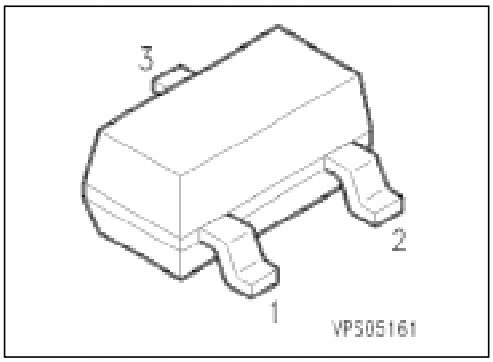
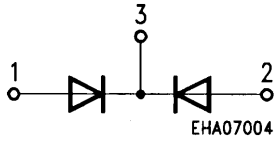
SIEMENS

Silicon Switching Diode Array

SMBD 2837
SMBD 2838

- For high-speed switching applications
- Common cathode



Type	Marking	Ordering Code (tape and reel)	Pin Configuration	Package[1)]
SMBD 2837 SMBD 2838	sA5 sA4	Q68000-A8487 Q68000-A8437		SOT-23

Maximum Ratings

Parameter	Symbol	Values		Unit
		SMBD 2837	SMBD 2838	
Reverse voltage	V_R	30	50	V
Peak reverse voltage	V_{RM}	35	75	
Forward current	I_F	200		mA
Surge forward current, t = 1 µs	I_{FS}	4.5		A
Total power dissipation, T_S = 35 ˚C	P_{tot}	250		mW
Junction temperature	T_j	150		˚C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient[2)]	$R_{th\ JA}$	≤ 600	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 460	

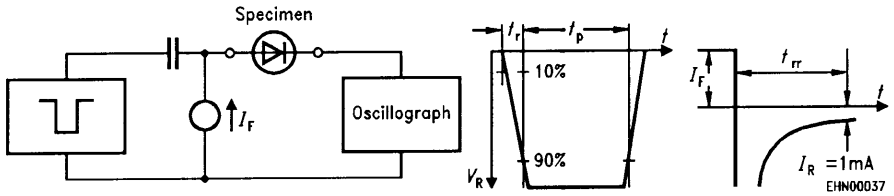
1) For detailed information see chapter Package Outlines.
2) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

Electrical Characteristics

at T_A = 25 °C, unless otherwise specified.

Parameter		Symbol	Values			Unit
			min.	typ.	max.	
DC characteristics						
Breakdown voltage		$V_{(BR)}$				V
$I_{(BR)}$ = 100 µA	SMBD 2837		35	–	–	
	SMBD 2838		75	–	–	
Forward voltage		V_F				mV
I_F = 10 mA			–	–	855	
I_F = 50 mA			–	–	1000	
I_F = 100 mA			–	–	1200	
Reverse current		I_R				nA
V_R = 30 V	SMBD 2837		–	–	100	
V_R = 50 V	SMBD 2838		–	–	100	
AC characteristics						
Diode capacitance V_R = 0, f = 1 MHz		C_D	–	–	4	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

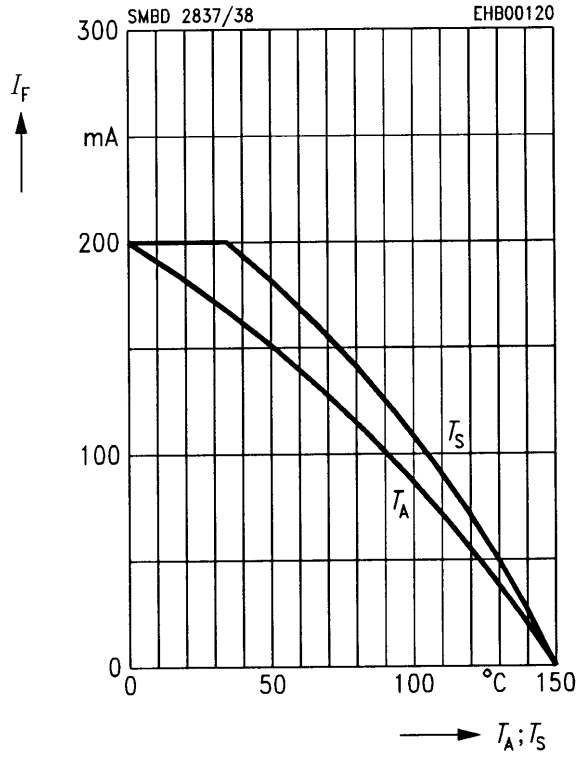
Test circuit for reverse recovery time



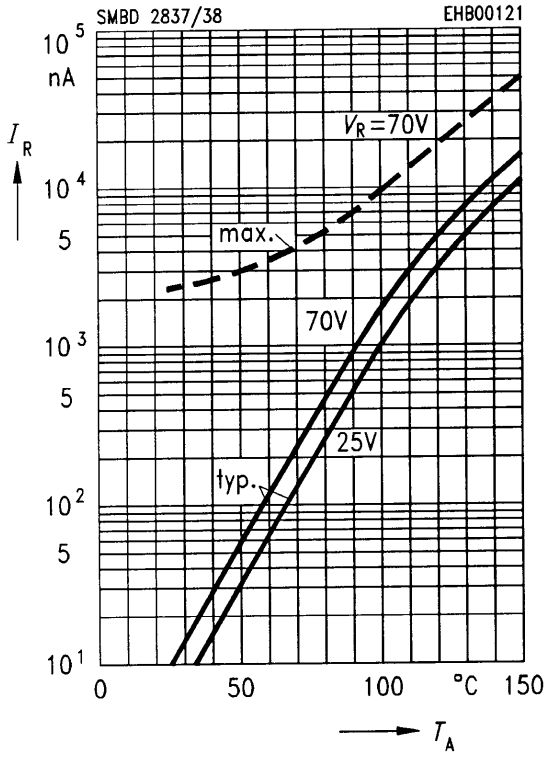
Pulse generator: t_p = 100 ns, D = 0.05
t_r = 0.6 ns, R_j = 50 Ω

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

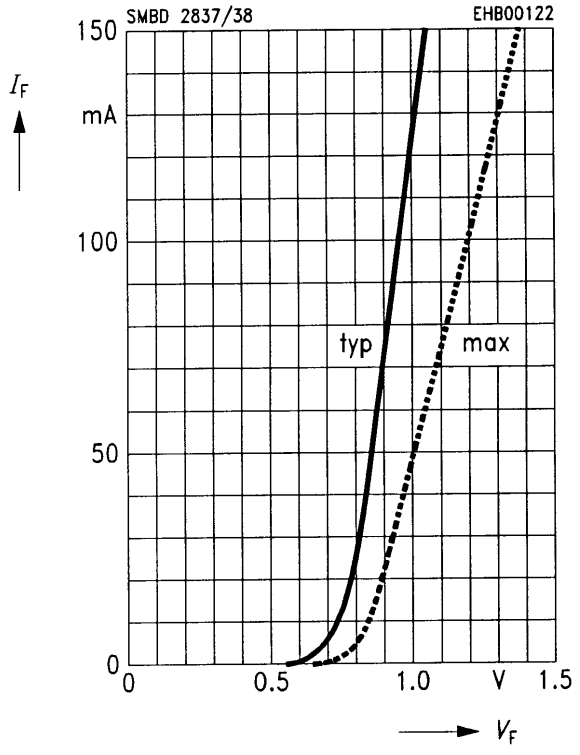
Forward current $I_F = f(T_A^*; T_S)$
* Package mounted on epoxy



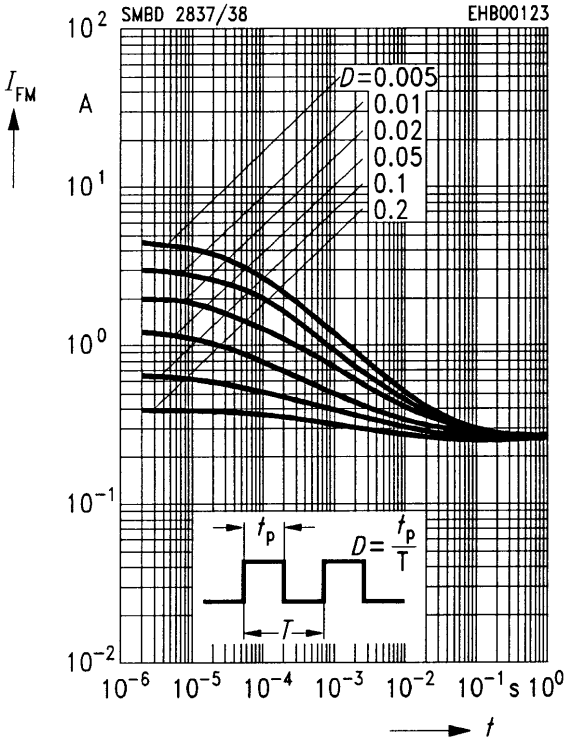
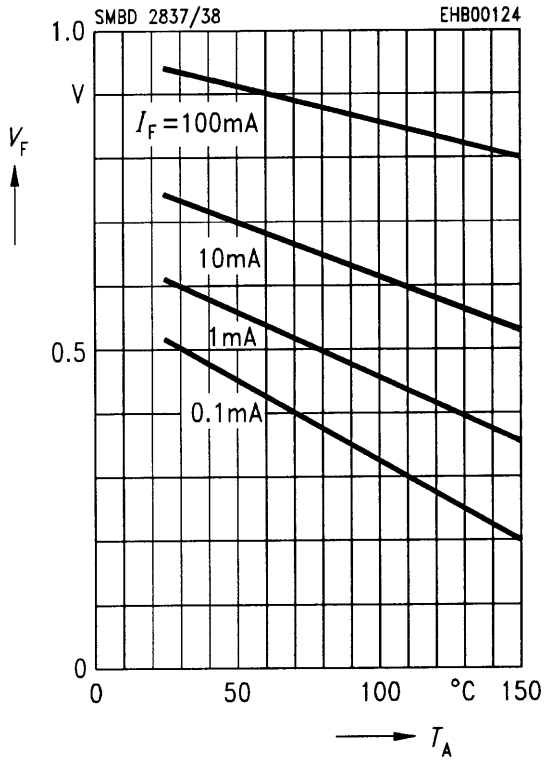
Reverse current $I_R = f(T_A)$



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



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



Forward voltage $V_F = f(T_A)$