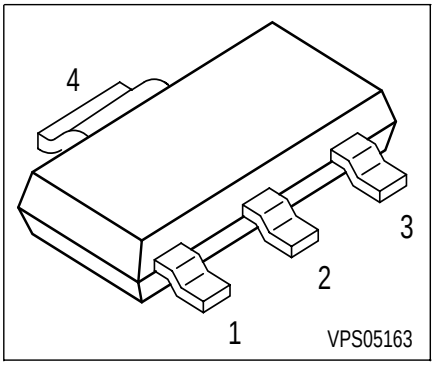
Silicon Switching Diodes

- 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 °C	P_{tot}	1.2				W
Junction temperature	T_j	150				℃
Storage temperature	T_{stg}	-65 ... 150				

Thermal Resistance

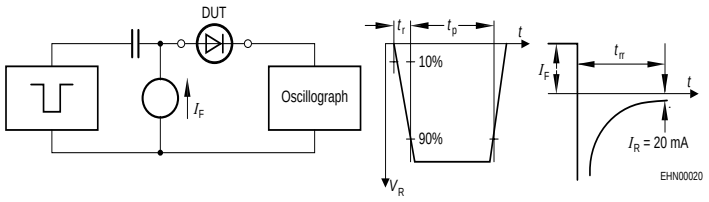
Junction - soldering point[1)]	R_{thJS}	≤ 22	K/W

[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at T_A = 25°C, unless otherwise specified.

Parameter		Symbol	Values			Unit
			min.	typ.	max.	
DC characteristics						
Breakdown voltage		$V_{(BR)}$				V
$I_{(BR)}$ = 100 µA	**BAS78A**		50	-	-	
	BAS78B		100	-	-	
	BAS78C		200	-	-	
	BAS78D		400	-	-	
Forward voltage		V_F				
I_F = 1 A			-	-	1.6	
I_F = 2 A			-	-	2	
Reverse current		I_R	-	-	1	µA
$V_R = V_{Rmax}$						
Reverse current		I_R	-	-	50	
$V_R = V_{Rmax}$, T_A = 150 °C						
AC characteristics						
Diode capacitance		C_D	-	10	-	pF
V_R = 0 V, f = 1 MHz						
Reverse recovery time		t_{rr}	-	1	-	µs
I_F = 200 mA, I_R = 200 mA, R_L = 100 Ω,						
measured at I_R = 200mA						

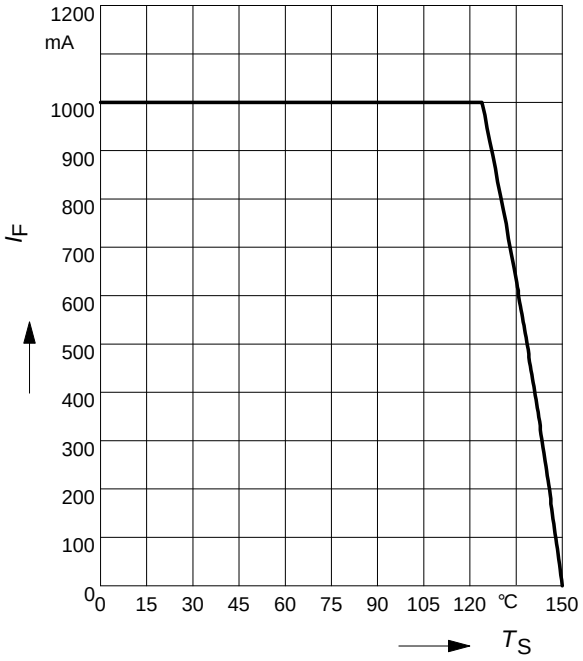
Test circuit for reverse recovery time



Pulse generator: t_p = 10µs, D = 0.05, t_r = 0.6ns, R_i = 50Ω

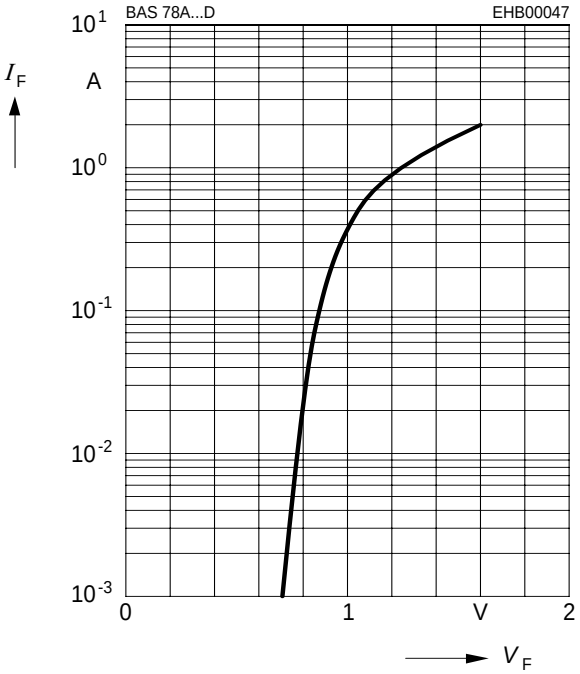
Oscillograph: R = 50Ω, t_r = 0.35ns, $C \leq$ 1pF

Forward current $I_F = f(T_S)$



Forward current $I_F = f(V_F)$

T_A = 25°C



Reverse current $I_R = f(T_A)$

$V_R = V_{Rmax}$