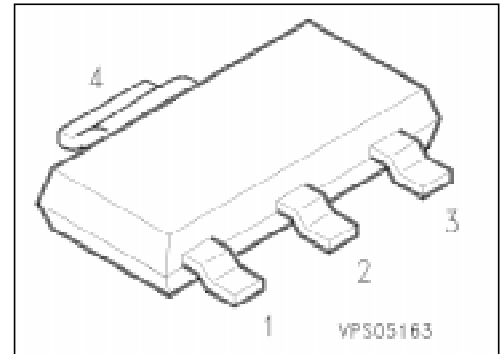


Silicon Switching Diodes

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 A	Q62702-A910		SOT-223
BAS 78 B	BAS 78 B	Q62702-A911		
BAS 78 C	BAS 78 C	Q62702-A912		
BAS 78 D	BAS 78 D	Q62702-A913		

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, $t = 1 \mu s$	I_{FS}	10				
Total power dissipation, $T_s = 124 \text{ }^\circ\text{C}^2)$	P_{tot}	1.2				W
Junction temperature	T_j	150				$^\circ\text{C}$
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 $T_A = 25\text{ }^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

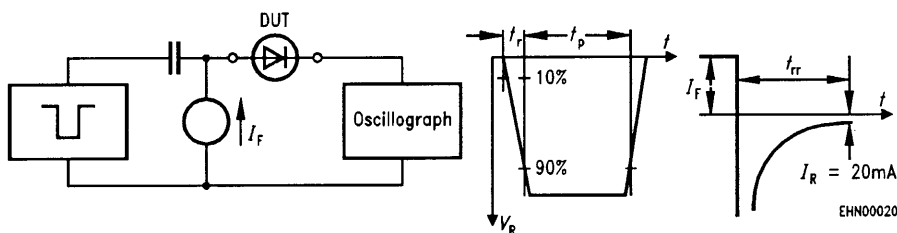
DC characteristics

Breakdown voltage $I_{(BR)} = 100\text{ }\mu\text{A}$	BAS 78 A BAS 78 B BAS 78 C BAS 78 D	$V_{(BR)}$	50 100 200 400	— — — —	— — — —	V
Forward voltage ¹⁾ $I_F = 1\text{ A}$ $I_F = 2\text{ A}$		V_F	— —	— —	1.6 2	
Reverse current $V_R = V_{R\text{ max}}$ $V_R = V_{R\text{ max}}, T_A = 150\text{ }^\circ\text{C}$		I_R	— —	— —	1 50	μA

AC characteristics

Diode capacitance $V_R = 0, f = 1\text{ MHz}$		C_D	—	10	—	pF
Reverse recovery time $I_F = 200\text{ mA}, I_R = 200\text{ mA}, R_L = 100\text{ }\Omega$ measured at $I_R = 20\text{ mA}$		t_{rr}	—	1	—	μs

Test circuit for reverse recovery time



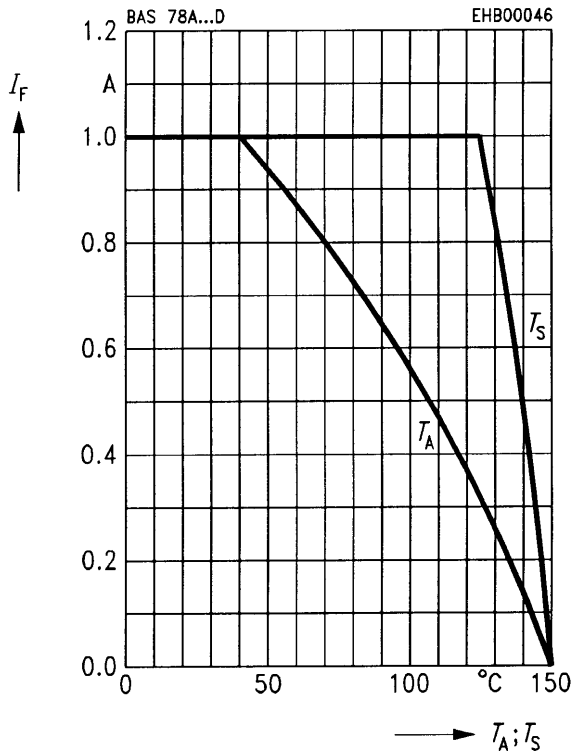
Pulse generator: $t_p = 5\text{ }\mu\text{s}, D = 0.05$
 $t_r = 0.6\text{ ns}, R_j = 50\text{ }\Omega$
 $V_p = V_R + I_F \times R_j$

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

¹⁾ Pulse test conditions: $t \leq 300\text{ }\mu\text{s}, D = 2\text{ }\%$.

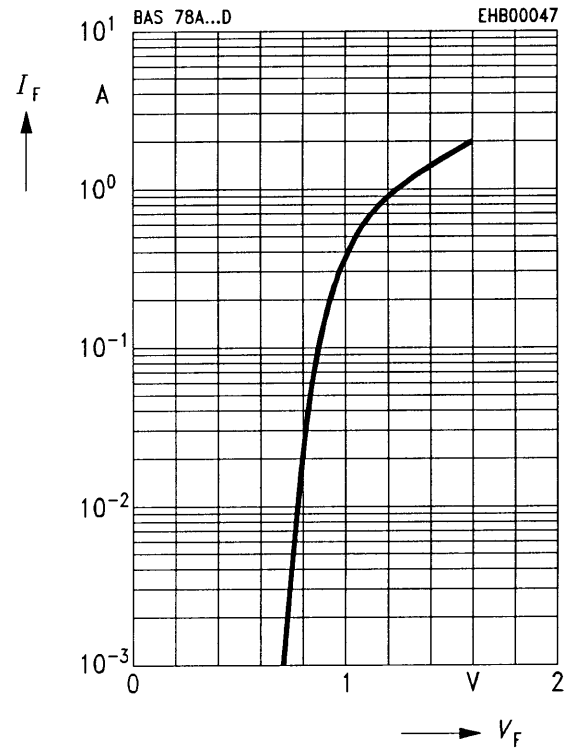
Forward current $I_F = f(T_A^*; T_S)$

* Package mounted on epoxy



Forward current $I_F = f(V_F)$

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



Reverse current $I_R = f(T_A)$

$V_{CE} = 10\text{ V}$

