating Junction Temperature Range	$T_J$	+150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to +150	$^\circ\text{C}$

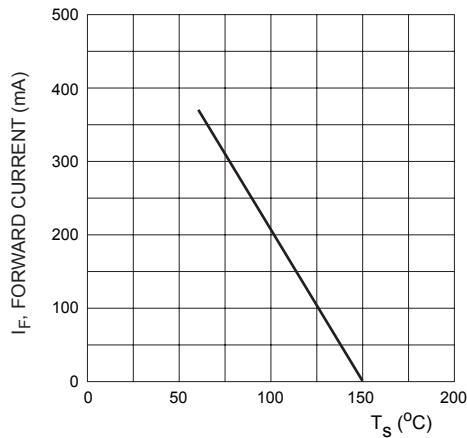
**Electrical Characteristics** ( $T_A=25^\circ\text{C}$  Unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Forward Voltage $I_F=1\text{mA}$	$V_F1$	-	-	0.715	V
$I_F=10\text{mA}$	$V_F2$	-	-	0.855	
$I_F=50\text{mA}$	$V_F3$	-	-	1.0	
$I_F=150\text{mA}$	$V_F4$	-	-	1.25	
Reverse Current $V_R=25\text{V}$	$I_R1$	-	-	0.03	$\mu\text{A}$
$V_R=75\text{V}$	$I_R2$	-	-	1.0	
Capacitance Between Terminals $V_R=0, f=1\text{MHz}$	$C_T$	-	-	1.0	pF
Reverse Recovery Time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, R_L = 100\Omega$ Measured at $I_R = 1\text{mA}$ ; see Fig.6	$T_{rr}$	-	-	4.0	ns

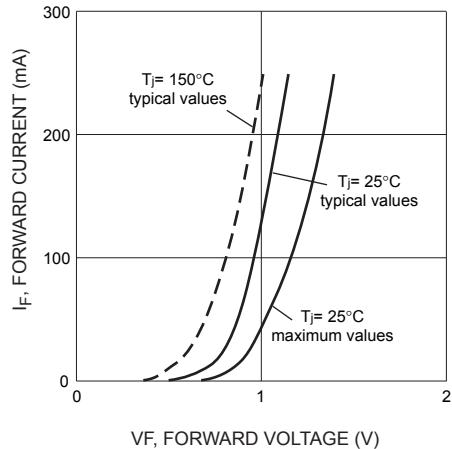
**Device Marking**

Item	Marking	Equivalent Circuitdiagram
BAS516	6 , 61	1 ○ --- ↗ 2

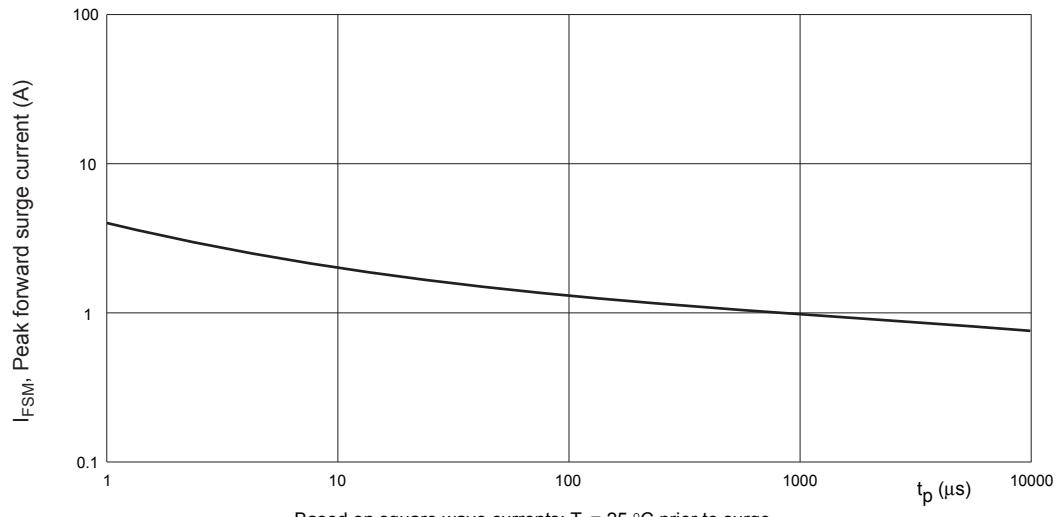
## Typical Characteristics



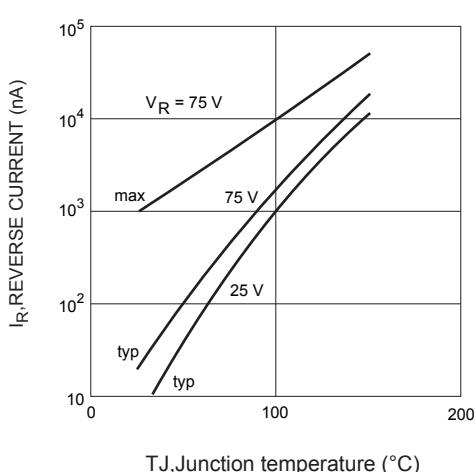
**Fig.1 Maximum permissible continuous forward current as a function of soldering point temperature.**



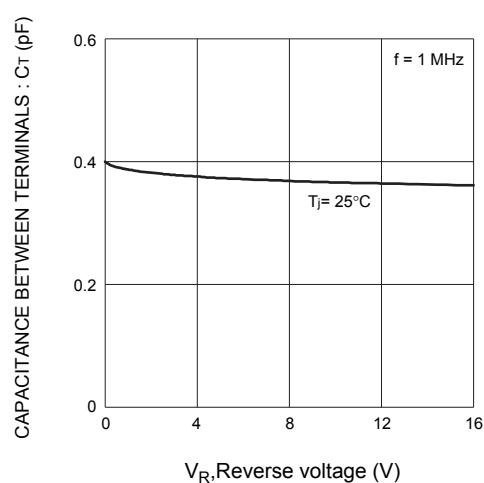
**Fig.2 Forward current as Forward voltage**



**Fig.3 Maximum permissible non-repetitive peak forward current as a function of pulse duration.**

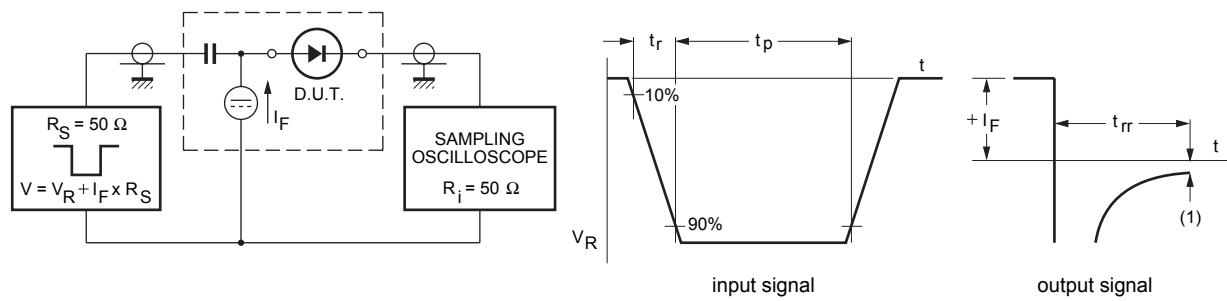


**Fig.4 Reverse current as Junction temperature**



**Fig. 5 Capacitance between terminals characteristics**

## Typical Characteristics



(1)  $I_R = 1$  mA.

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

Fig. 6 Reverse recovery voltage test circuit and waveforms