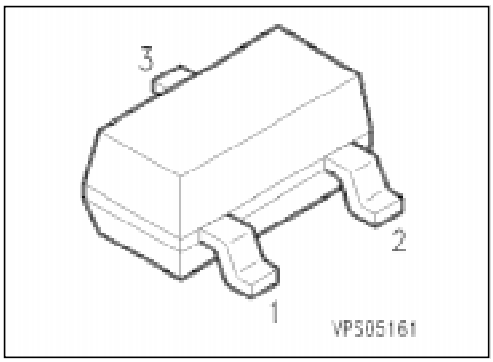
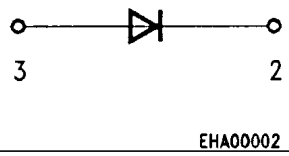
SIEMENS

Silicon Switching Diode — BAL 99

- For high-speed switching



Type	Marking	Ordering Code (tape and reel)	Pin Configuration	Package[1)]
BAL 99	JFs	Q62702-A687		SOT-23

Maximum Ratings

Parameter	Symbol	Values	Unit
Reverse voltage	V_R	70	V
Peak reverse voltage	V_{RM}	70	
Forward current	I_F	250	mA
Surge forward current, t = 1 µs	I_{FS}	4.5	A
Total power dissipation, T_S = 54 ˚C	P_{tot}	370	mW
Junction temperature	T_j	150	˚C
Storage temperature range	T_{stg}	– 65 … + 150	

Thermal Resistance

Junction - ambient[2)]	$R_{th\ JA}$	≤ 330	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 260	

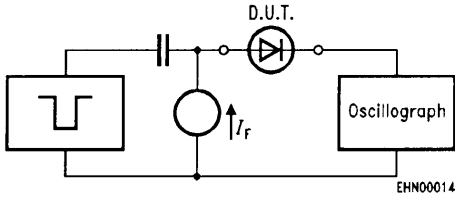
1) For detailed information see chapter Package Outlines.

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 $I_{(BR)}$ = 100 µA	$V_{(BR)}$	70	–	–	V
Forward voltage	V_F				
I_F = 1 mA		–	–	715	mV
I_F = 10 mA		–	–	855	mV
I_F = 50 mA		–	–	1	V
I_F = 150 mA		–	–	1.25	V
Reverse current	I_R				µA
V_R = 70 V		–	–	2.5	
V_R = 25 V, T_A = 150 ˚C		–	–	30	
V_R = 70 V, T_A = 150 ˚C		–	–	50	
AC characteristics					
Diode capacitance V_R = 0 V, f = 1 MHz	C_D	–	–	1.5	pF
Reverse recovery time I_F = 10 mA, I_R = 10 mA, R_L = 100 Ω measured at I_R = 1 mA	t_{rr}	–	–	6	ns

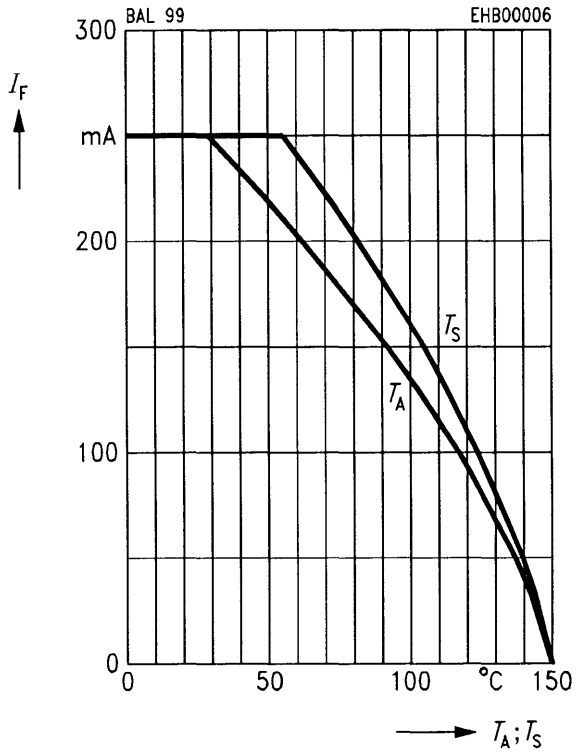
Test circuit for reverse recovery time



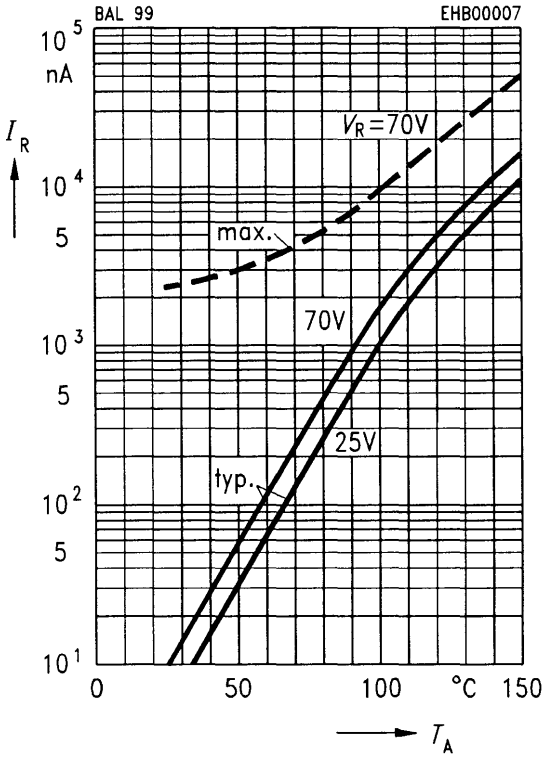
Pulse generator: t_p = 100 ns, D = 0.05
t_r = 0.6 ns, R_j = 50 Ω

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

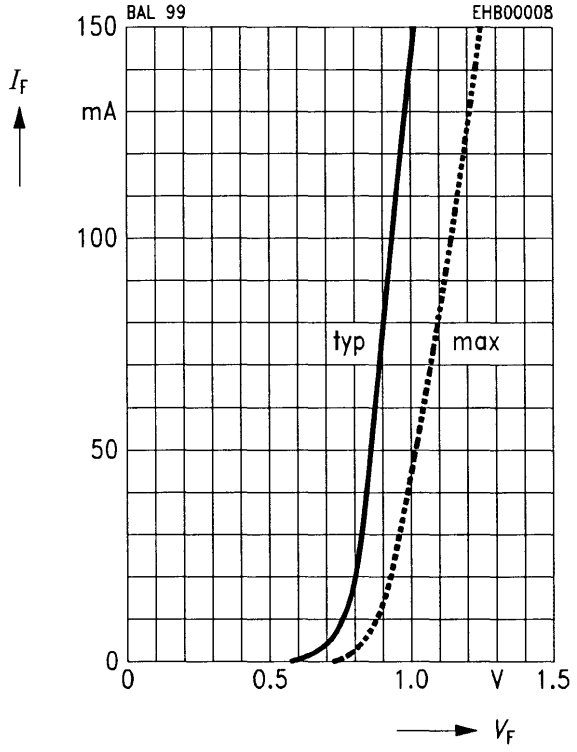
Forward current $I_F = f(T_A^*; T_S)$
* Package mounted on epoxy



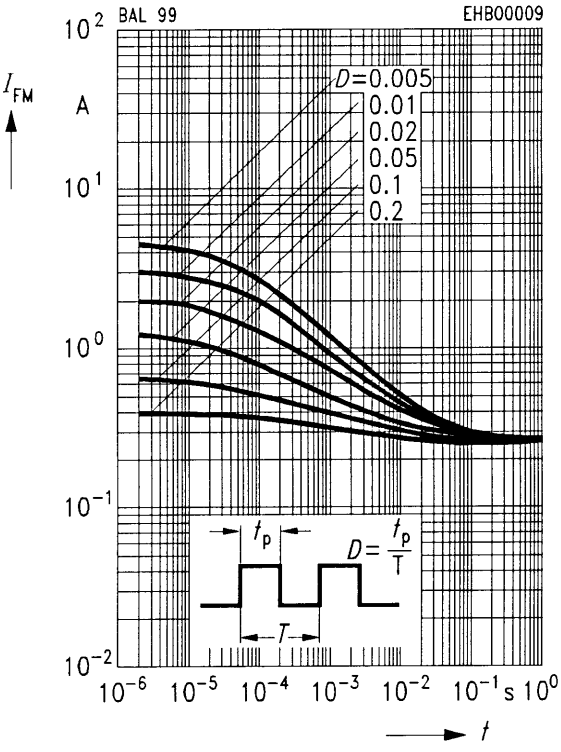
Reverse current $I_R = f(T_A)$



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



Peak forward current $I_{FM} = f(t)$
T_A = 25 ˚C



Forward voltage $V_F = f(T_A)$

