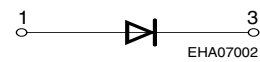
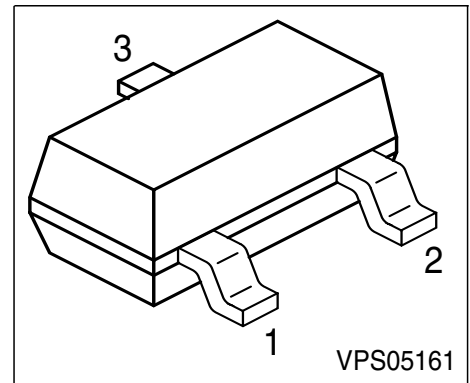


Silicon Switching Diode

- For high-speed switching applications



| Type | Marking | Pin Configuration | | | Package |
|--------|---------|-------------------|----------|-------|---------|
| BAR 74 | JBs | 1 = A | 2 = n.c. | 3 = C | SOT-23 |

Maximum Ratings

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------|------------------|
| Diode 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 | T_{stg} | -65 ... 150 | |

Thermal Resistance

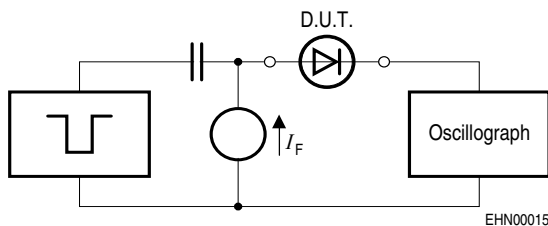
| | | | |
|----------------------------------|------------|------------|-----|
| Junction - ambient ¹⁾ | R_{thJA} | ≤ 330 | K/W |
| Junction - soldering point | R_{thJS} | ≤ 260 | |

1) Package mounted on epoxy pcb 40mm x 40mm x 1.5mm / 6cm² Cu

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

| Parameter | Symbol | Values | | | Unit |
|---|------------|--------|------|------|---------------|
| | | min. | typ. | max. | |
| DC characteristics | | | | | |
| Breakdown voltage $I_{(BR)} = 100 \mu\text{A}$ | $V_{(BR)}$ | 50 | - | - | V |
| Forward voltage $I_F = 100 \text{ mA}$ | V_F | - | - | 1 | |
| Reverse current $V_R = 50 \text{ V}$ | I_R | - | - | 0.1 | μA |
| Reverse current $V_R = 50 \text{ V}, T_A = 150^\circ\text{C}$ | I_R | - | - | 100 | |
| AC characteristics | | | | | |
| Diode capacitance $V_R = 0 \text{ V}, f = 20 \text{ MHz}$ | C_D | - | - | 2 | pF |
| Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, R_L = 100 \Omega$, measured at $I_R = 1 \text{ mA}$ | t_{rr} | - | - | 4 | ns |

Test circuit for reverse recovery time

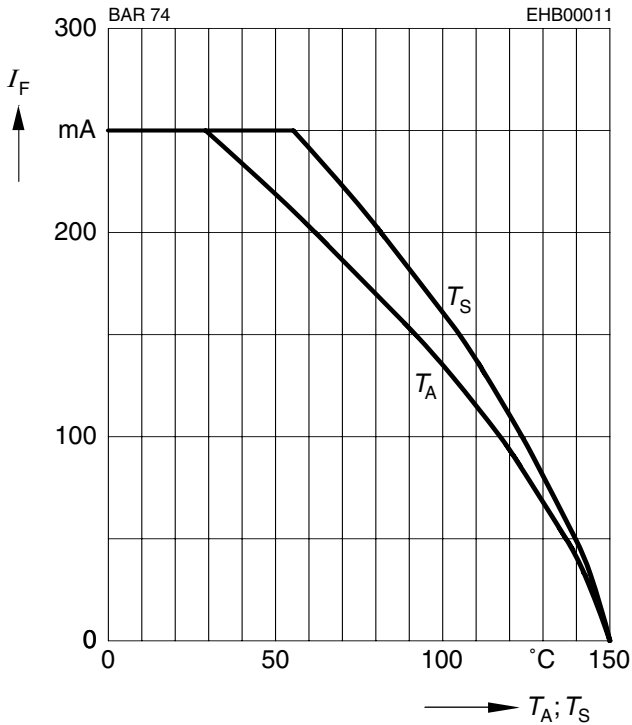


Pulse generator: $t_p = 100\text{ns}$, $D = 0.05$,
 $t_r = 0.6\text{ns}$, $R_i = 50\Omega$

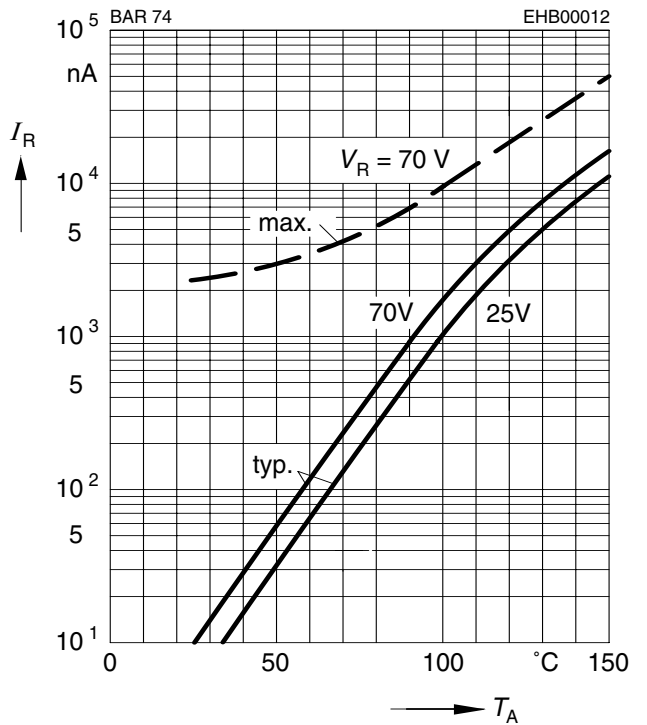
Oscilloscope: $R = 50\Omega$, $t_r = 0.35\text{ns}$,
 $C \leq 1\text{pF}$

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

* Package mounted on epoxy

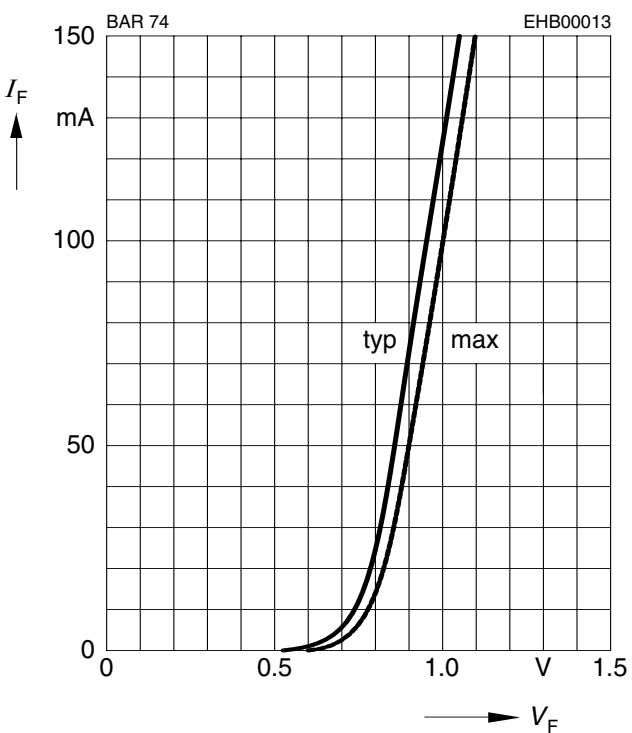


Reverse current $I_R = f(T_A)$



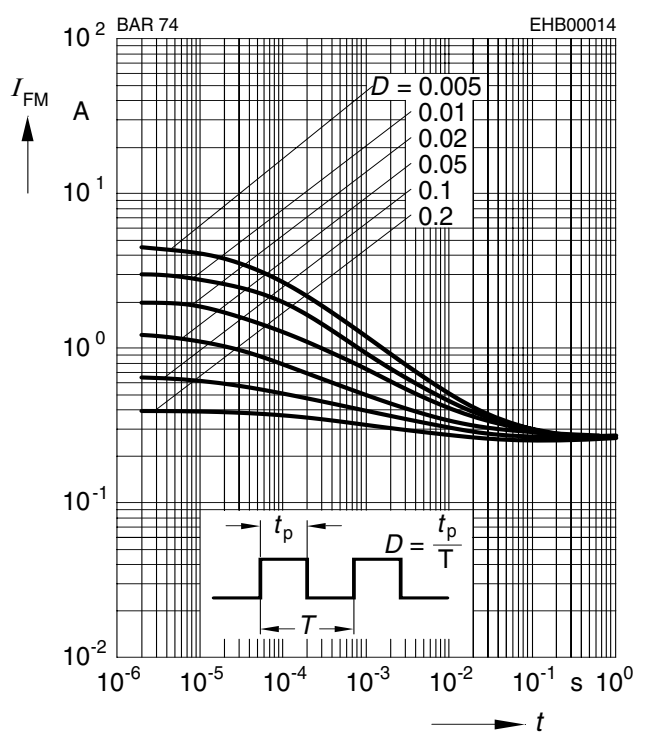
Forward current $I_F = f(V_F)$

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



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

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



Forward voltage $V_F = f(T_A)$

