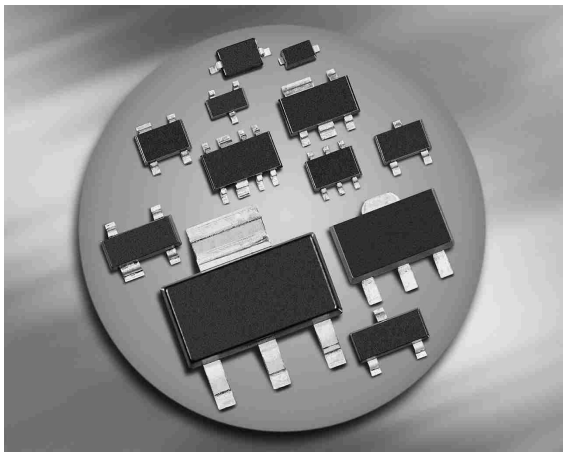
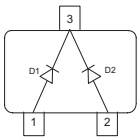
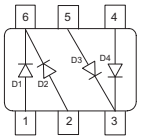
**Silicon Switching Diode**

- For high-speed switching applications
- Common cathode configuration



**BAV70** **BAV70S**
**BAV70L3** **BAV70U**
**BAV70T**
**BAV70W**




| Type | Package | Configuration | Marking |
|---|---|---|---|
| BAV70 | SOT23 | common cathode | A4s |
| BAV70L3 ** | TSLP-3-1 | common cathode, leadless | A4 |
| BAV70S | SOT363 | double common cathode | A4s |
| BAV70T | SC75 | common cathode | A4s |
| BAV70U | SC74 | double common cathode | A4s |
| BAV70W | SOT323 | common cathode | A4s |

** Target Data

**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 |
| Surge forward current, $t$ = 1 µs | $I_{FS}$ | 4.5 | A |
| Total power dissipation | $P_{tot}$ | | mW |
| BAV70, $T_S \leq$ 35°C | | 250 | |
| BAV70L3, $T_S \leq$ tbd | | 250 | |
| BAV70S, $T_S \leq$ 85°C | | 250 | |
| BAV70T, $T_S \leq$ 73°C | | 250 | |
| BAV70U, $T_S \leq$ 90°C | | 250 | |
| BAV70W, $T_S \leq$ 103°C | | 250 | |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | -65 ... 150 | |

**Thermal Resistance**

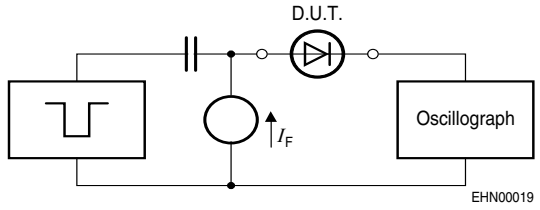
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Junction - soldering point[1)] | $R_{thJS}$ | | K/W |
| BAV70 | | ≤ 460 | |
| BAV70L3 | | ≤ tbd | |
| BAV70S | | ≤ 260 | |
| BAV70T | | ≤ 310 | |
| BAV70U | | ≤ 240 | |
| BAV70W | | ≤ 190 | |

[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<br>$I_{(BR)}$ = 100 µA | $V_{(BR)}$ | 85 | - | - | V |
| Reverse current | $I_R$ | | | | µA |
| $V_R$ = 70 V | | - | - | 0.15 | |
| $V_R$ = 25 V, $T_A$ = 150 °C | | - | - | 30 | |
| $V_R$ = 70 V, $T_A$ = 150 °C | | - | - | 50 | |
| Forward voltage | $V_F$ | | | | mV |
| $I_F$ = 1 mA | | - | - | 715 | |
| $I_F$ = 10 mA | | - | - | 855 | |
| $I_F$ = 50 mA | | - | - | 1000 | |
| $I_F$ = 100 mA | | - | - | 1200 | |
| $I_F$ = 150 mA | | - | - | 1250 | |
| **AC Characteristics** | | | | | |
| Diode capacitance<br>$V_R$ = 0 V, $f$ = 1 MHz | $C_T$ | - | - | 1.5 | pF |
| Reverse recovery time<br>$I_F$ = 10 mA, $I_R$ = 10 mA, measured at $I_R$ = 1mA ,<br>$R_L$ = 100 Ω | $t_{rr}$ | - | - | 4 | ns |

**Test circuit for reverse recovery time**

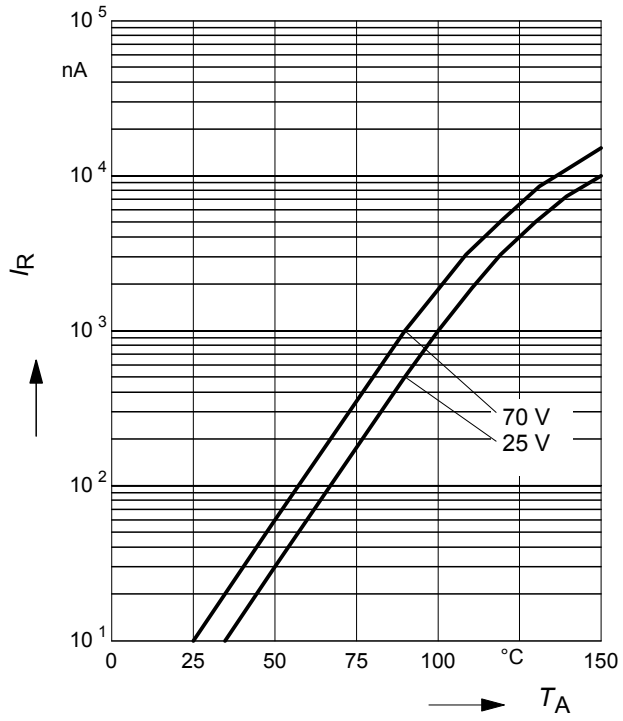



Pulse generator: $t_p$ = 100ns, $D$ = 0.05, $t_r$ = 0.6ns, $R_i$ = 50Ω

Oscillograph: $R$ = 50Ω, $t_r$ = 0.35ns, $C$ = 0.05pF

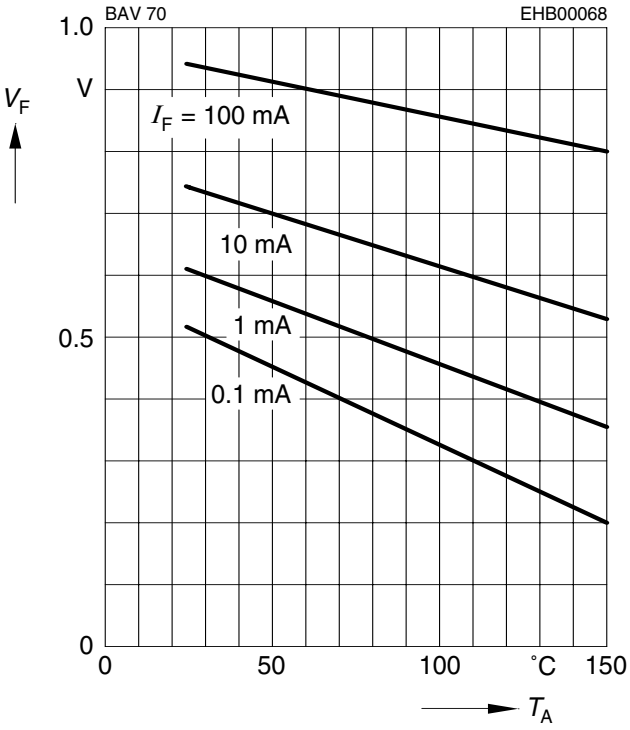
**Reverse current** $I_R = f(T_A)$

$V_R$ = Parameter



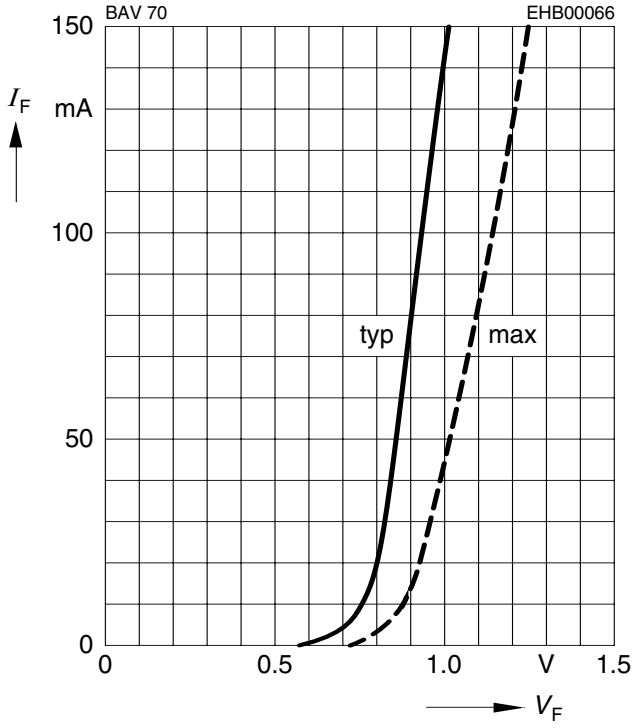

**Forward Voltage** $V_F = f(T_A)$

$I_F$ = Parameter




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

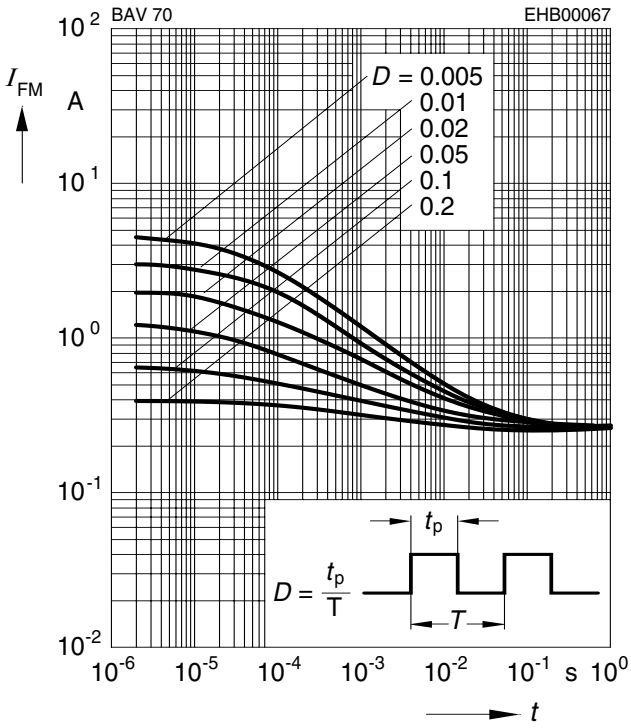
$T_A$ = 25°C




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

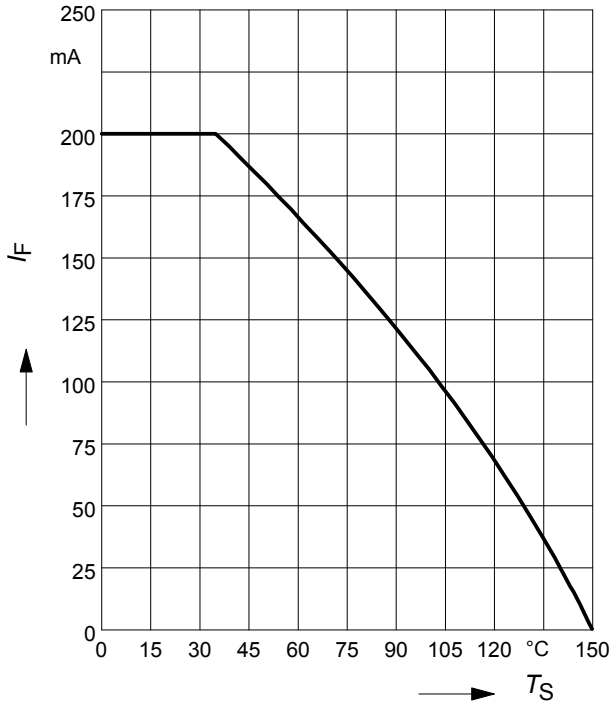
$T_A$ = 25°C

BAV70



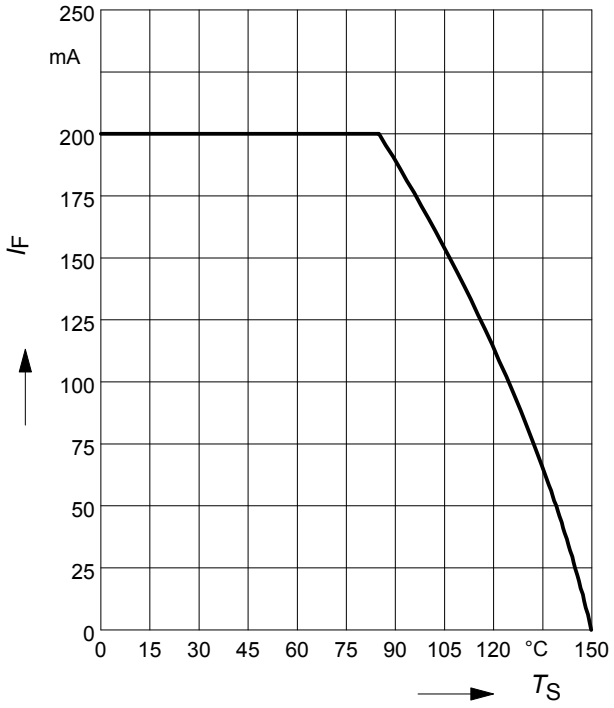
**Forward current** $I_F = f(T_S)$

BAV70



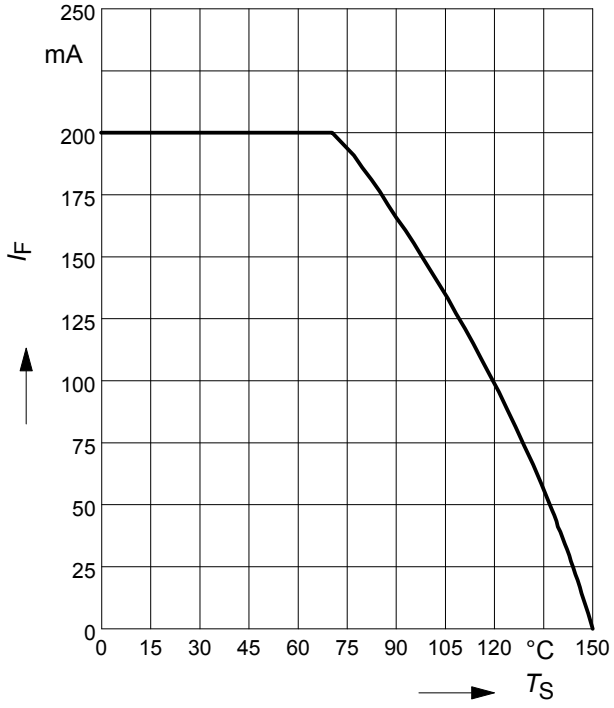

**Forward current** $I_F = f(T_S)$

BAV70S



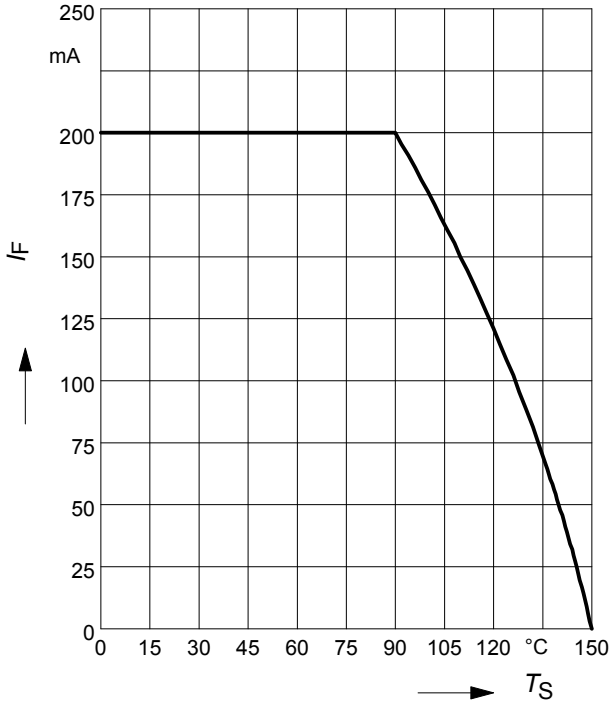

**Forward current** $I_F = f(T_S)$

BAV70T



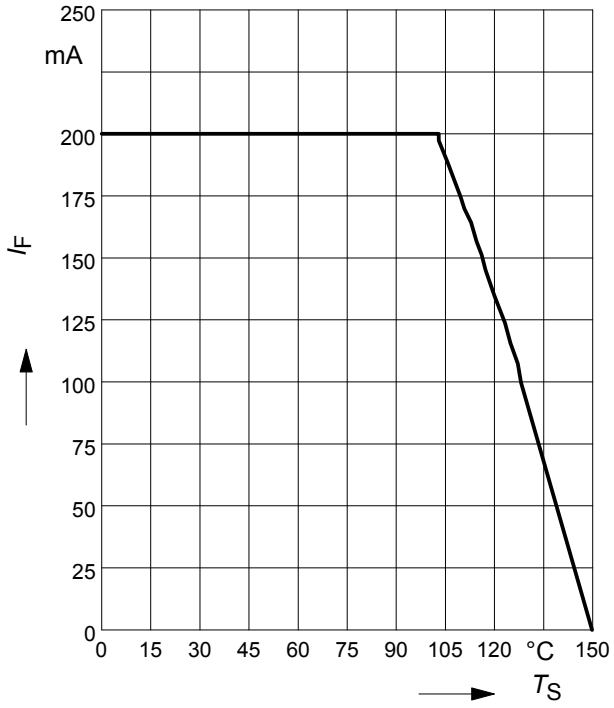

**Forward current** $I_F = f(T_S)$

BAV70U



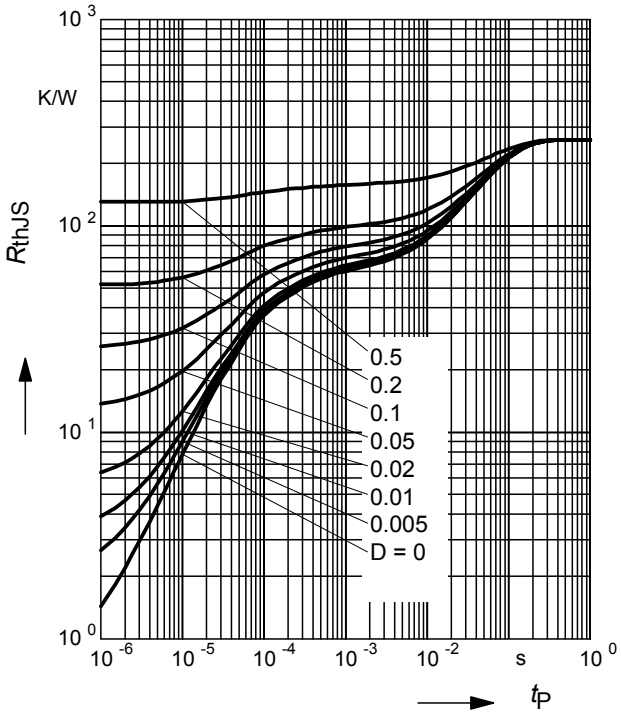
**Forward current** $I_F = f(T_S)$

BAV70W




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

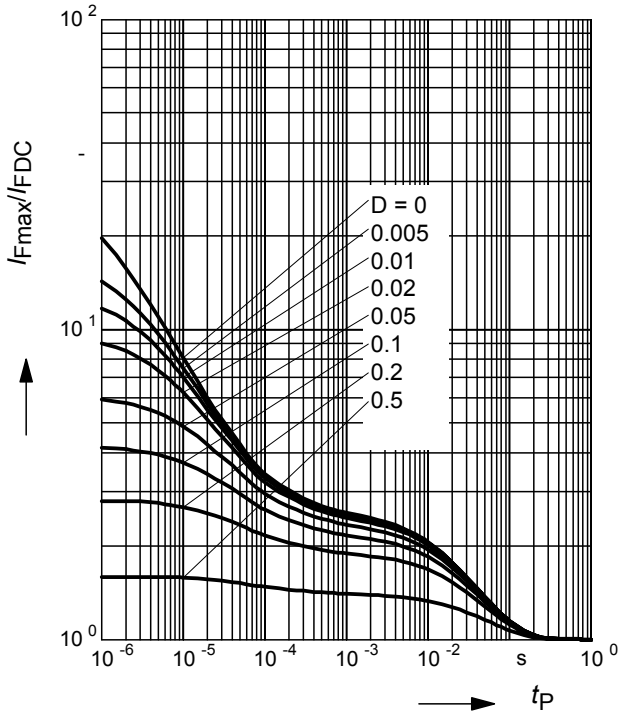
BAV70S




**Permissible Pulse Load**

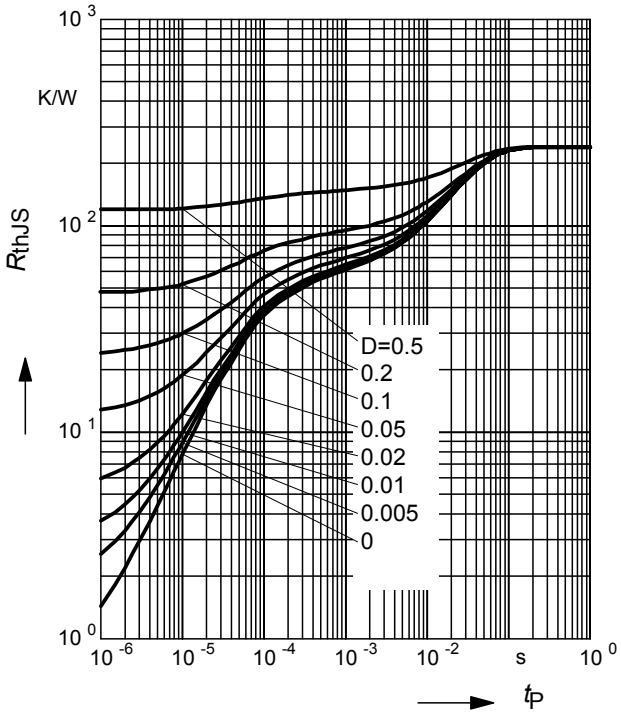
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAV70S




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

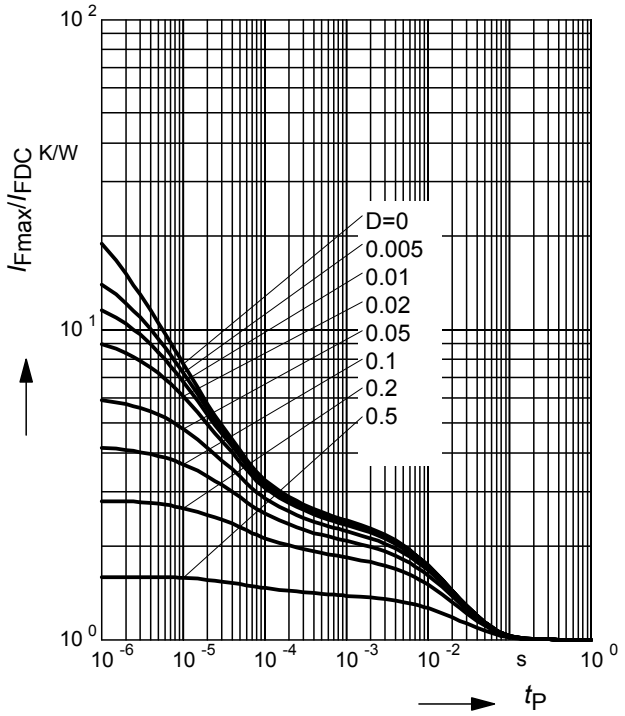
BAV70U



**Permissible Pulse Load**

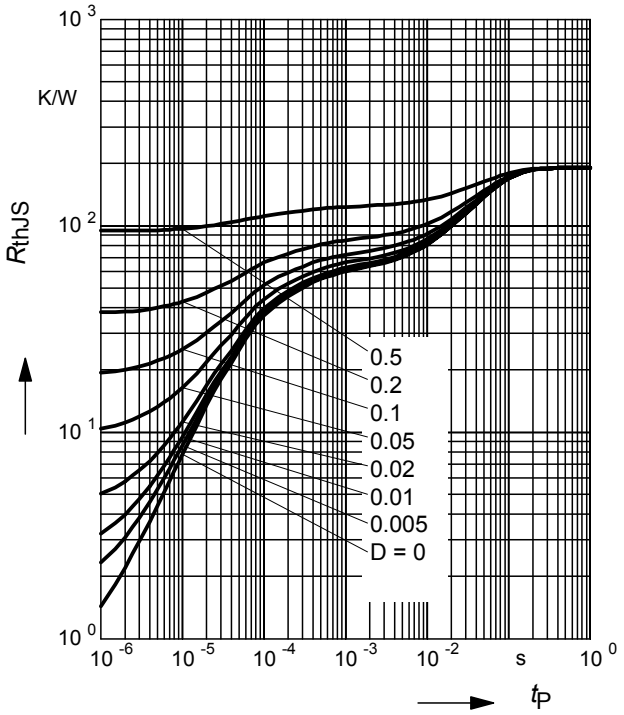
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAV70U




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

BAV70W




**Permissible Pulse Load**

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

BAV70W