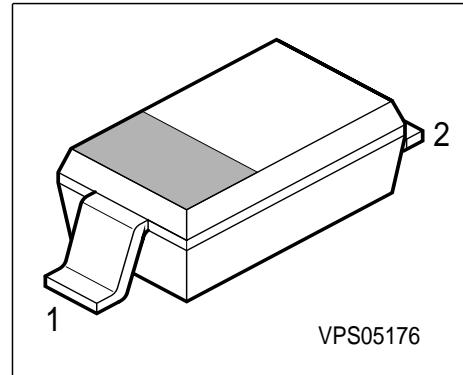


### Silicon Switching Diode

#### Preliminary data

- For high-speed switching applications



Type	Marking	Ordering Code	Pin Configuration		Package
BAS 16-03W	B	Q62702-A1231	1 = A	2 = C	SOD-323

#### Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	75	V
Peak reverse voltage	$V_{RM}$	85	
Forward current	$I_F$	250	mA
Surge forward current, $t = 1 \mu s$	$I_{FS}$	4.5	A
Total power dissipation, $T_S = 111^\circ C$	$P_{tot}$	250	mW
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	- 65 ...+150	

#### Thermal Resistance

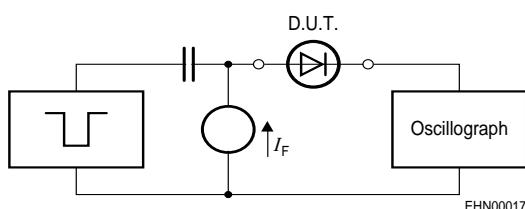
Junction - ambient 1)	$R_{thJA}$	$\leq 235$	K/W
Junction - soldering point	$R_{thJS}$	$\leq 155$	

1) Package mounted on alumina 15mm x 16.7mm x 0.7mm

**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC characteristics</b>					
Breakdown voltage $I_{(\text{BR})} = 100 \mu\text{A}$	$V_{(\text{BR})}$	75	-	-	V
Forward voltage $I_F = 1 \text{ mA}$	$V_F$	-	-	715	mV
$I_F = 10 \text{ mA}$		-	-	855	
$I_F = 50 \text{ mA}$		-	-	1000	
$I_F = 150 \text{ mA}$		-	-	1250	
Reverse current $V_R = 70 \text{ V}$	$I_R$	-	-	1	$\mu\text{A}$
Reverse current $V_R = 25 \text{ V}, T_A = 150^\circ\text{C}$	$I_R$	-	-	30	
$V_R = 75 \text{ V}, T_A = 150^\circ\text{C}$		-	-	50	
Forward recovery voltage $I_F = 10 \text{ mA}, t_p = 20 \text{ ns}$	$V_{\text{fr}}$	-	-	1.75	V
<b>AC characteristics</b>					
Diode capacitance $V_R = 0 \text{ V}, f = 20 \text{ MHz}$	$C_D$	-	-	2	pF
Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, R_L = 100 \Omega$ , measured at $I_R = 1 \text{ mA}$	$t_{\text{rr}}$	-	-	6	ns

### Test circuit for reverse recovery time

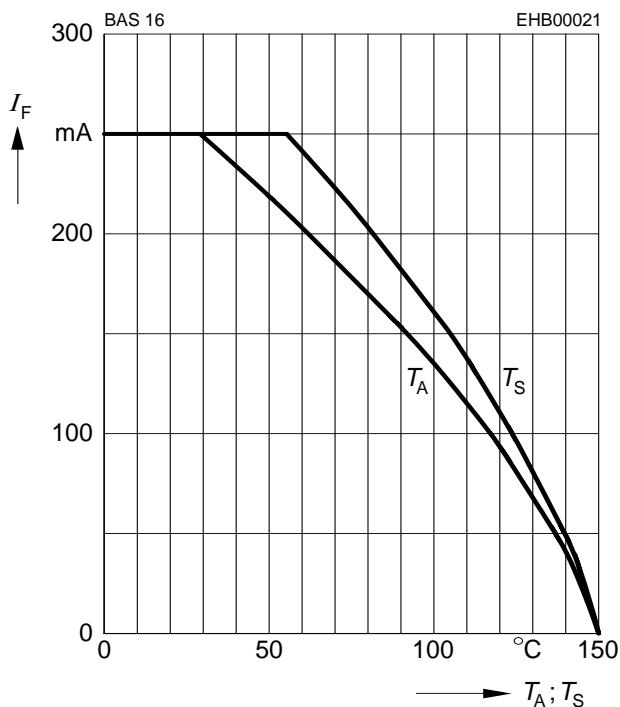


Pulse generator:  $t_p = 100\text{ns}$ ,  $D = 0.05$ ,  
 $t_r = 0.6\text{ns}$ ,  $R_i = 50\Omega$

Oscilloscope:  $R = 50\Omega$ ,  $t_r = 0.35\text{ns}$ ,  
 $C \leq 1\text{pF}$

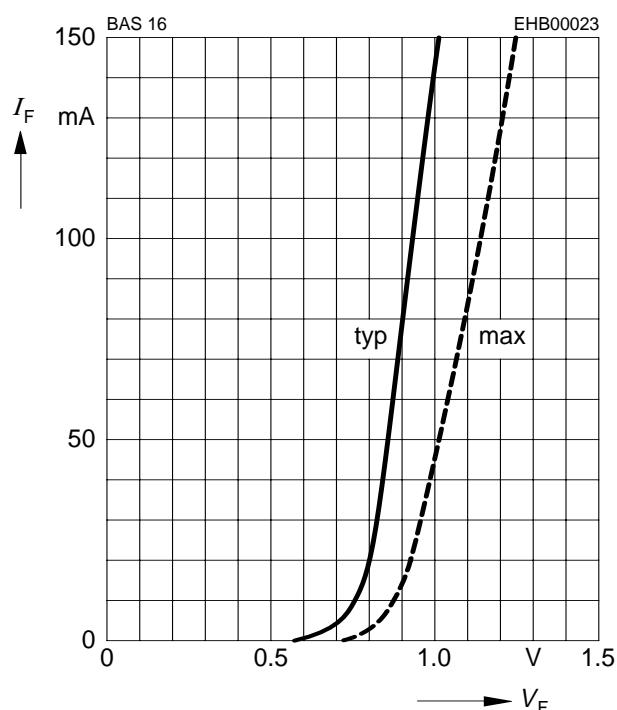
**Forward current**  $I_F = f(T_A^*; T_S)$

\* Package mounted on epoxy

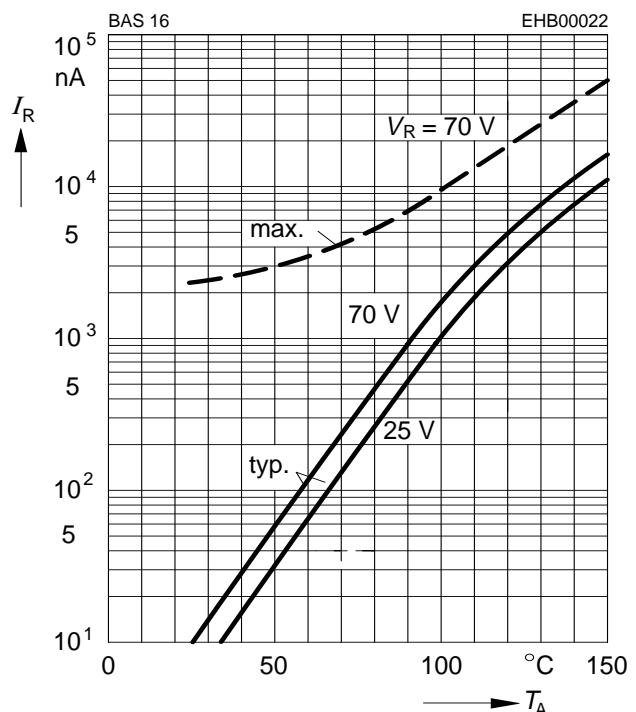


**Forward current**  $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$

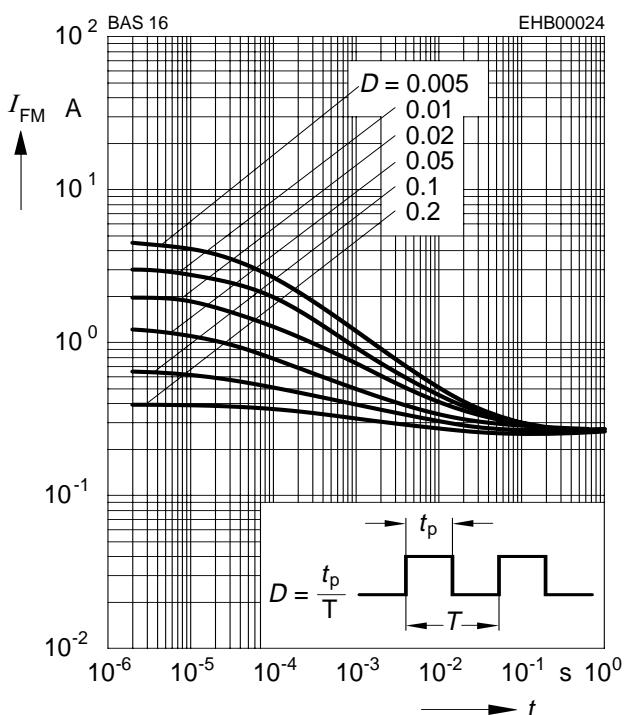


**Reverse current**  $I_R = f(T_A)$



**Peak forward current**  $I_{FM} = f(t)$

$T_A = 25^\circ\text{C}$



**Forward voltage  $V_F = f(T_A)$**

