## Silicon Low Leakage Diode Array

- Low-leakage applications

- Medium speed switching times
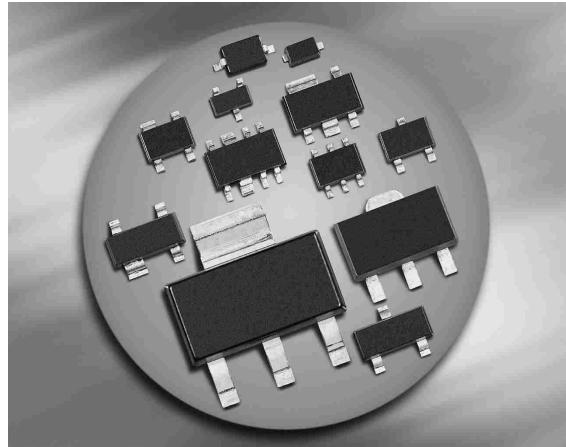


**BAV170**
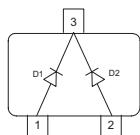


| Type | Package | Configuration | Marking |
|------|---------|---------------|---------|
| BAV170 | SOT23 | common cathode | JXs |

**Maximum Ratings** at $T_A$ = 25°C, unless otherwise specified

| Parameter | Symbol | Value | Unit |
|-----------|--------|-------|------|
| Diode reverse voltage | $V_R$ | 80 | V |
| Peak reverse voltage | $V_{RM}$ | 85 | |
| Forward current | $I_F$ | 200 | mA |
| Non-repetitive peak surge forward current | $I_{FSM}$ | | A |
| $t$ = 1 µs | | 4.5 | |
| $t$ = 1 s | | 0.5 | |
| Total power dissipation<br>$T_S \leq 35°C$ | $P_{tot}$ | 250 | mW |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | -65 ... 150 | |

**Thermal Resistance**

| Parameter | Symbol | Value | Unit |
|-----------|--------|-------|------|
| Junction - soldering point[1]<br>BAV170 | $R_{thJS}$ | $\leq$ 460 | K/W |

[1]For calculation of $R_{thJA}$ please refer to Application Note Thermal Resistance

**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 | $V_{(BR)}$ | 85 | - | - | V |
| Reverse current $V_R$ = 75 V $V_R$ = 75 V, $T_A$ = 150 °C | $I_R$ | - - | - - | 5 80 | nA |
| Forward voltage $I_F$ = 1 mA $I_F$ = 10 mA $I_F$ = 50 mA $I_F$ = 150 mA | $V_F$ | - - - - | - - - - | 900 1000 1100 1250 | mV |
| **AC Characteristics** | | | | | |
| Diode capacitance $V_R$ = 0 V, $f$ = 1 MHz | $C_T$ | - | 2 | - | pF |
| Reverse recovery time $I_F$ = 10 mA, $I_R$ = 10 mA, measured at $I_R$ = 1mA, $R_L$ = 100 $\Omega$ | $t_{rr}$ | - | 0.6 | 1.5 | µs |

**Test circuit for reverse recovery time**



D.U.T.

Oscillograph

$I_F$

EHN00019
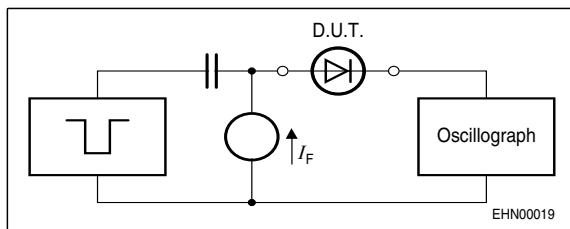
Pulse generator: $t_p$ = 10µs, $D$ = 0.05, $t_r$ = 0.6ns, $R_i$ = 50$\Omega$

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

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

$V_R = 70V$
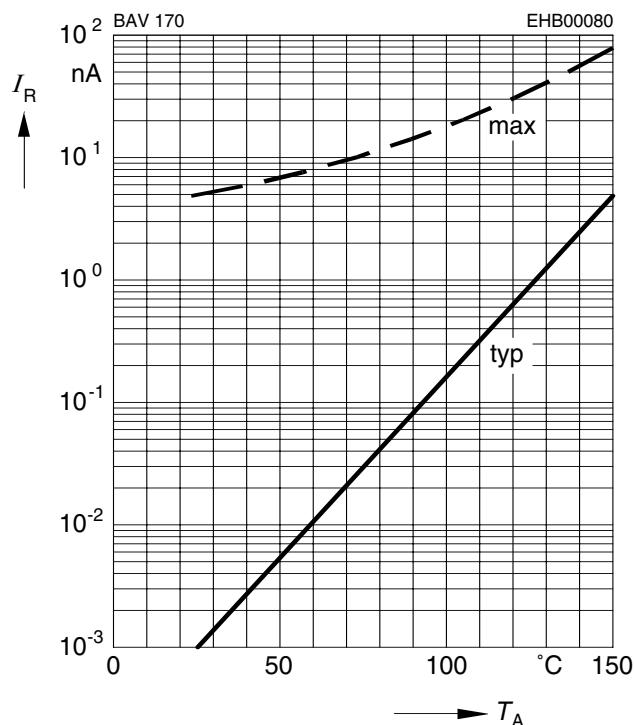


**Forward Voltage** $V_F = f(T_A)$

$I_F$ = Parameter
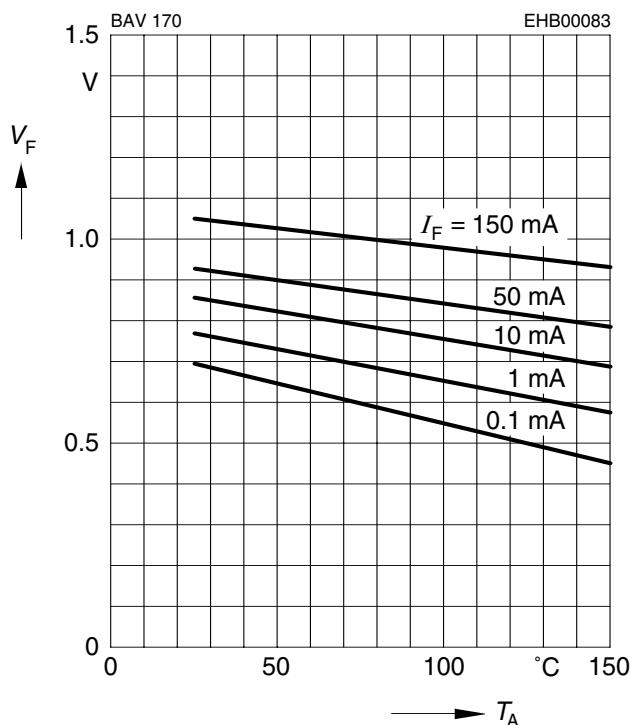


**Forward current** $I_F = f(V_F)$

$T_A = 25°C$
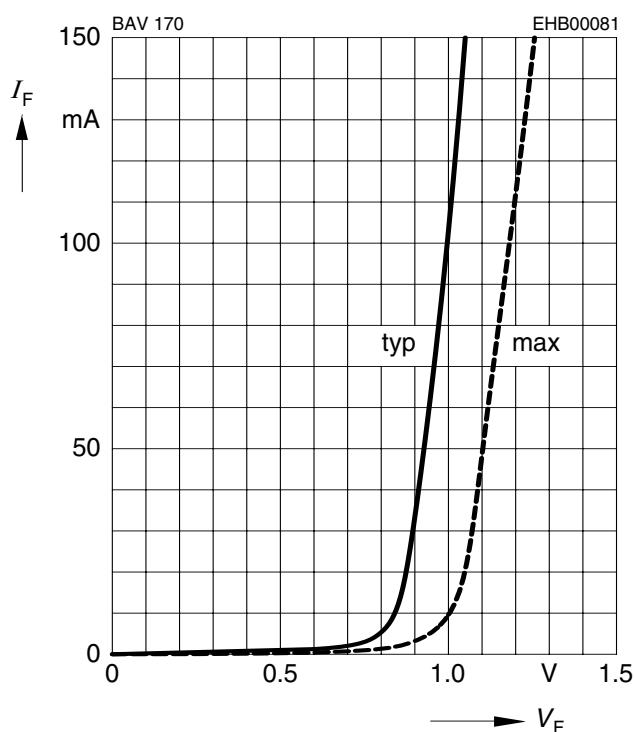


**Forward current** $I_F = f(T_S)$

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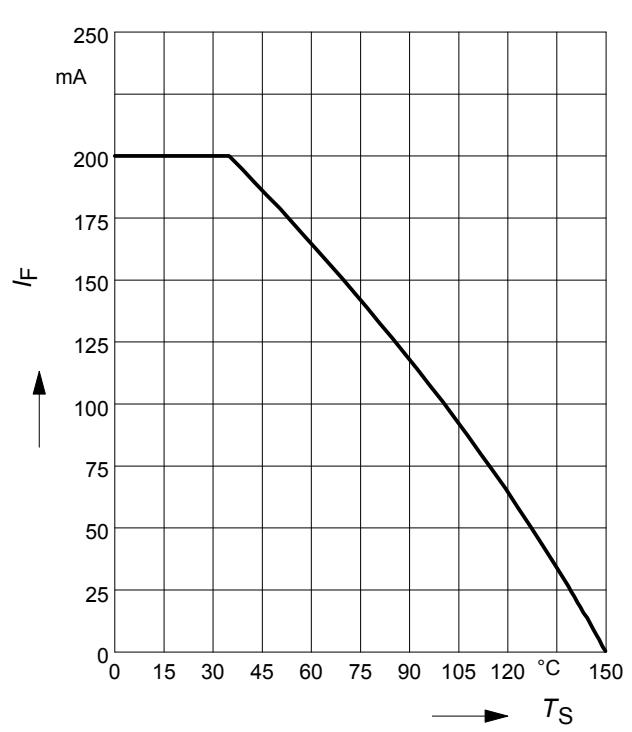
**Permissible Puls Load** $R_{thJS} = f(t_p)$
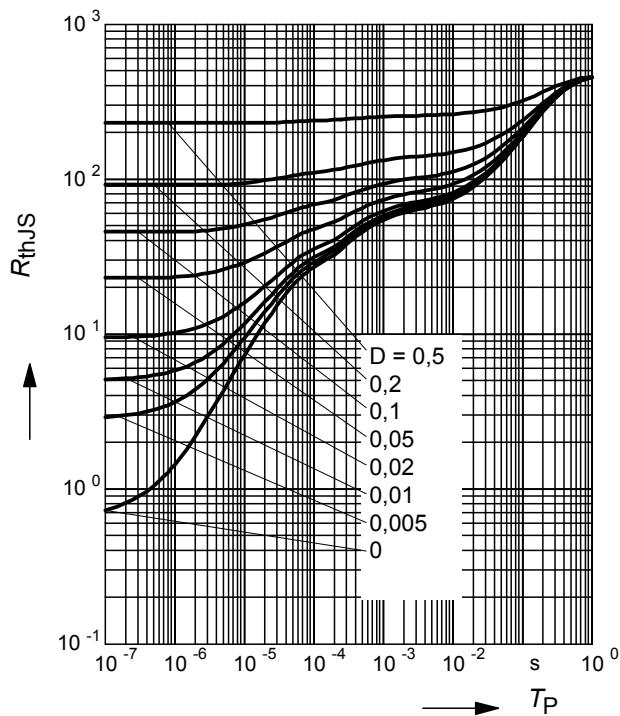
**Permissible Pulse Load**

$I_{Fmax}/I_{FDC} = f(t_p)$



D = 0,5
0,2
0,1
0,05
0,02
0,01
0,005
0

$R_{thJS}$

$T_P$



D = 0
0.005
0.01
0.02
0.05
0.1
0.2
0.5

$I_{Fmax}/I_{FDC}$

$T_P$

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