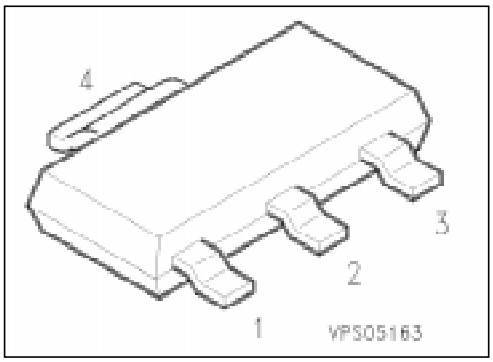
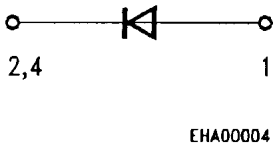
SIEMENS

Silicon Switching Diodes

BAS 78 A
... BAS 78 D

- Switching applications
- High breakdown voltage



Type	Marking	Ordering Code (tape and reel)	Pin Configuration	Package[1]
BAS 78 A BAS 78 B BAS 78 C BAS 78 D	BAS 78 A BAS 78 B BAS 78 C BAS 78 D	Q62702-A910 Q62702-A911 Q62702-A912 Q62702-A913		SOT-223

Maximum Ratings

Parameter	Symbol	Values				Unit
		BAS 78 A	BAS 78 B	BAS 78 C	BAS 78 D	
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[2]	P_{tot}	1.2				W
Junction temperature	T_j	150				°C
Storage temperature range	T_{stg}	– 65 … + 150				

Thermal Resistance

Junction - ambient[2]	$R_{th\ JA}$	≤ 92	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 22	

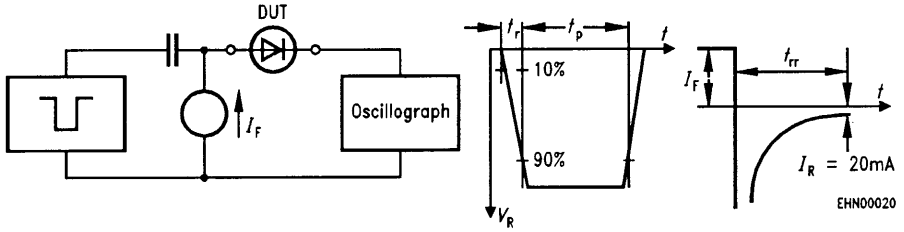
1) For detailed information see chapter Package Outlines.
2) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

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	BAS 78 A		50	–	–	
	BAS 78 B		100	–	–	
	BAS 78 C		200	–	–	
	BAS 78 D		400	–	–	
Forward voltage[1]		V_F				
I_F = 1 A			–	–	1.6	
I_F = 2 A			–	–	2	
Reverse current		I_R				µA
$V_R = V_{R\,max}$			–	–	1	
$V_R = V_{R\,max}$, T_A = 150 °C			–	–	50	
AC characteristics						
Diode capacitance		C_D	–	10	–	pF
V_R = 0, 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 = 20 mA						

Test circuit for reverse recovery time

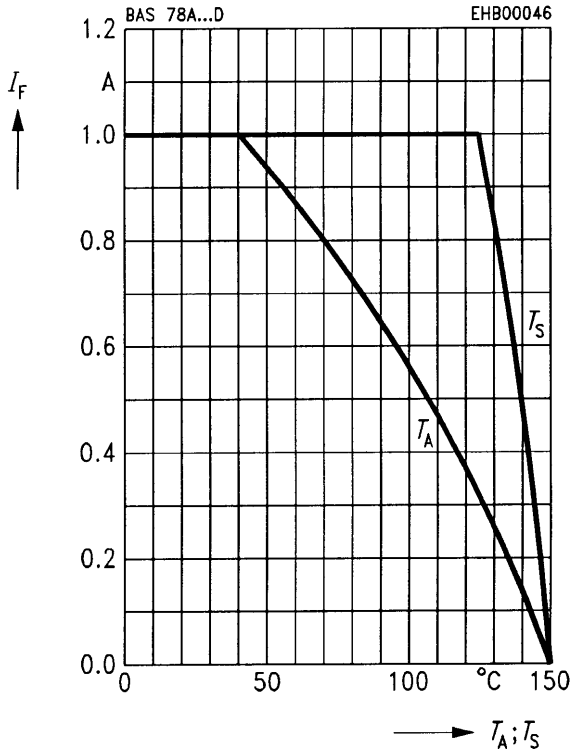


Pulse generator: t_p = 5 µs, D = 0.05
t_r = 0.6 ns, R_j = 50 Ω
$V_p = V_R + I_F \times R_j$

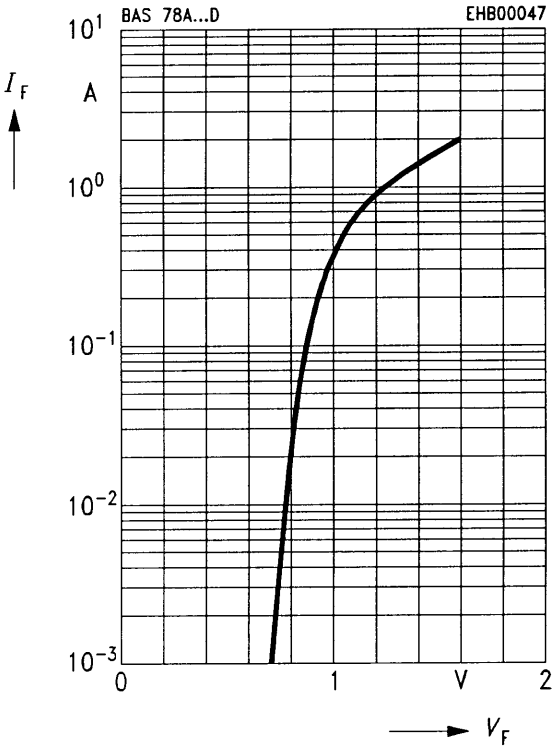
Oscillograph: R = 50 Ω
t_r = 0.35 ns
$C \leq$ 1 pF

[1] Pulse test conditions: $t \leq$ 300 µs, D = 2 %.

Forward current $I_F = f(T_A^*; T_S)$
* Package mounted on epoxy



Forward current $I_F = f(V_F)$
T_A = 25 °C



Reverse current $I_R = f(T_A)$
V_{CE} = 10 V