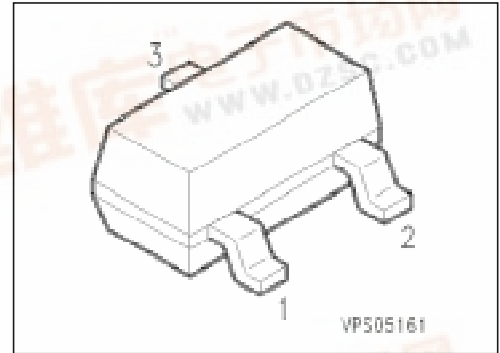


# SIEMENS

## 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 <sup>1)</sup> |
|------------------------|------------|-------------------------------|-------------------|-----------------------|
| SMBD 2837<br>SMBD 2838 | sA5<br>sA4 | Q68000-A8487<br>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, $t = 1 \mu s$                       | $I_{FS}$  | 4.5            |           | A                |
| Total power dissipation, $T_s = 35 \text{ }^\circ\text{C}$ | $P_{tot}$ | 250            |           | mW               |
| Junction temperature                                       | $T_j$     | 150            |           | $^\circ\text{C}$ |
| Storage temperature range                                  | $T_{stg}$ | - 65 ... + 150 |           |                  |

### Thermal Resistance

|                                  |             |            |     |
|----------------------------------|-------------|------------|-----|
| Junction - ambient <sup>2)</sup> | $R_{th JA}$ | $\leq 600$ | K/W |
| Junction - soldering point       | $R_{th JS}$ | $\leq 460$ |     |

<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. |      |

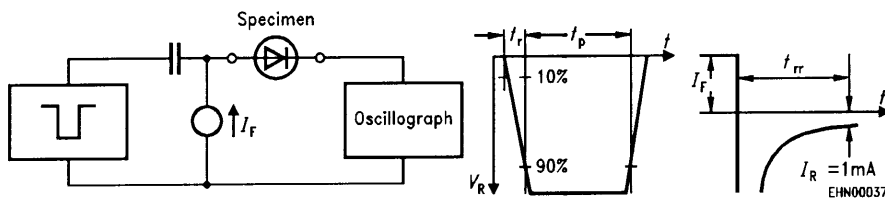
### DC characteristics

|  |                        |            |             |             |                     |    |
|--|------------------------|------------|-------------|-------------|---------------------|----|
| Breakdown voltage<br>$I_{(BR)} = 100\text{ }\mu\text{A}$                                 | SMBD 2837<br>SMBD 2838 | $V_{(BR)}$ | 35<br>75    | —<br>—      | —<br>—              | V  |
| Forward voltage<br>$I_F = 10\text{ mA}$<br>$I_F = 50\text{ mA}$<br>$I_F = 100\text{ mA}$ |                        | $V_F$      | —<br>—<br>— | —<br>—<br>— | 855<br>1000<br>1200 | mV |
| Reverse current<br>$V_R = 30\text{ V}$<br>$V_R = 50\text{ V}$                            | SMBD 2837<br>SMBD 2838 | $I_R$      | —<br>—      | —<br>—      | 100<br>100          | nA |

### AC characteristics

|   |  |          |   |   |   |    |
|---|--|----------|---|---|---|----|
| Diode capacitance<br>$V_R = 0, f = 1\text{ MHz}$  |  | $C_D$    | — | — | 4 | pF |
| Reverse recovery time<br>$I_F = 10\text{ mA}, I_R = 10\text{ mA}, R_L = 100\text{ }\Omega$<br>measured at $I_R = 1\text{ mA}$ |  | $t_{rr}$ | — | — | 6 | ns |

### Test circuit for reverse recovery time

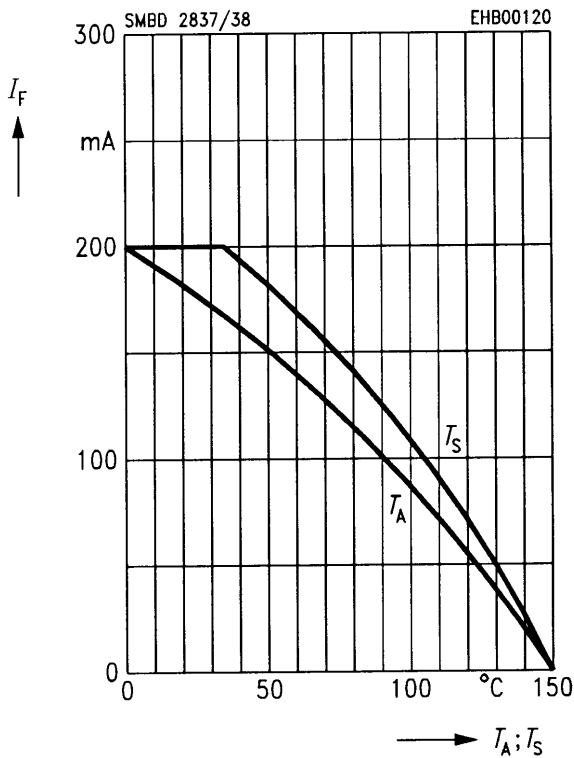


Pulse generator:  $t_p = 100\text{ ns}, D = 0.05$   
 $t_r = 0.6\text{ ns}, R_j = 50\text{ }\Omega$

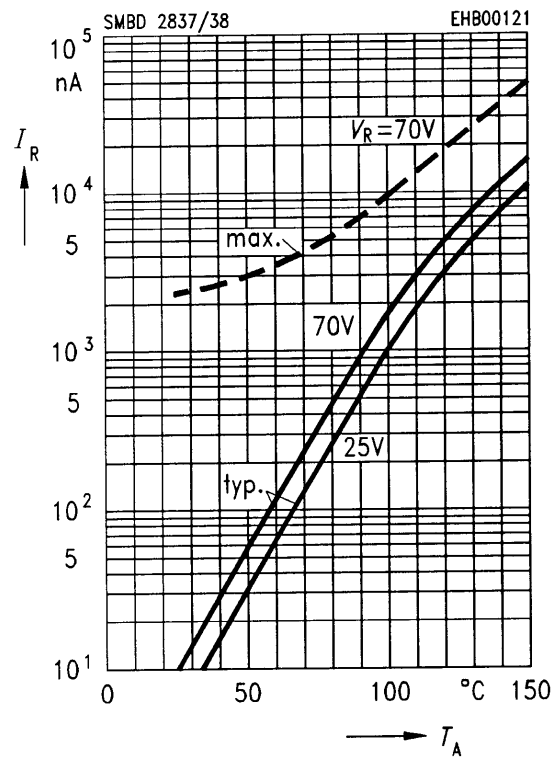
Oscilloscope:  $R = 50\text{ }\Omega$   
 $t_r = 0.35\text{ ns}$   
 $C \leq 1\text{ pF}$

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

\* Package mounted on epoxy

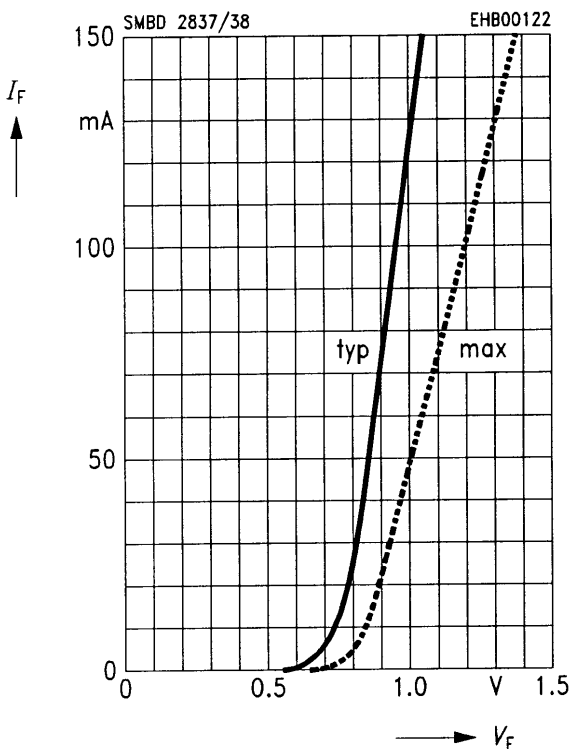


### Reverse current $I_R = f(T_A)$



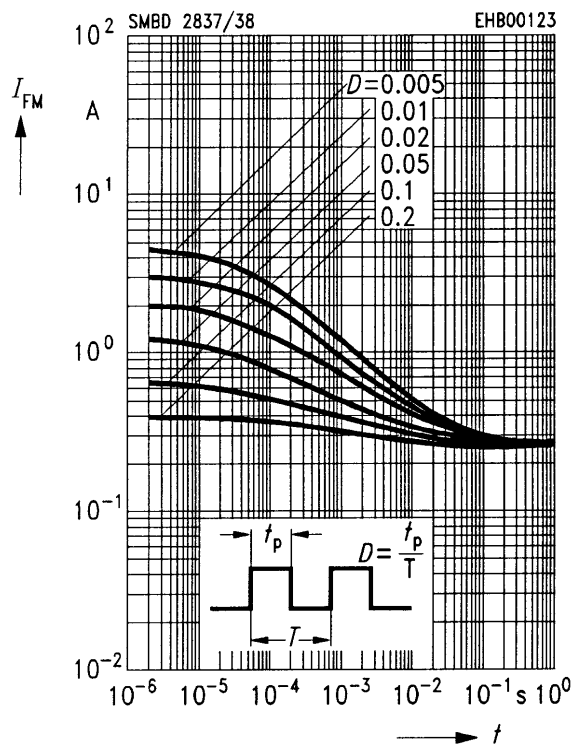
### Forward current $I_F = f(V_F)$

$T_A = 25\text{ °C}$



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

$T_A = 25\text{ °C}$



Forward voltage  $V_F = f(T_A)$

