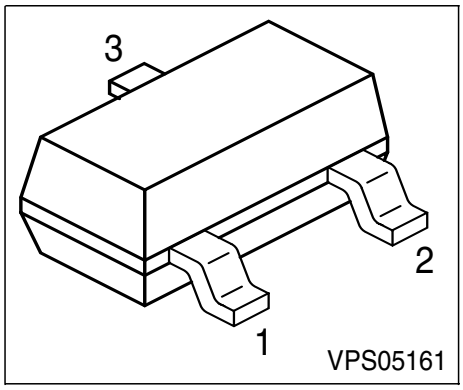
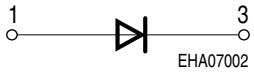
Silicon Switching Diodes

- High-speed, high-voltage switching applications





Type	Marking	Pin Configuration			Package
BAS 19	JPs	1 = A	2 = n.c.	3 = C	SOT-23
BAS 20	JRs	1 = A	2 = n.c.	3 = C	SOT-23
BAS 21	JSs	1 = A	2 = n.c.	3 = C	SOT-23

Maximum Ratings

Parameter	Symbol	BAS 19	BAS 20	BAS 21	Unit
Diode 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	T_{stg}	-65 ... 150			

Thermal Resistance

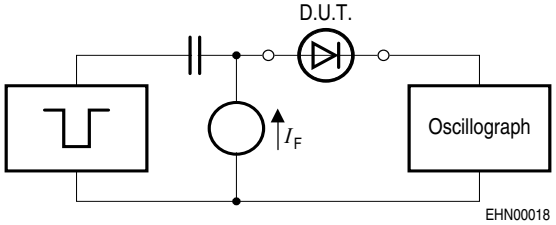
Junction - ambient [1)]	R_{thJA}	≤ 300			K/W
Junction - soldering point	R_{thJS}	≤ 230			

1) Package mounted on epoxy pcb 40mm x 40mm x 1.5mm / 6cm^2 Cu

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

Parameter		Symbol	Values			Unit
			min.	typ.	max.	
AC characteristics						
Breakdown voltage		$V_{(BR)}$				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	-	-	100	nA
$V_R = V_{Rmax}$						
Reverse current		I_R	-	-	100	µA
$V_R = V_{Rmax}$, T_A = 150 °C						
AC characteristics						
Diode capacitance		C_D	-	-	5	pF
V_R = 0 V, f = 1 MHz						
Reverse recovery time		t_{rr}	-	-	50	ns
I_F = 30 mA, I_R = 30 mA, R_L = 100 Ω,						
measured at I_R = 3mA						

Test circuit for reverse recovery time

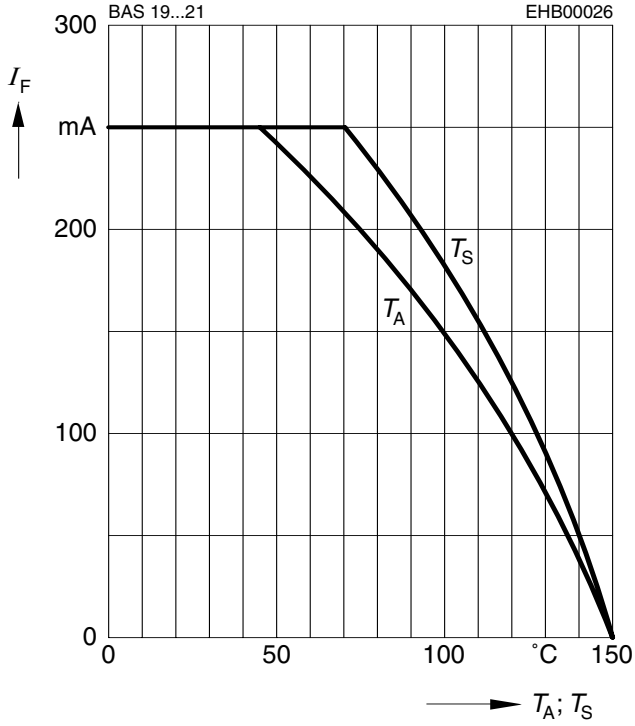


Pulse generator: t_p = 100ns, D = 0.05,
t_r = 0.6ns, R_i = 50Ω

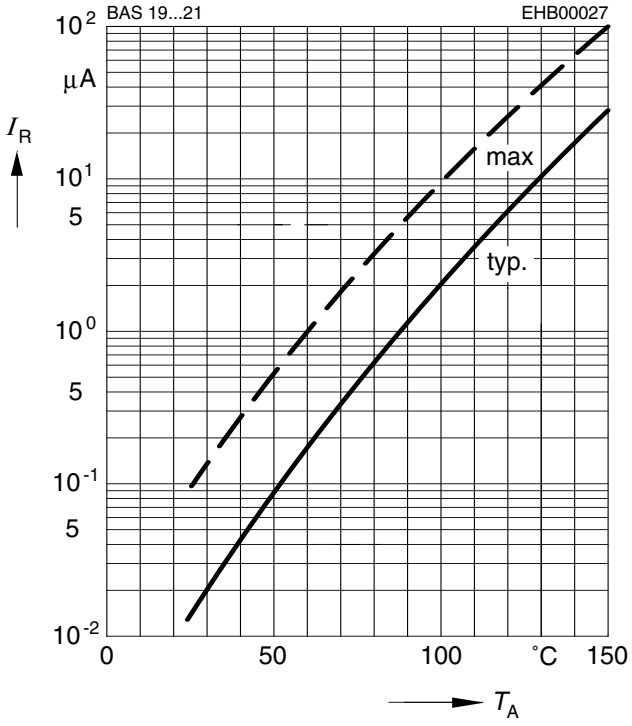
Oscillograph: R = 50Ω, t_r = 0.35ns,
$C \leq$ 1pF

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

* Package mounted on epoxy

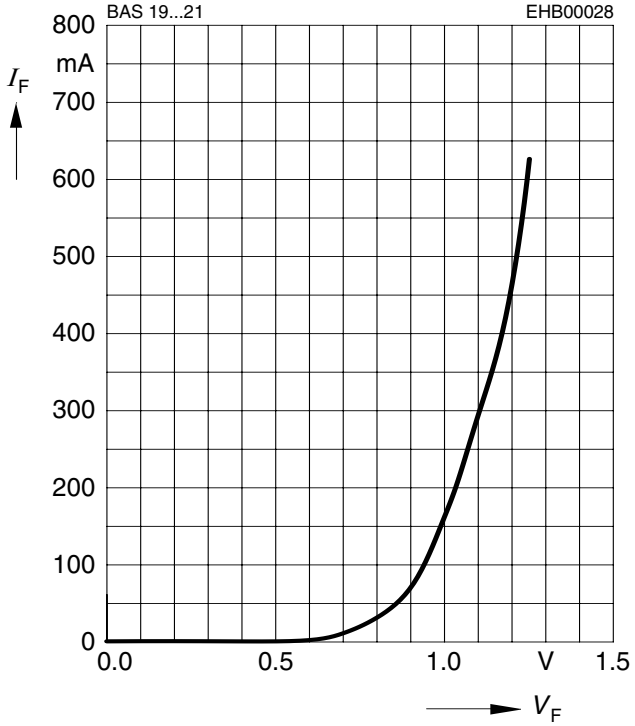


Reverse current $I_R = f(T_A)$

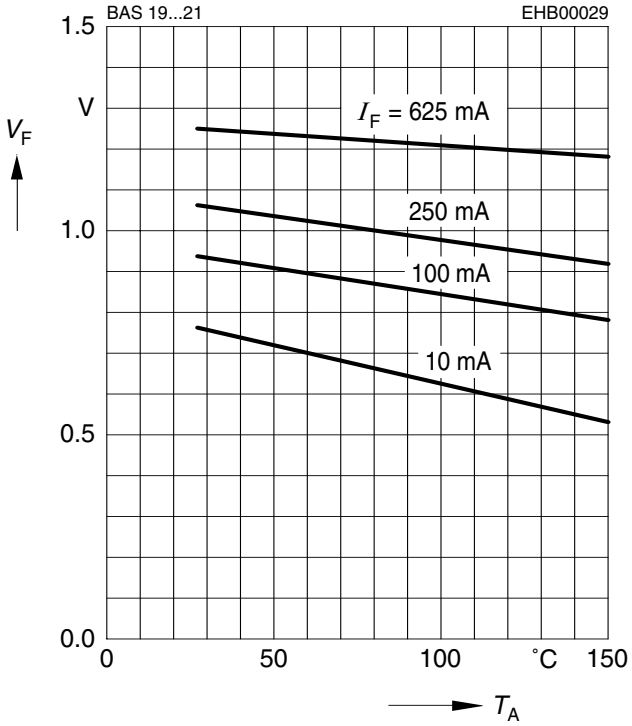


Forward current $I_F = f(V_F)$

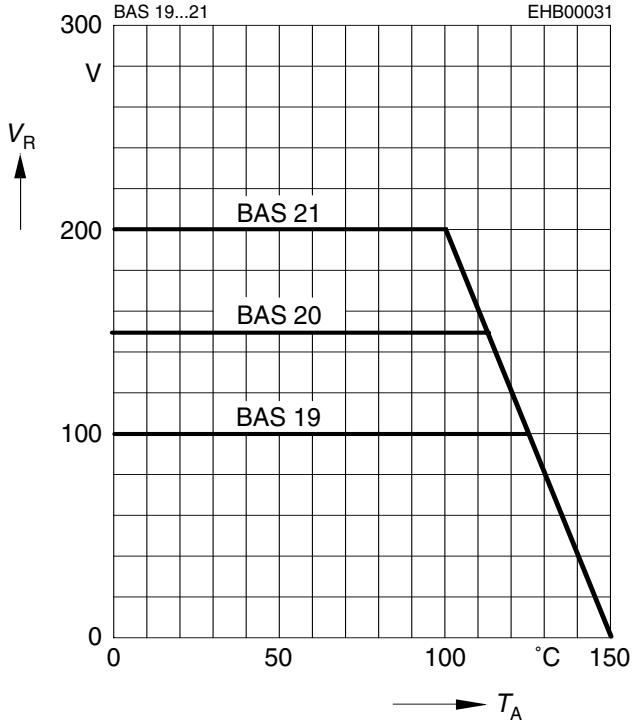
T_A = 25°C



Forward voltage $V_F = f(T_A)$

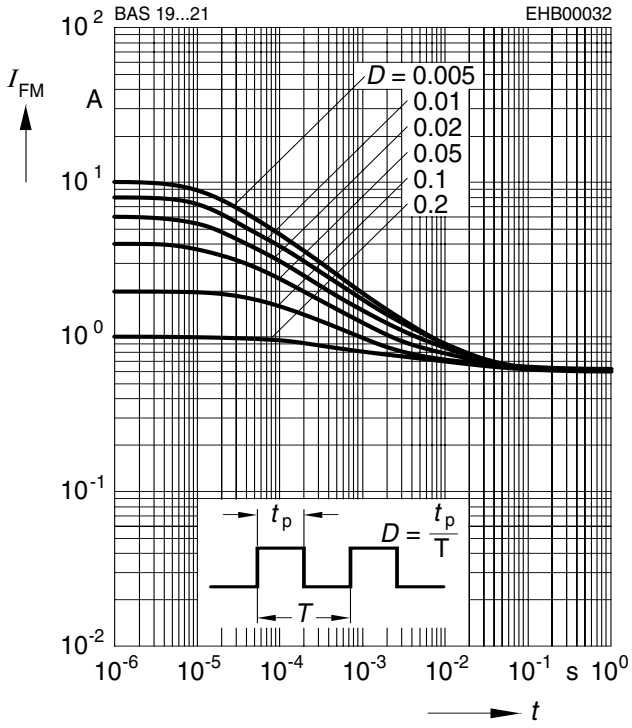


Reverse voltage $V_R = f(T_A)$

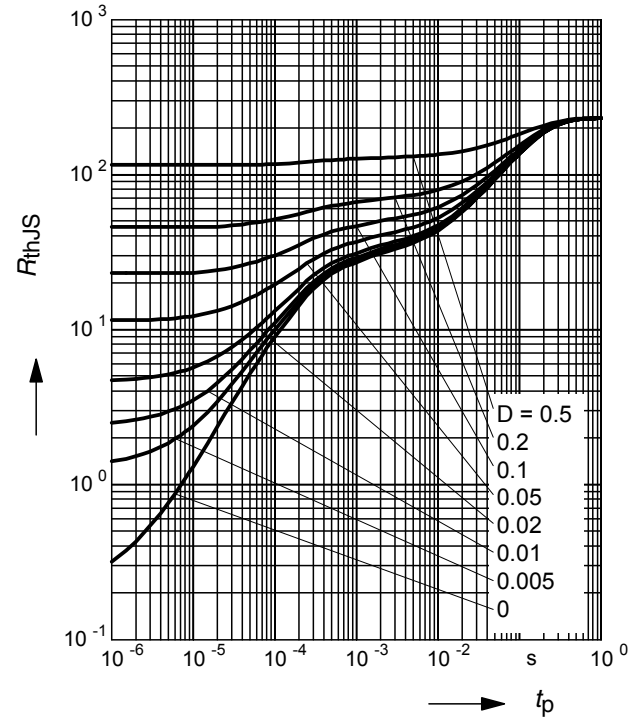


Peak forward current $I_{FM} = f(t_p)$

T_A = 25°C



Permissible Pulse Load $R_{thJS} = f(t_p)$



Permissible Pulse Load

$I_{Fmax} / I_{FDC} = f(t_p)$