

## High-speed diode

## BAS316

### FEATURES

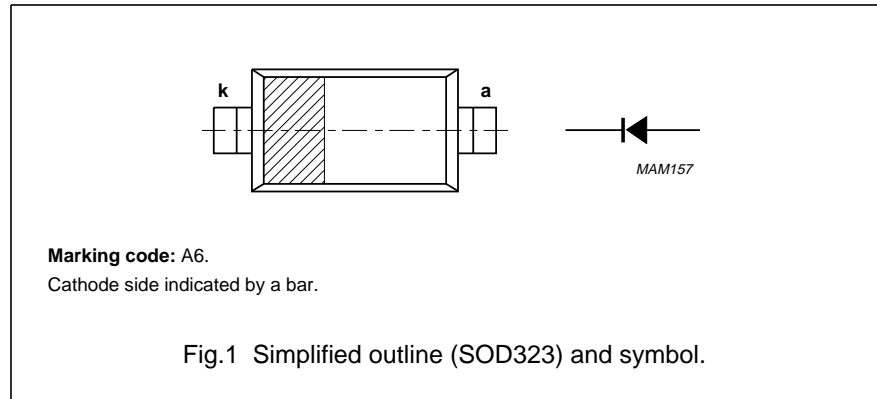
- Very small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

### APPLICATIONS

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

### DESCRIPTION

The BAS316 is a high-speed switching diode fabricated in planar technology, and encapsulated in the SOD323 SMD plastic package.



### LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{RRM}$	repetitive peak reverse voltage		–	85	V
$V_R$	continuous reverse voltage		–	75	V
$I_F$	continuous forward current	$T_s = 90\text{ °C}$ ; note 1; see Fig.2	–	250	mA
$I_{FRM}$	repetitive peak forward current		–	500	mA
$I_{FSM}$	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4			
		$t = 1\ \mu\text{s}$	–	4	A
		$t = 1\ \text{ms}$	–	1	A
		$t = 1\ \text{s}$	–	0.5	A
$P_{tot}$	total power dissipation	$T_s = 90\text{ °C}$ ; note 1	–	400	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C

### Note

1.  $T_s$  is the temperature at the soldering point of the cathode tab.

**ELECTRICAL CHARACTERISTICS**
 $T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	see Fig.3		
		$I_F = 1\text{ mA}$	715	mV
		$I_F = 10\text{ mA}$	855	mV
		$I_F = 50\text{ mA}$	1	V
		$I_F = 150\text{ mA}$	1.25	V
$I_R$	reverse current	see Fig.5		
		$V_R = 25\text{ V}$	30	nA
		$V_R = 75\text{ V}$	1	$\mu\text{A}$
		$V_R = 25\text{ V}; T_j = 150\text{ }^\circ\text{C}$	30	$\mu\text{A}$
		$V_R = 75\text{ V}; T_j = 150\text{ }^\circ\text{C};$	50	$\mu\text{A}$
$C_d$	diode capacitance	$f = 1\text{ MHz}; V_R = 0;$ see Fig.6	1.5	pF
$t_{rr}$	reverse recovery time	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.7	4	ns
$V_{fr}$	forward recovery voltage	when switched from $I_F = 10\text{ mA}; t_r = 20\text{ ns};$ see Fig.8	1.75	V

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	note 1	150	K/W

**Note**

- Soldering point of the cathode tab.

GRAPHICAL DATA

