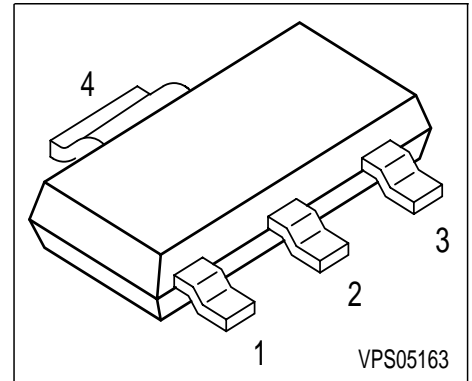


Silicon Switching Diodes

- 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

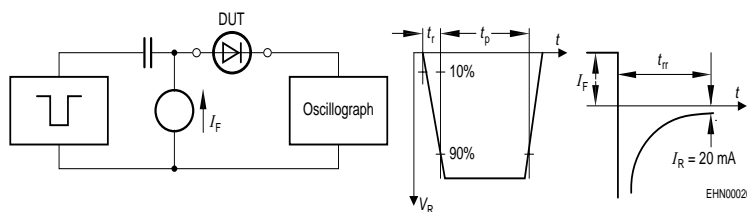
Junction - soldering point ¹⁾	R_{thJS}	≤ 22	K/W
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¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Breakdown voltage $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$				V
BAS78A		50	-	-	
BAS78B		100	-	-	
BAS78C		200	-	-	
BAS78D		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	μA
Reverse current $V_R = V_{Rmax}, T_A = 150^\circ\text{C}$	I_R	-	-	50	
AC characteristics					
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	-	μs

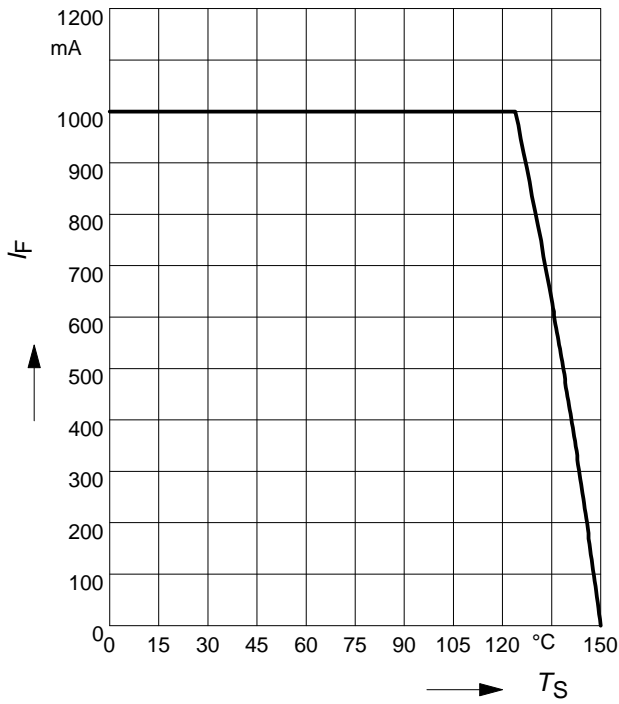
Test circuit for reverse recovery time



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

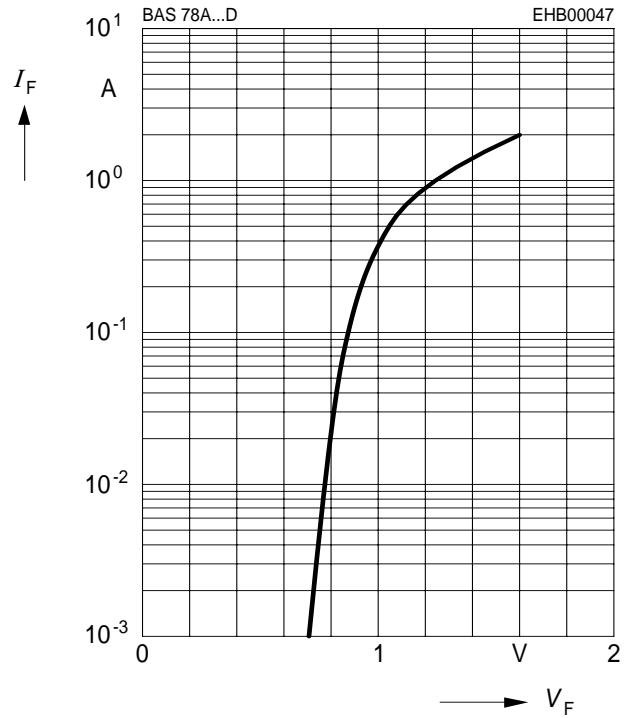
Oscilloscope: $R = 50\Omega$, $t_f = 0.35\text{ns}$,
 $C \leq 1\text{pF}$

Forward current $I_F = f(T_S)$



Forward current $I_F = f(V_F)$

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



Reverse current $I_R = f(T_A)$

$V_R = V_{Rmax}$

