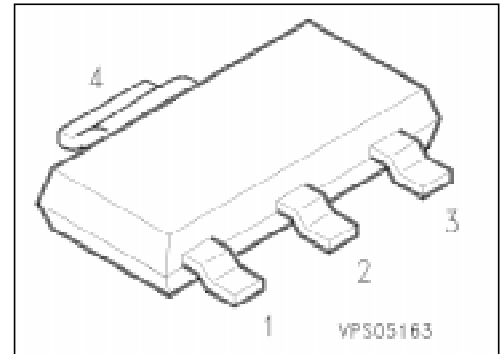


## Silicon Switching Diodes

**BAS 78 A**  
**... BAS 78 D**

- Switching applications
- High breakdown voltage



Type	Marking	Ordering Code (tape and reel)	Pin Configuration	Package <sup>1)</sup>
BAS 78 A	BAS 78 A	Q62702-A910	<p>EHA00004</p>	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 <sup>2)</sup>	$R_{th JA}$	$\leq 92$	K/W
Junction - soldering point	$R_{th JS}$	$\leq 22$	

<sup>1)</sup> For detailed information see chapter Package Outlines.

<sup>2)</sup> Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm<sup>2</sup> Cu.

## Electrical Characteristics

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

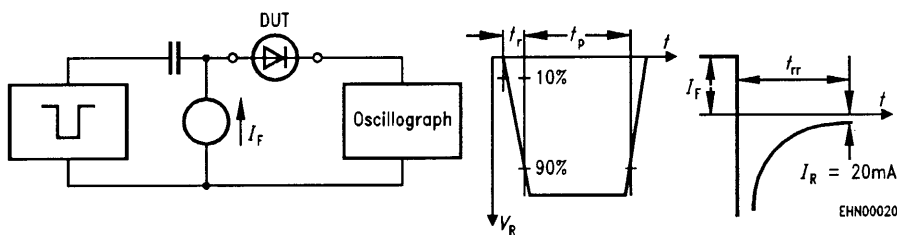
### DC characteristics

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 <sup>1)</sup> $I_F = 1\text{ A}$ $I_F = 2\text{ A}$		$V_F$	— —	— —	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	$\mu\text{A}$

### 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	—	$\mu\text{s}$

### Test circuit for reverse recovery time



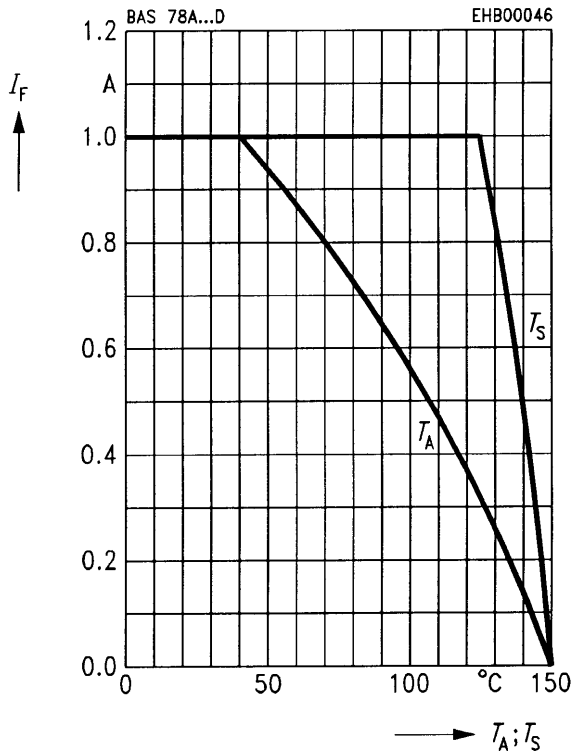
Pulse generator:  $t_p = 5\text{ }\mu\text{s}, D = 0.05$   
 $t_r = 0.6\text{ ns}, R_j = 50\text{ }\Omega$   
 $V_p = V_R + I_F \times R_j$

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

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

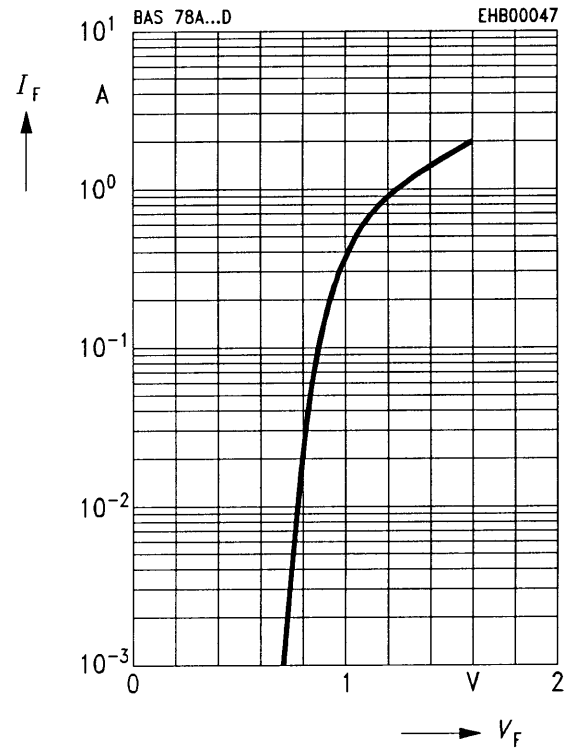
### Forward current $I_F = f(T_A^*; T_S)$

\* Package mounted on epoxy



### Forward current $I_F = f(V_F)$

$T_A = 25\text{ °C}$



### Reverse current $I_R = f(T_A)$

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

