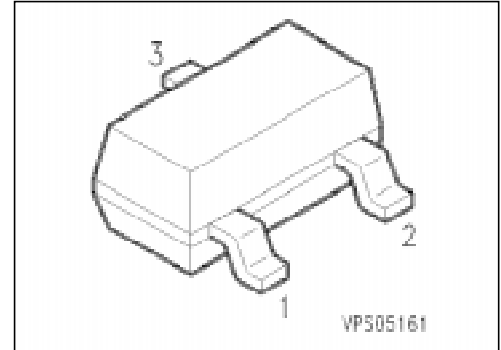


Silicon Switching Diode

BAL 74

- For high-speed switching



| Type | Marking | Ordering Code (tape and reel) | Pin Configuration | Package ¹⁾ |
|--------|---------|-------------------------------|-------------------|-----------------------|
| BAL 74 | JCs | Q62702-A718 | | SOT-23 |

Maximum Ratings

| Parameter | Symbol | Values | Unit |
|--|-----------|----------------|------------------|
| Reverse voltage | V_R | 50 | V |
| Peak reverse voltage | V_{RM} | 50 | |
| Forward current | I_F | 250 | mA |
| Surge forward current, $t = 1 \mu s$ | I_{FS} | 4.5 | A |
| Total power dissipation, $T_s = 54 \text{ }^\circ\text{C}$ | P_{tot} | 370 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| 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 $T_A = 25\text{ }^\circ\text{C}$, unless otherwise specified.

| Parameter | Symbol | Values | | | Unit |
|-----------|--------|--------|------|------|------|
| | | min. | typ. | max. | |

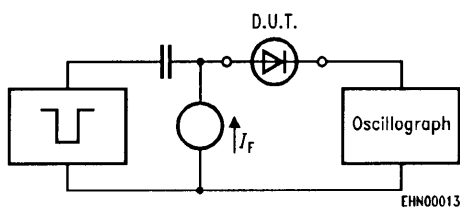
DC characteristics

| | | | | | |
|--|------------|----|---|------------|--------------------------------|
| Breakdown voltage $I_{(BR)} = 100\text{ }\mu\text{A}$ | $V_{(BR)}$ | 50 | – | – | V |
| Forward voltage $I_F = 100\text{ mA}$ | V_F | – | – | 1 | |
| Reverse current $V_R = 50\text{ V}$ $V_R = 50\text{ V}, T_A = 150\text{ }^\circ\text{C}$ | I_R | – | – | 0.1 100 | μA μA |

AC characteristics

| | | | | | |
|---|----------|---|---|---|----|
| Diode capacitance $V_R = 0\text{ V}, f = 1\text{ MHz}$ | C_D | – | – | 2 | pF |
| Reverse recovery time $I_F = 10\text{ mA}, I_R = 10\text{ mA}, R_L = 100\text{ }\Omega$ measured at $I_R = 1\text{ mA}$ | t_{rr} | – | – | 4 | ns |

Test circuit for reverse recovery time

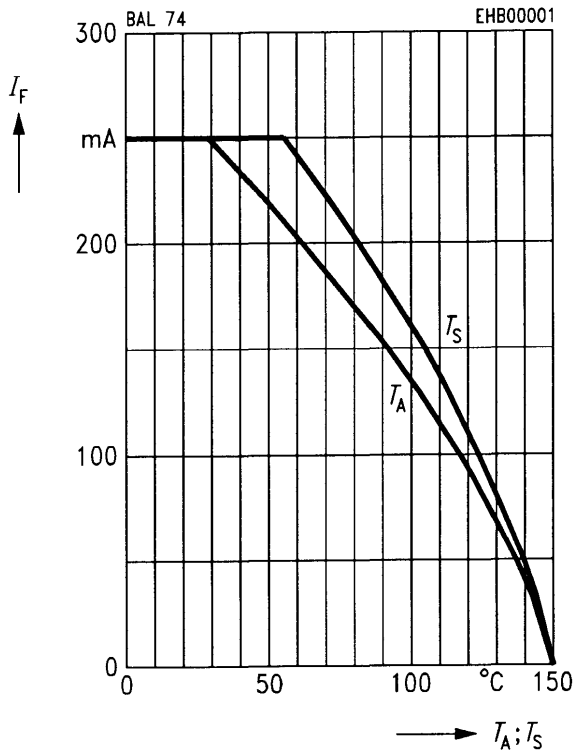


Pulse generator: $t_p = 100\text{ ns}, D = 0.05$
 $t_r = 0.6\text{ ns}, R_j = 50\text{ }\Omega$

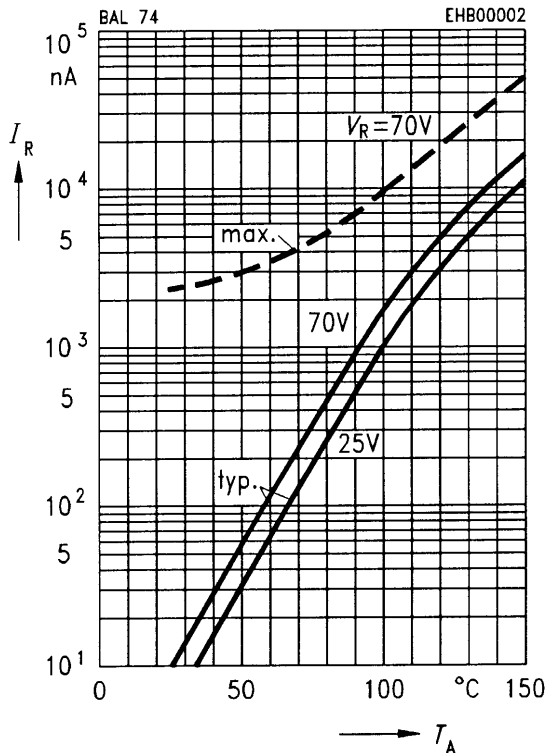
Oscilloscope: $R = 50\text{ }\Omega$
 $t_r = 0.35\text{ ns}$
 $C \leq 1\text{ pF}$

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

* Package mounted on epoxy

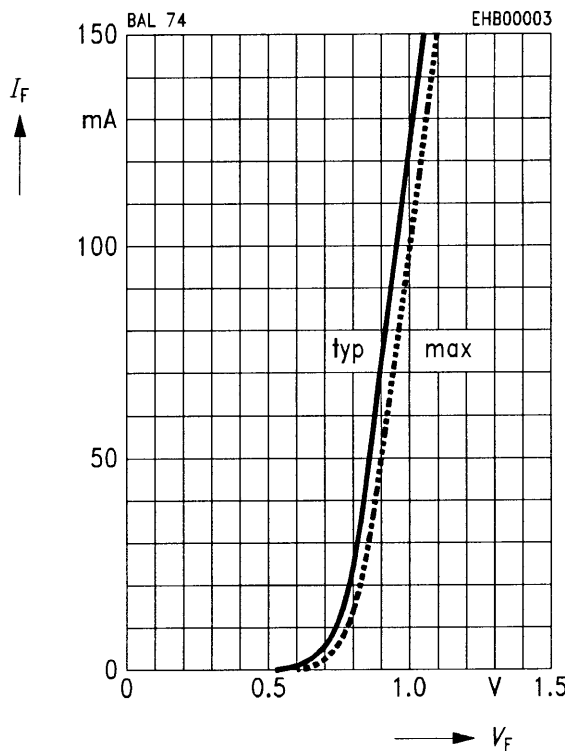


Reverse current $I_R = f(T_A)$



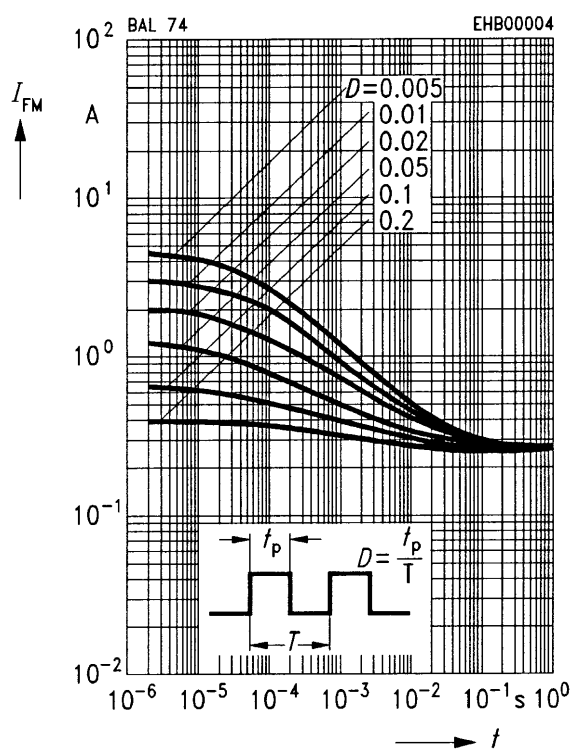
Forward current $I_F = f(V_F)$

$T_A = 25\text{ }^\circ\text{C}$



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

$T_A = 25\text{ }^\circ\text{C}$



Forward voltage $V_F = f(T_A)$

