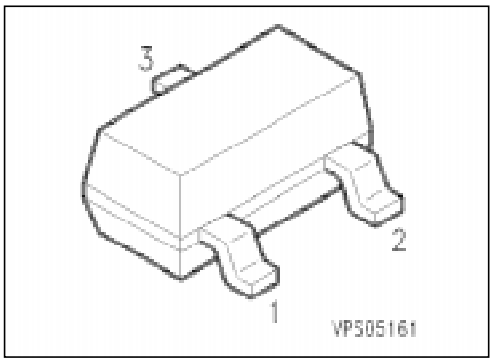
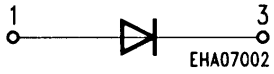
SIEMENS

Silicon Switching Diodes

BAS 19
… BAS 21

- High-speed, high-voltage switch



Type	Marking	Ordering Code (tape and reel)	Pin Configuration	Package[1)]
BAS 19 BAS 20 BAS 21	JPs JRs JSs	Q62702-A95 Q62702-A113 Q62702-A79		SOT-23

Maximum Ratings

Parameter	Symbol	Values			Unit
		BAS 19	BAS 20	BAS 21	
Reverse voltage	V_R	100	150	200	V
Peak reverse voltage	V_{RM}	120	200	250	
Forward current	I_F	250			mA
Peak forward current	I_{FM}	625			
Total power dissipation, T_S = 70 ˚C	P_{tot}	350			mW
Junction temperature	T_j	150			˚C
Storage temperature range	T_{stg}	– 65 … + 150			

Thermal Resistance

Junction - ambient[2)]	$R_{th\ JA}$	≤ 300	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 230	

1) For detailed information see chapter Package Outlines.

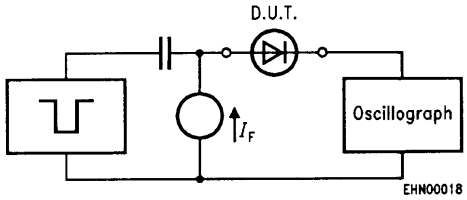
2) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

Electrical Characteristics

at T_A = 25 °C, unless otherwise specified.

Parameter		Symbol	Values			Unit
			min.	typ.	max.	
DC characteristics						
Breakdown voltage[1]		$V_{(BR)}$				V
$I_{(BR)}$ = 100 µA	BAS 19		120	–	–	
	BAS 20		200	–	–	
	BAS 21		250	–	–	
Forward voltage		V_F				
I_F = 100 mA			–	–	1	
I_F = 200 mA			–	–	1.25	
Reverse current		I_R				
$V_R = V_{R\,max}$			–	–	100	nA
$V_R = V_{R\,max}$; T_j = 150 °C			–	–	100	µA
AC characteristics						
Diode capacitance V_R = 0 V, f = 1 MHz		C_D	–	–	5	pF
Reverse recovery time I_F = 30 mA, I_R = 30 mA, R_L = 100 Ω measured at I_R = 3 mA		t_{rr}	–	–	50	ns

Test circuit for reverse recovery time

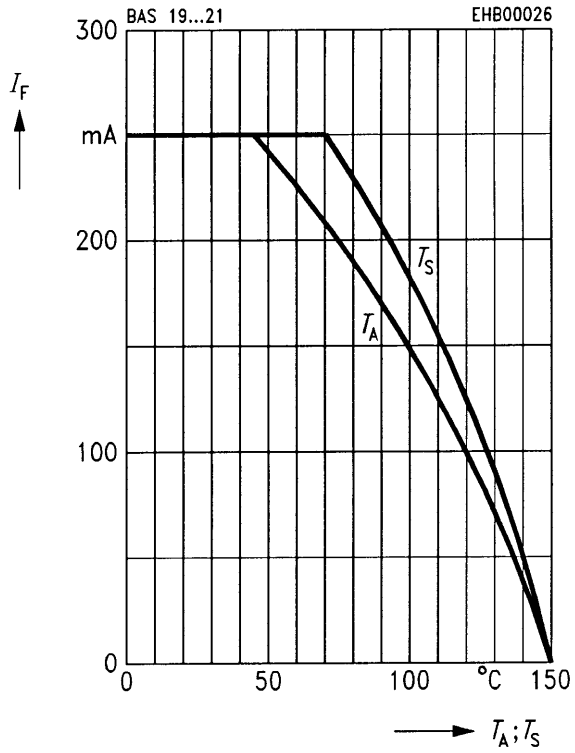


Pulse generator: t_p = 100 ns, D = 0.05
t_r = 0.6 ns, R_j = 50 Ω

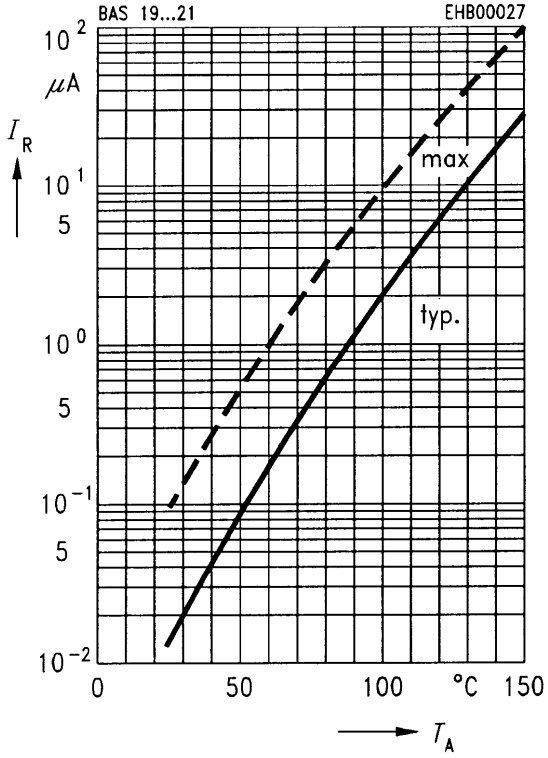
Oscillograph: R = 50 Ω
t_r = 0.35 ns
$C \leq$ 1 pF

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

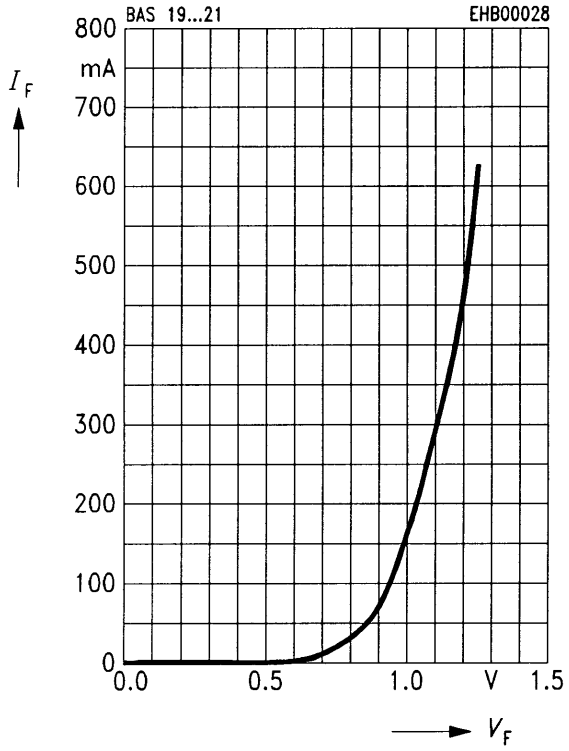
Forward current $I_F = f(T_A^*; T_S)$
* Package mounted on epoxy



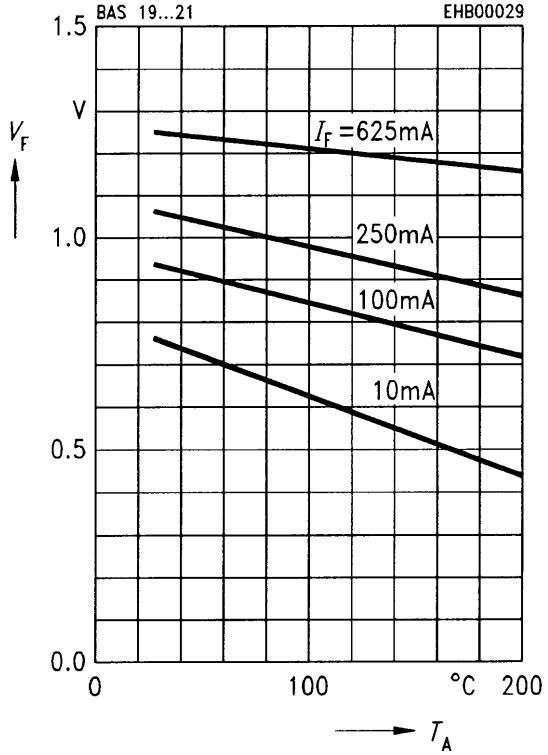
Reverse current $I_R = f(T_A)$



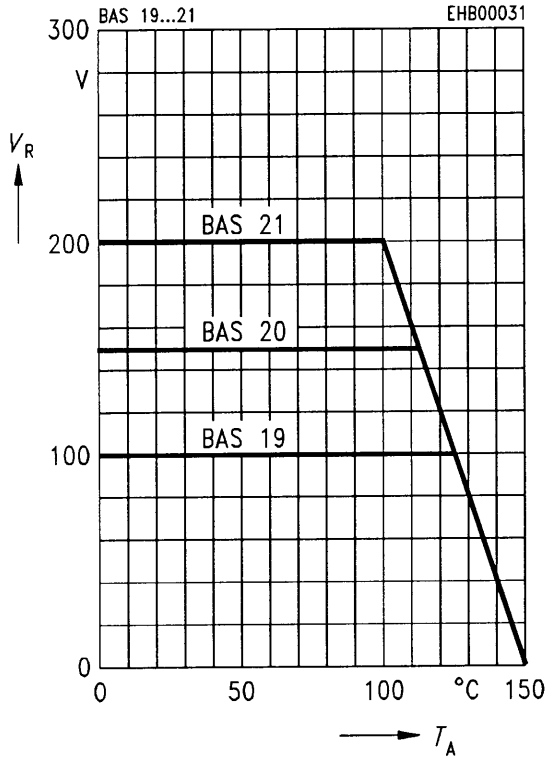
Forward current $I_F = f(V_F)$



Forward voltage $V_F = f(T_A)$



Reverse voltage $V_R = f(T_A)$



Peak forward current $I_{FM} = f(t)$