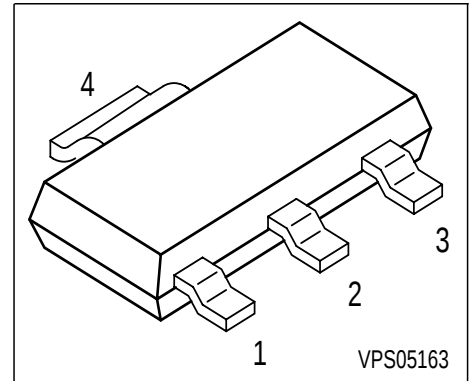


Silicon Switching Diodes

- 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 78A	BAS 78B	BAS 78C	BAS 78D	Unit
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 μs	I_{FS}	10				
Total power dissipation, $T_S = 124\text{ °C}$	P_{tot}	1.2				W
Junction temperature	T_j	150				°C
Storage temperature	T_{stg}	-65 ... 150				

Thermal Resistance

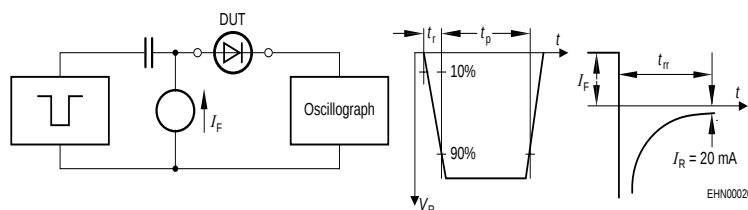
Junction - soldering point ¹⁾	R_{thJS}	≤ 22	K/W
--	------------	-----------	-----

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 $I_{(BR)} = 100\ \mu\text{A}$ BAS78A BAS78B BAS78C BAS78D	$V_{(BR)}$	 50 100 200 400	 - - - -	 - - - -	V	
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	

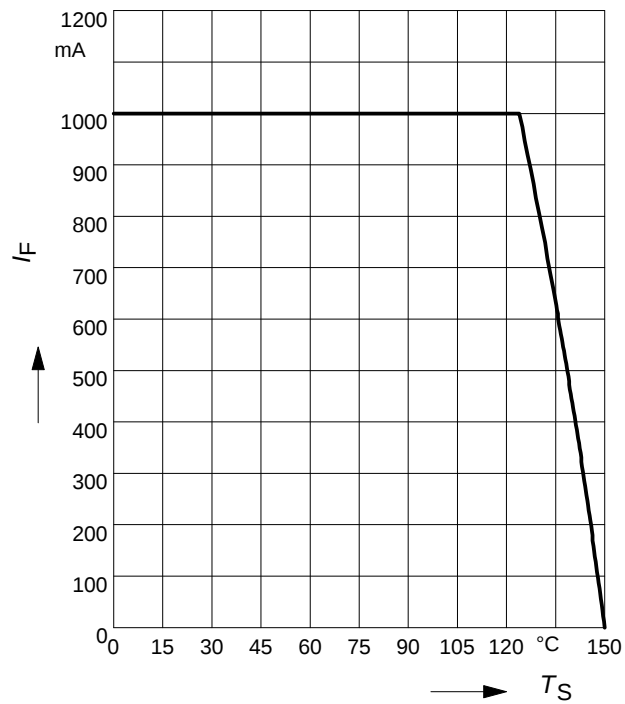
Test circuit for reverse recovery time



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

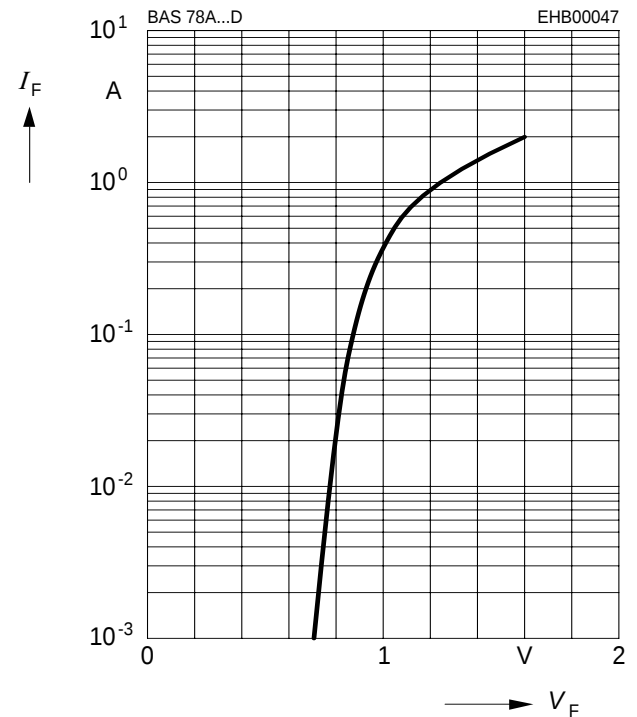
Oscilloscope: $R = 50\ \Omega$, $t_r = 0.35\ \text{ns}$,
 $C \leq 1\ \text{pF}$

Forward current $I_F = f(T_S)$



Forward current $I_F = f(V_F)$

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



Reverse current $I_R = f(T_A)$

$V_R = V_{R\text{max}}$

