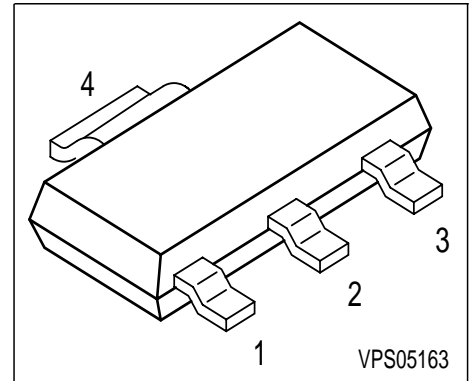


**Silicon Switching Diodes**

- Switching applications
- High breakdown voltage



Type	Marking	Pin Configuration				Package
BAS78A	BAS 78A	1 = A	2 = C	3 = n.c.	4 = C	SOT223
BAS78B	BAS 78B	1 = A	2 = C	3 = n.c.	4 = C	SOT223
BAS78C	BAS 78C	1 = A	2 = C	3 = n.c.	4 = C	SOT223
BAS78D	BAS 78D	1 = A	2 = C	3 = n.c.	4 = C	SOT223

**Maximum Ratings**

Parameter	Symbol	BAS	BAS	BAS	BAS	Unit
		78A	78B	78C	78D	
Diode reverse voltage	$V_R$	50	100	200	400	V
Peak reverse voltage	$V_{RM}$	50	100	200	400	
Forward current	$I_F$	1				A
Peak forward current	$I_{FM}$	1				
Surge forward current, $t = 1 \mu s$	$I_{FS}$	10				
Total power dissipation, $T_S = 124 \text{ }^\circ\text{C}$	$P_{tot}$	1.2				W
Junction temperature	$T_j$	150				$^\circ\text{C}$
Storage temperature	$T_{stg}$	-65 ... 150				

**Thermal Resistance**

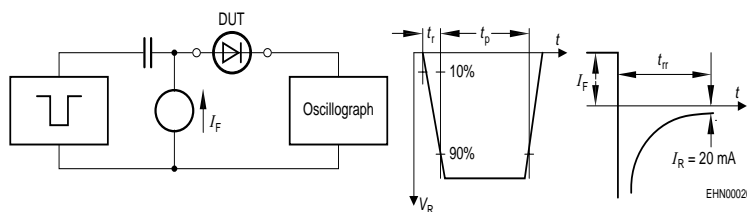
Junction - soldering point <sup>1)</sup>	$R_{thJS}$	$\leq 22$	K/W
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<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

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 $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$				V
<b>BAS78A</b>		50	-	-	
<b>BAS78B</b>		100	-	-	
<b>BAS78C</b>		200	-	-	
<b>BAS78D</b>		400	-	-	
Forward voltage $I_F = 1 \text{ A}$ $I_F = 2 \text{ A}$	$V_F$				
		-	-	1.6	
		-	-	2	
Reverse current $V_R = V_{Rmax}$	$I_R$	-	-	1	$\mu\text{A}$
Reverse current $V_R = V_{Rmax}, T_A = 150^\circ\text{C}$	$I_R$	-	-	50	
<b>AC characteristics</b>					
Diode capacitance $V_R = 0 \text{ V}, f = 1 \text{ MHz}$	$C_D$	-	10	-	pF
Reverse recovery time $I_F = 200 \text{ mA}, I_R = 200 \text{ mA}, R_L = 100 \Omega$ , measured at $I_R = 200\text{mA}$	$t_{rr}$	-	1	-	$\mu\text{s}$

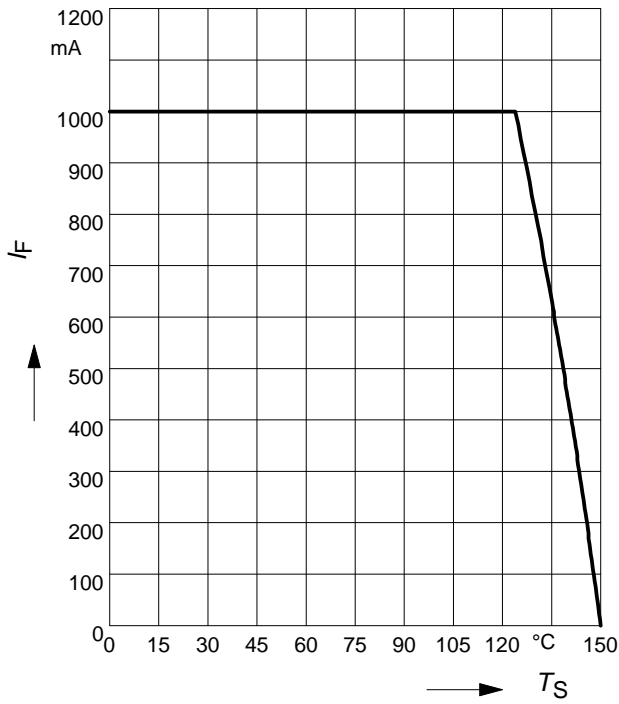
**Test circuit for reverse recovery time**



Pulse generator:  $t_p = 10\mu\text{s}$ ,  $D = 0.05$ ,  
 $t_f = 0.6\text{ns}$ ,  $R_i = 50\Omega$

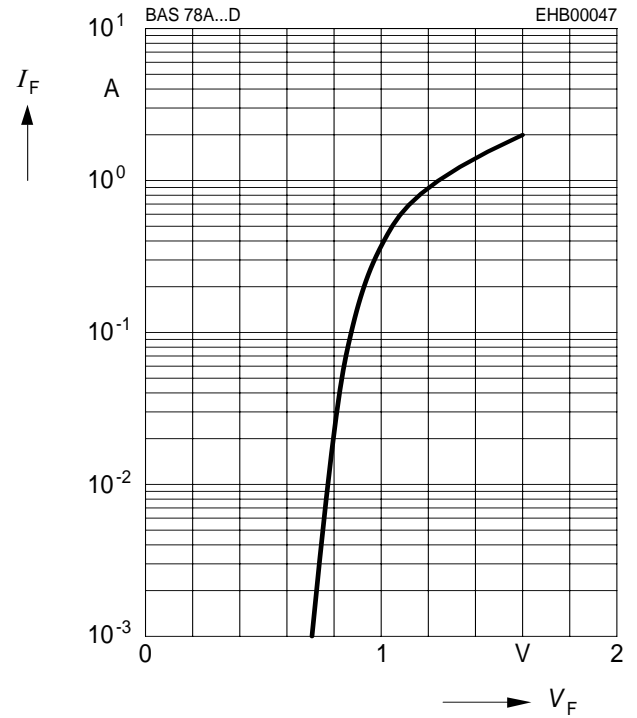
Oscilloscope:  $R = 50\Omega$ ,  $t_f = 0.35\text{ns}$ ,  
 $C \leq 1\text{pF}$

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



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

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



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

$V_R = V_{Rmax}$

