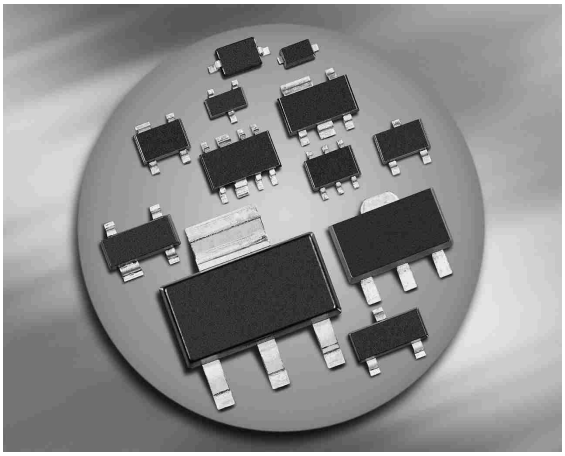
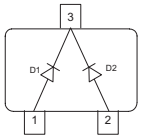
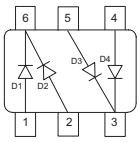
Silicon Switching Diode

- For high-speed switching applications
- Common cathode configuration



BAV70 **BAV70S**
BAV70F **BAV70U**
BAV70L3
BAV70T
BAV70W





Type	Package	Configuration	Marking
BAV70	SOT23	common cathode	A4s
BAV70F*	TSFP-3	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

* Preliminary Data
** 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
Non-repetitive peak surge forward current	I_{FSM}		A
t = 1 µs		4.5	
t = 1 ms		1	
t = 1 s single		0.5	
t = 1 s double		0.75	
Total power dissipation	P_{tot}		mW
BAV70, $T_S \leq$ 33°C		250	
BAV70F, $T_S \leq$ tbd		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

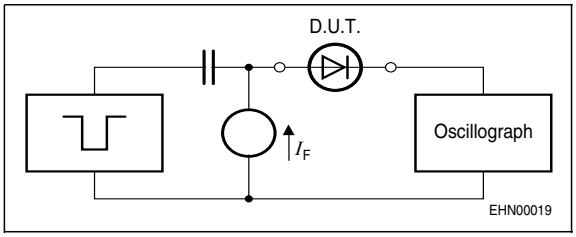
Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BAV70		≤ 460	
BAV70F		≤ tbd	
BAV70L3		≤ tbd	
BAV70S		≤ 260	
BAV70T		≤ 310	
BAV70U		≤ 240	
BAV70W		≤ 190	

[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 $I_{(BR)}$ = 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 V_R = 0 V, f = 1 MHz	C_T	-	-	1.5	pF
Reverse recovery time I_F = 10 mA, I_R = 10 mA, measured at I_R = 1mA , R_L = 100 Ω	t_{rr}	-	-	4	ns

Test circuit for reverse recovery time

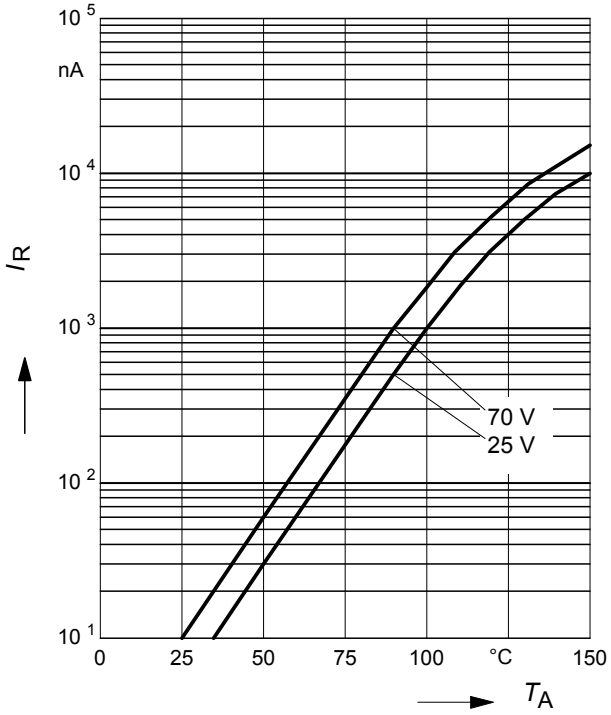


Pulse generator: t_p = 100ns, D = 0.05, t_r = 0.6ns, R_i = 50Ω

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

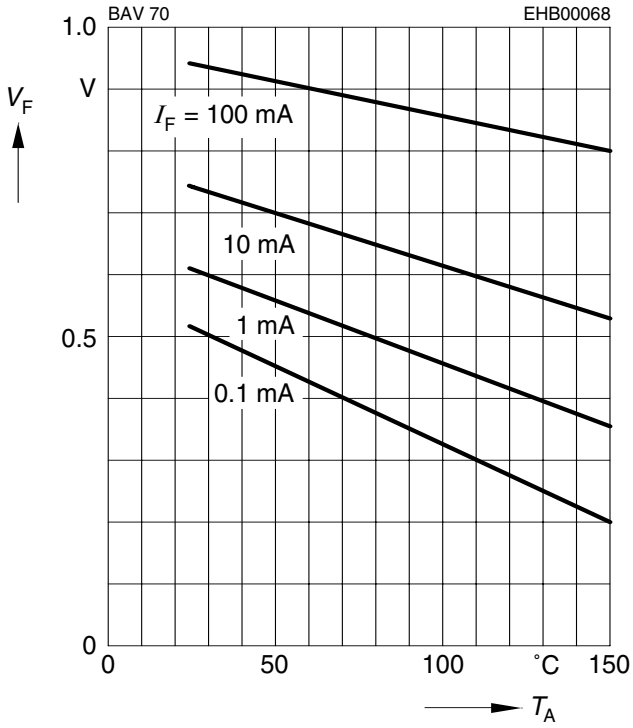
Reverse current $I_R = f(T_A)$

V_R = Parameter



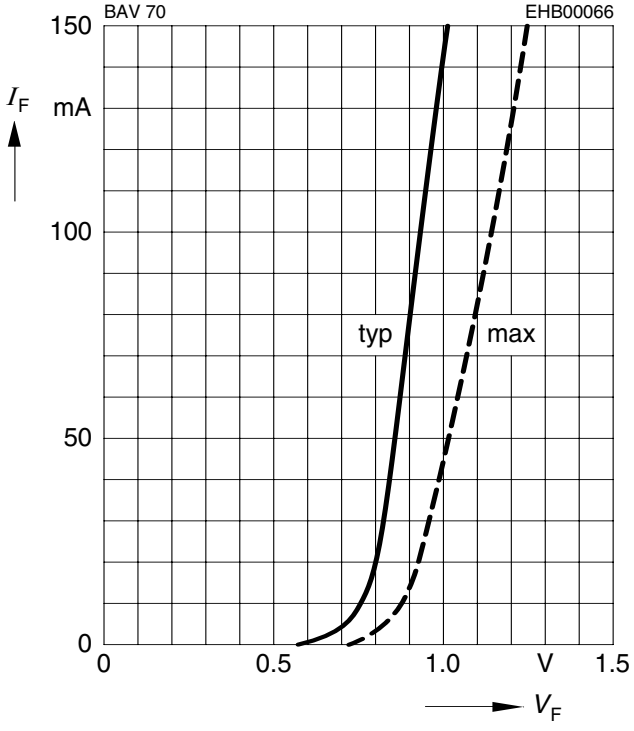
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



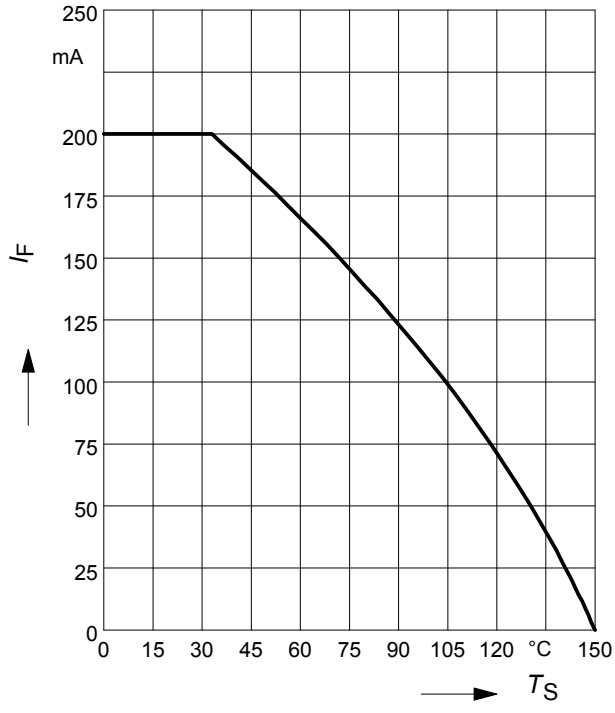
Forward current $I_F = f(V_F)$

T_A = 25°C

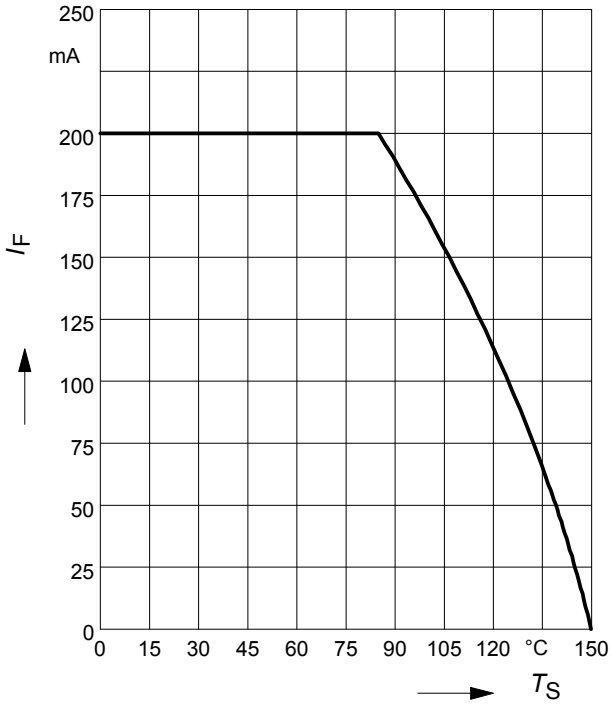


Forward current $I_F = f(T_S)$

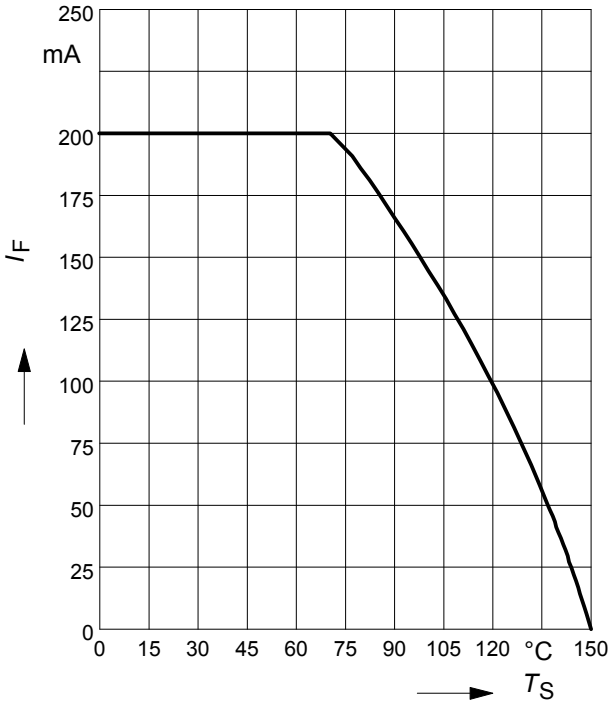
BAV70



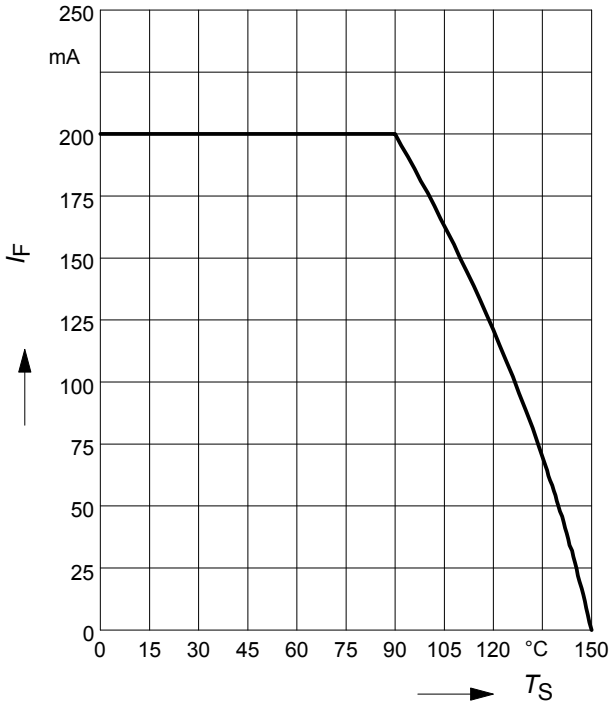
Forward current $I_F = f(T_S)$
BAV70S



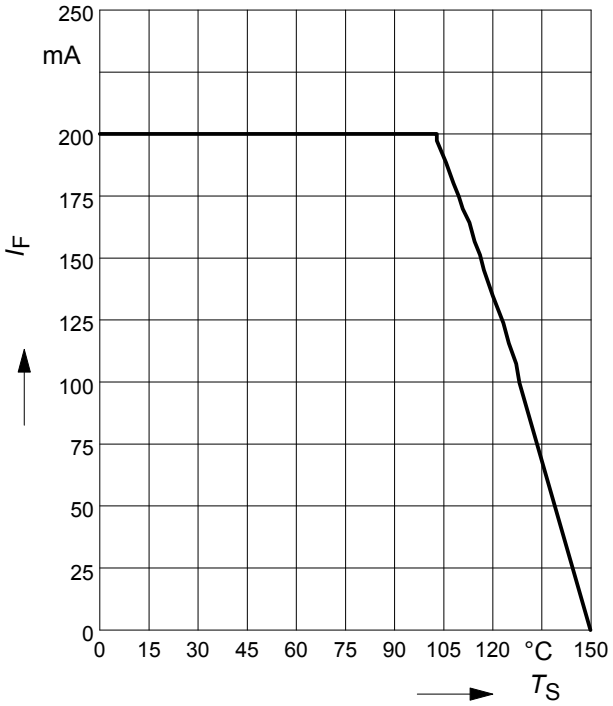
Forward current $I_F = f(T_S)$
BAV70T



Forward current $I_F = f(T_S)$
BAV70U

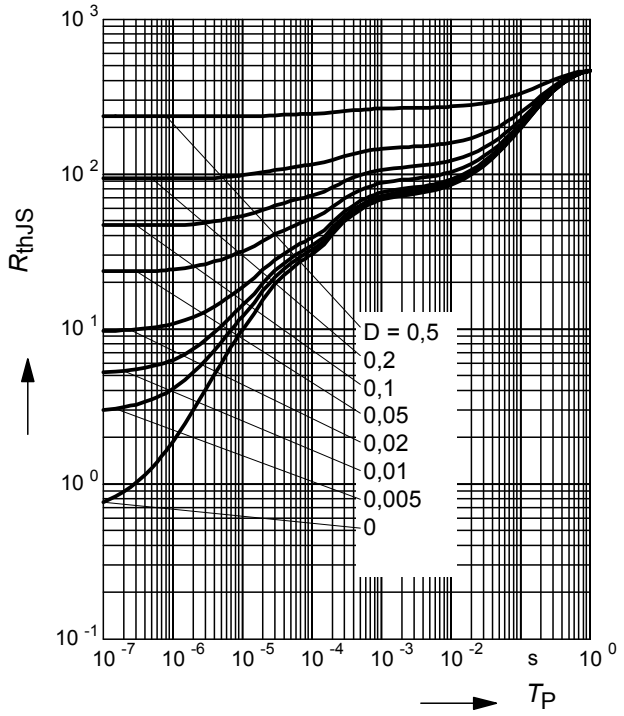


Forward current $I_F = f(T_S)$
BAV70W



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

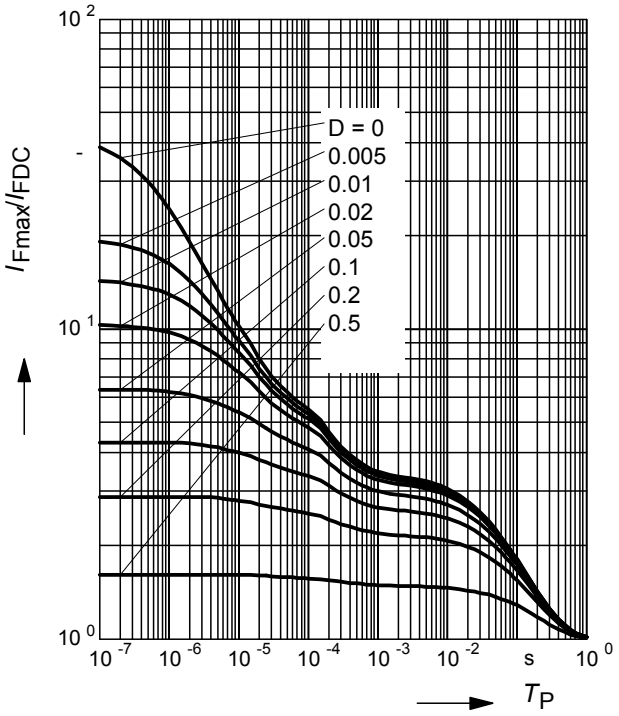
BAV70



Permissible Pulse Load

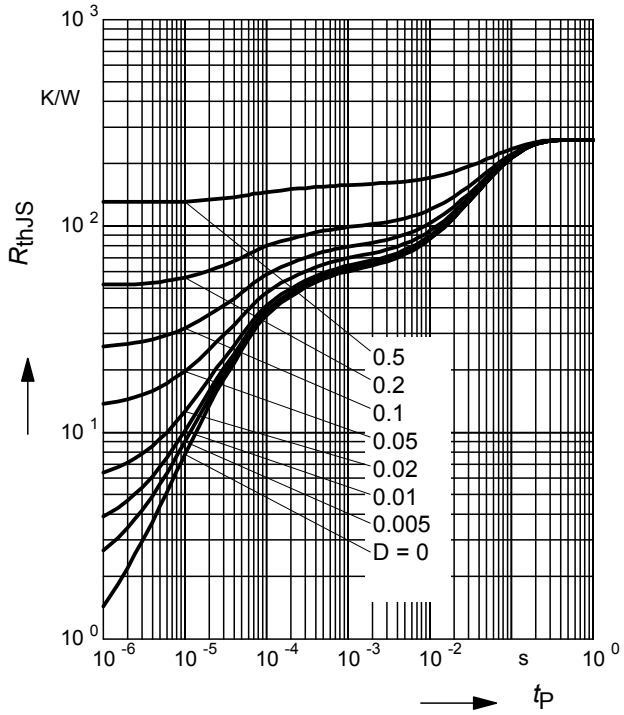
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAV70



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

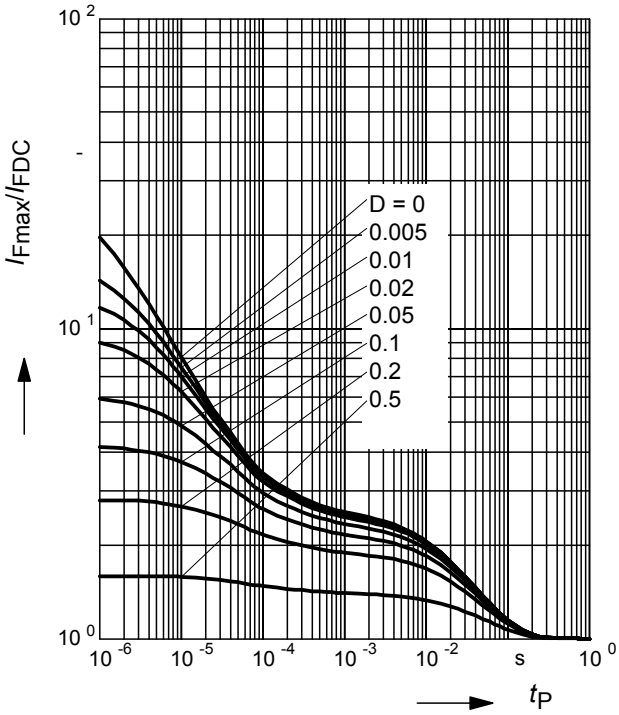
BAV70S



Permissible Pulse Load

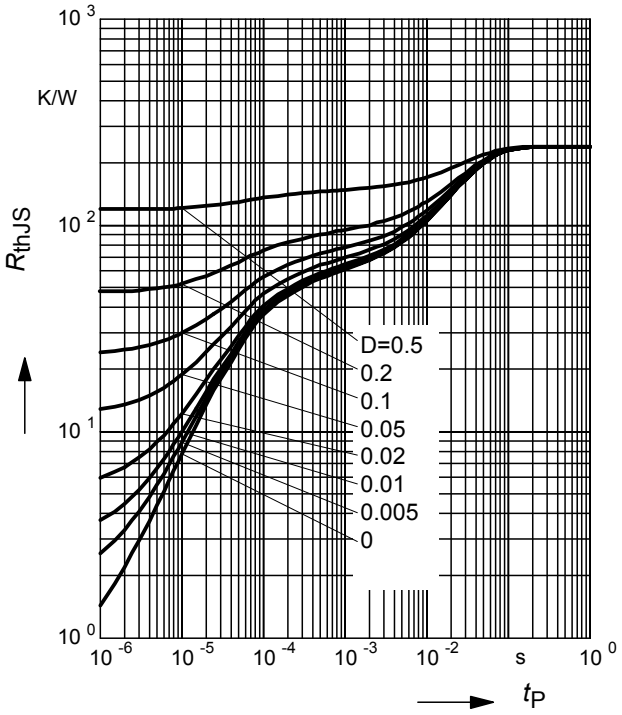
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAV70S



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

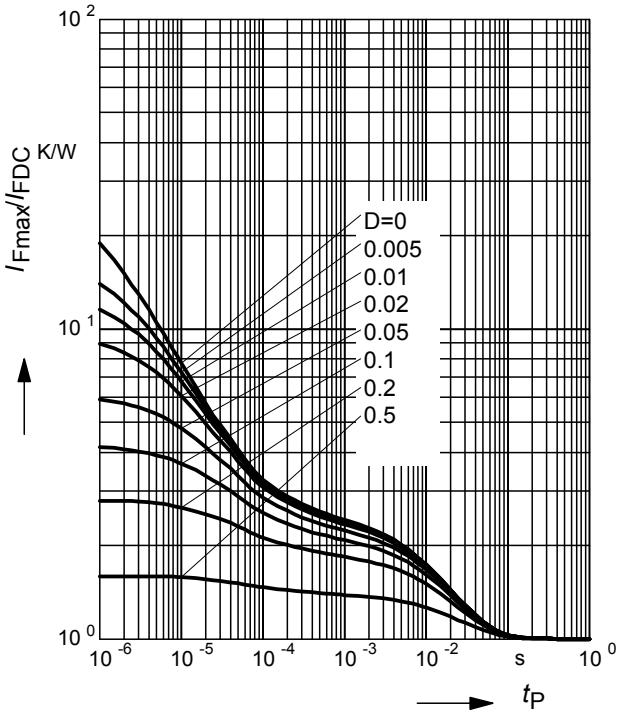
BAV70U



Permissible Pulse Load

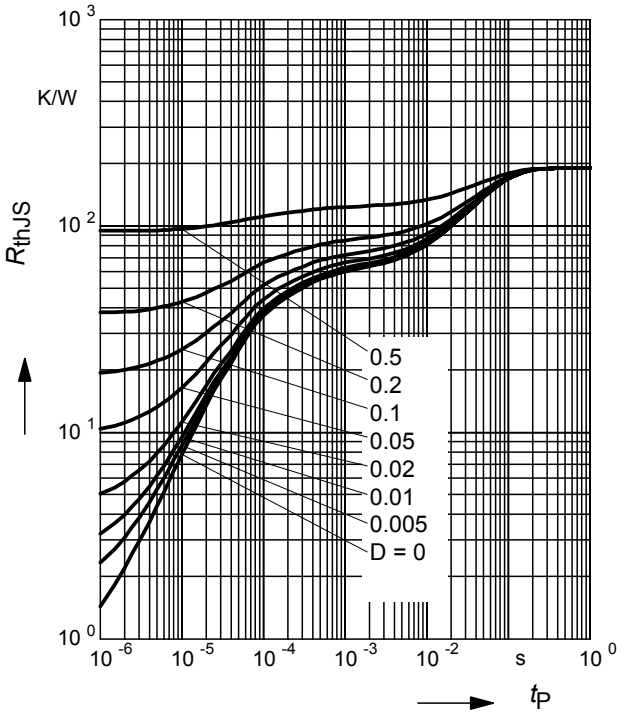
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAV70U



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

BAV70W



Permissible Pulse Load

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

BAV70W