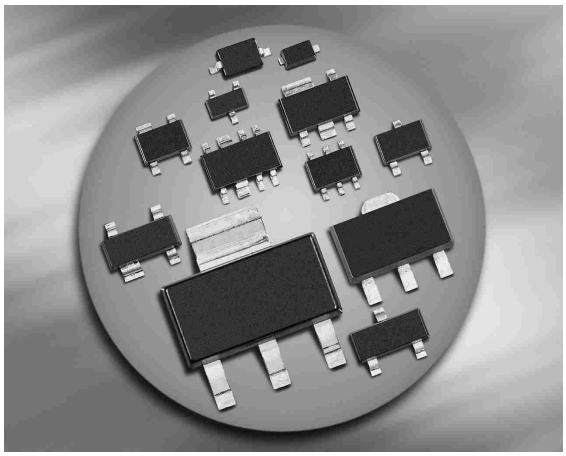
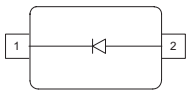
Silicon Schottky Diode

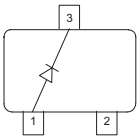
- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing



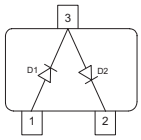
BAS170W
BAS70-02L
BAS70-02W



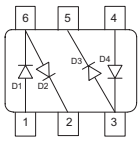
BAS70



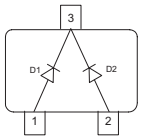
BAS70-04
BAS70-04T
BAS70-04W



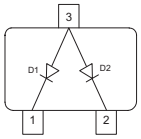
BAS70-04S



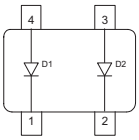
BAS70-05
BAS70-05W



BAS70-06
BAS70-06W



BAS70-07
BAS70-07W



Type	Package	Configuration	L_S(nH)	Marking
BAS170W	SOD323	single	1.8	7
BAS70	SOT23	single	1.8	73s
BAS70-02L*	TSLP-2-1	single, leadless	0.4	F
BAS70-02W	SCD80	single	0.6	73
BAS70-04	SOT23	series	1.8	74s
BAS70-04S	SOT363	dual series	1.6	74s
BAS70-04T	SC75	series	1.6	74s
BAS70-04W	SOT323	series	1.4	74s
BAS70-05	SOT23	common cathode	1.8	75s
BAS70-05W	SOT323	common cathode	1.4	75s
BAS70-06	SOT23	common anode	1.8	76s
BAS70-06W	SOT323	common anode	1.4	76s
BAS70-07	SOT143	parallel pair	2	77s
BAS70-07W	SOT343	parallel pair	1.8	77s

* Preliminary

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	70	V
Forward current	I_F	70	mA
Surge forward current $t \leq$ 10ms	I_{FSM}	100	
Total power dissipation	P_{tot}		mW
BAS70, BAS70-07, $T_S \leq$ 72 °C		250	
BAS70-02L, $T_S \leq$ 117 °C		250	
BAS70-02W, $T_S \leq$ 107 °C		250	
BAS70-04, BAS70-06, $T_S \leq$ 48 °C		250	
BAS70-04S/W/-06W, BAS170W, $T_S \leq$ 97 °C		250	
BAS70-04T, $T_S \leq$ 91 °C		250	
BAS70-05, $T_S \leq$ 22 °C		250	
BAS70-05W, $T_S \leq$ 90 °C		250	
BAS70-07W, $T_S \leq$ 114 °C		250	
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BAS70, BAS70-07		≤ 310	
BAS70-02L		≤ 130	
BAS70-02W		≤ 170	
BAS70-04, BAS70-06		≤ 410	
BAS70-04S/W, BAS70-06W		≤ 210	
BAS70-04T		≤ 235	
BAS70-05		≤ 510	
BAS70-05W		≤ 240	
BAS70-07W		≤ 145	
BAS170W		≤ 190	

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

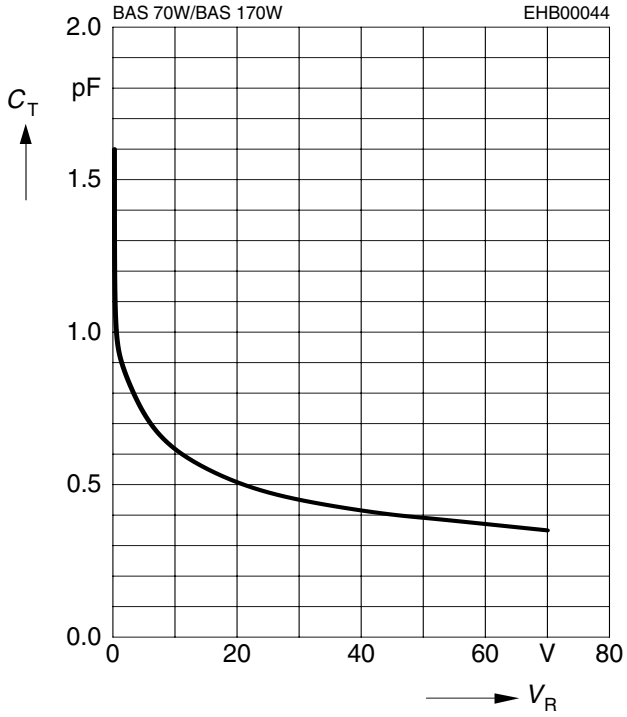
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 10 µA	$V_{(BR)}$	70	-	-	V
Reverse current V_R = 50 V	I_R	-	-	0.1	µA
Forward voltage	V_F				mV
I_F = 1 mA		300	375	410	
I_F = 10 mA		600	705	750	
I_F = 15 mA		750	880	1000	
Forward voltage matching[1)] I_F = 10 mA	ΔV_F	-	-	20	
AC Characteristics					
Diode capacitance V_R = 0 , f = 1 MHz	C_T	-	1.5	2	pF
Forward resistance I_F = 10 mA, f = 10 kHz	r_f	-	34	-	Ω
Charge carrier life time I_F = 25 mA	τ_{rr}	-	-	100	ps

[1] ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

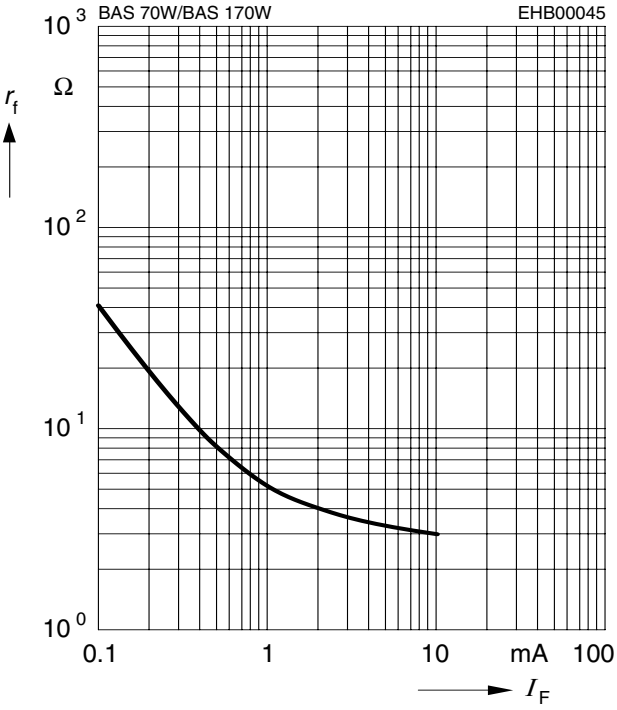
Diode capacitance $C_T = f(V_R)$

f = 1MHz



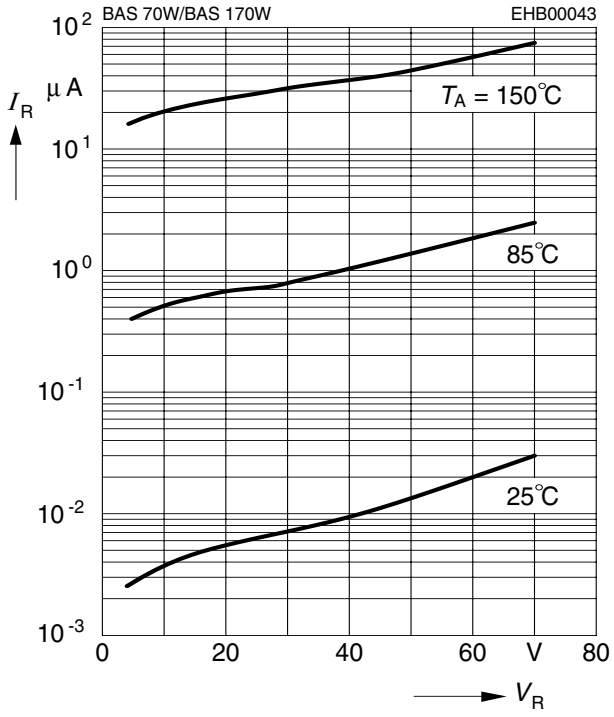
Forward resistance $r_f = f(I_F)$

f = 10 kHz



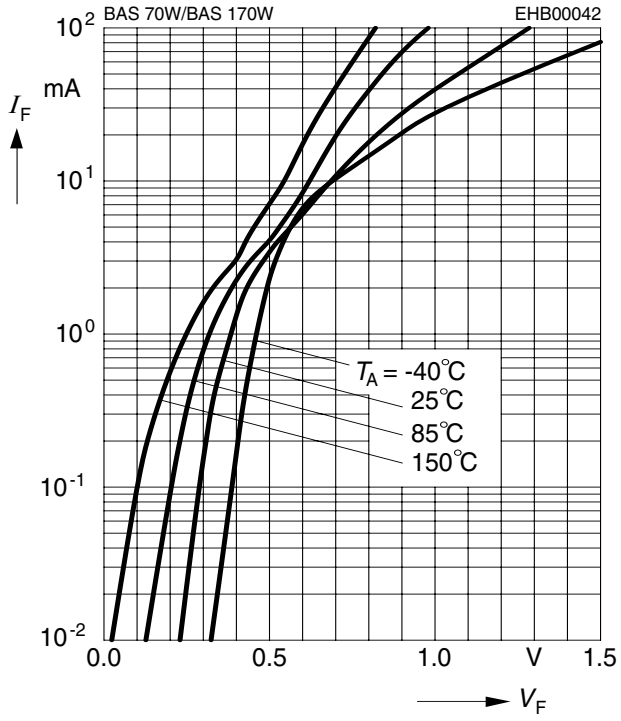
Reverse current $I_R = f(V_R)$

T_A = Parameter

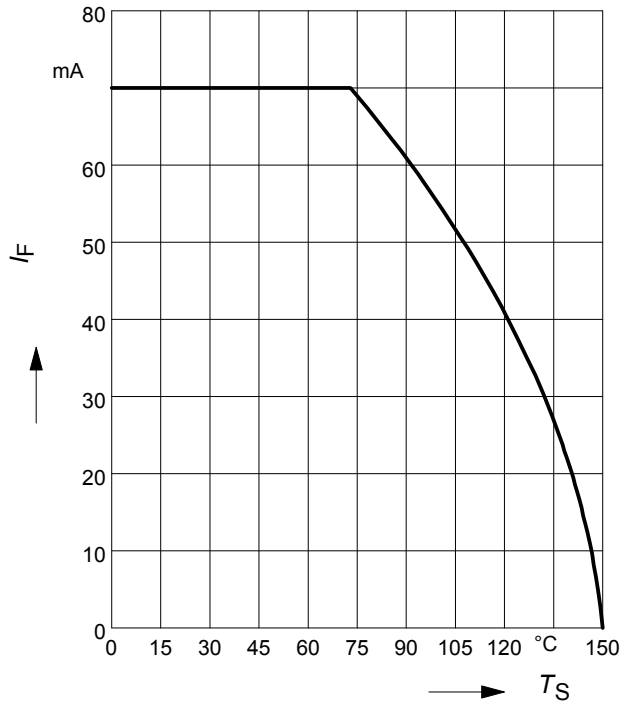


Forward current $I_F = f(V_F)$

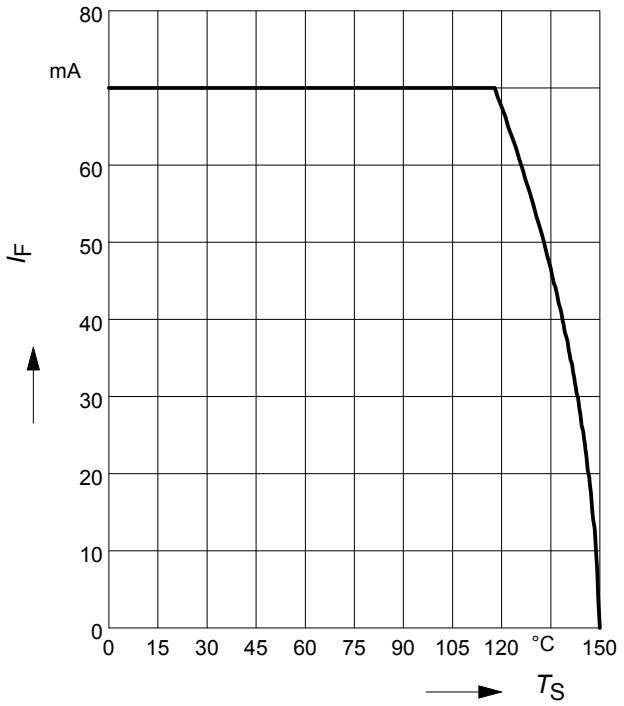
T_A = Parameter



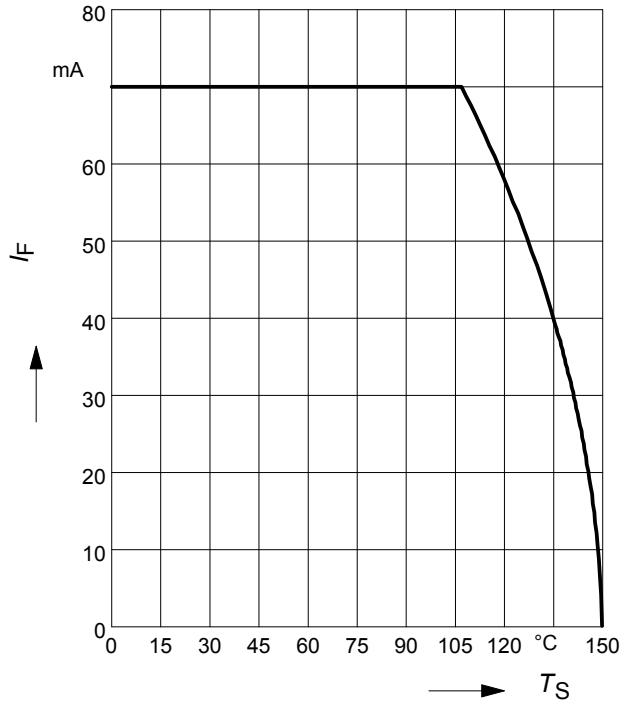
Forward current $I_F = f(T_S)$
BAS70, BAS70-07



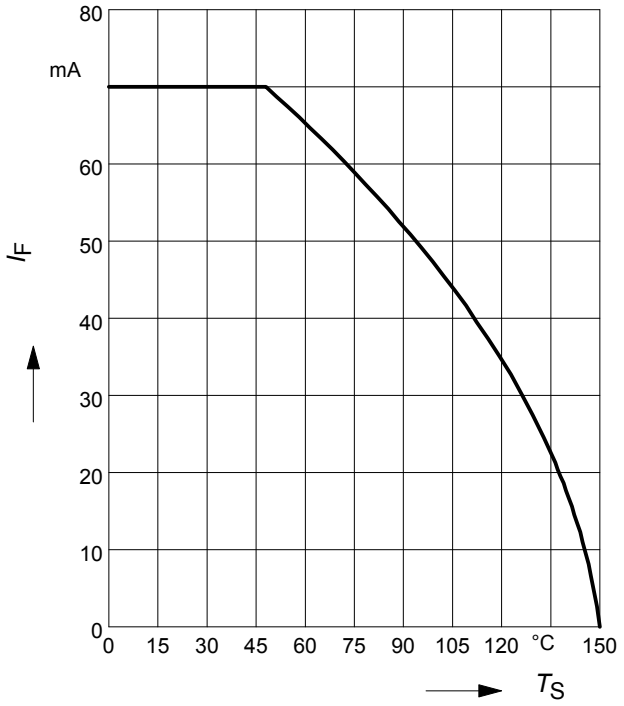
Forward current $I_F = f(T_S)$
BAS70-02L



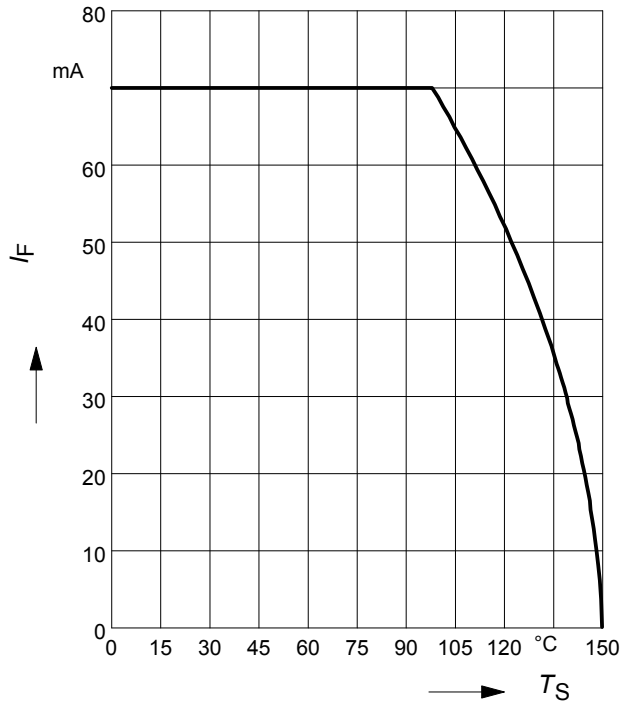
Forward current $I_F = f(T_S)$
BAS70-02W



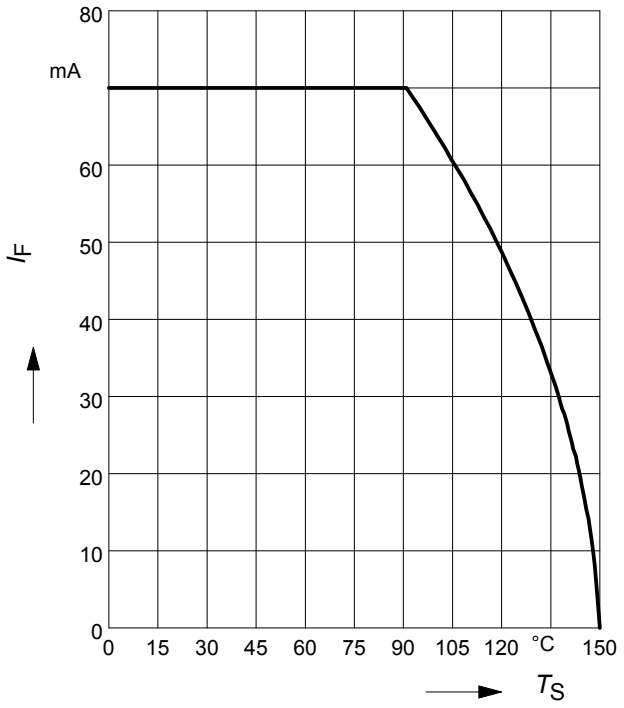
Forward current $I_F = f(T_S)$
BAS70-04, BAS70-06



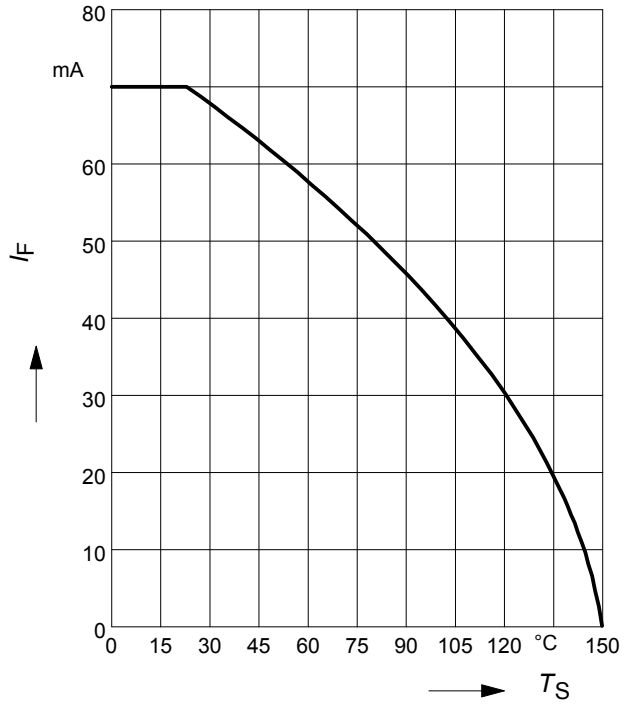
Forward current $I_F = f(T_S)$
BAS70-04S/W, BAS70-06W, BAS170W



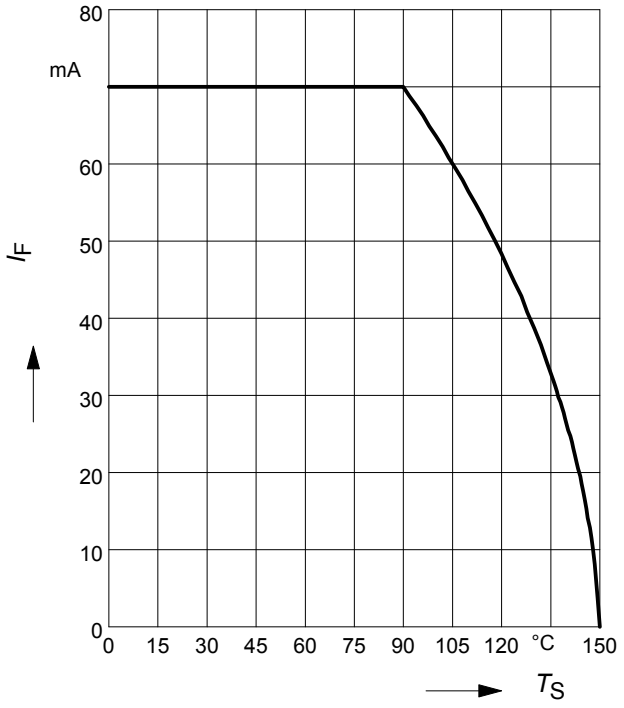
Forward current $I_F = f(T_S)$
BAS70-04T



Forward current $I_F = f(T_S)$
BAS70-05

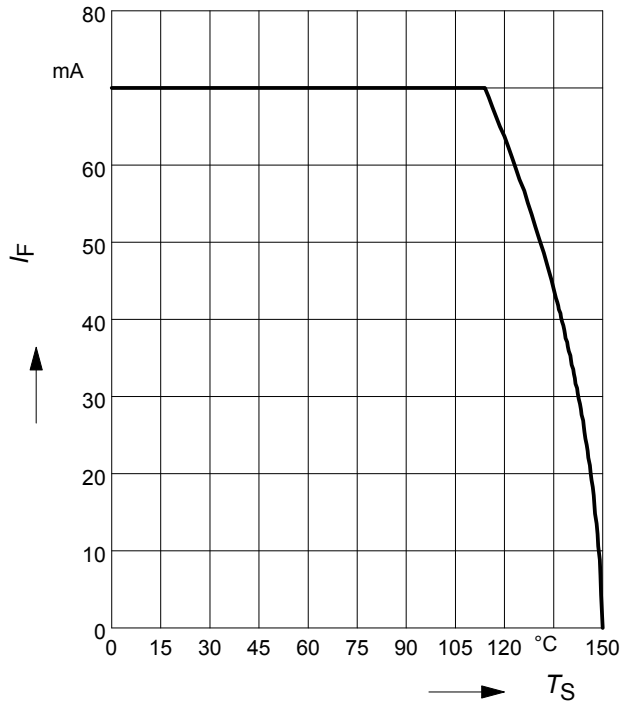


Forward current $I_F = f(T_S)$
BAS70-05W



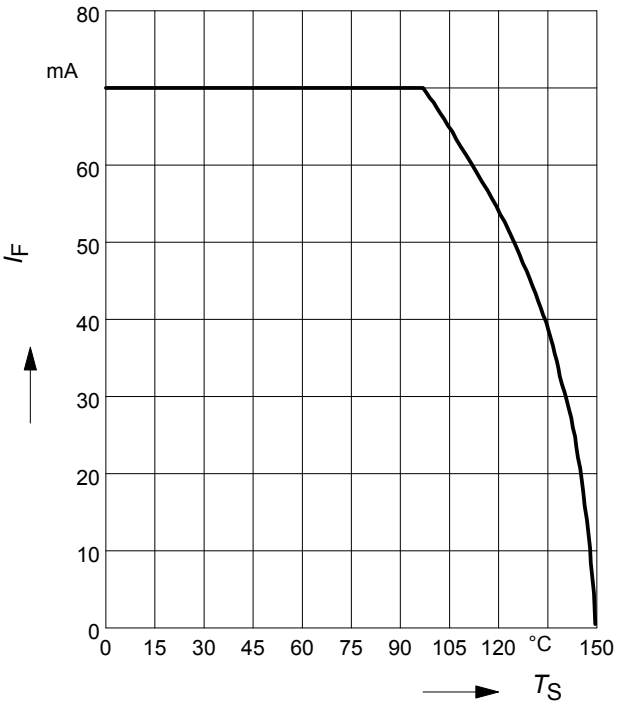
Forward current $I_F = f(T_S)$

BAS70-07W



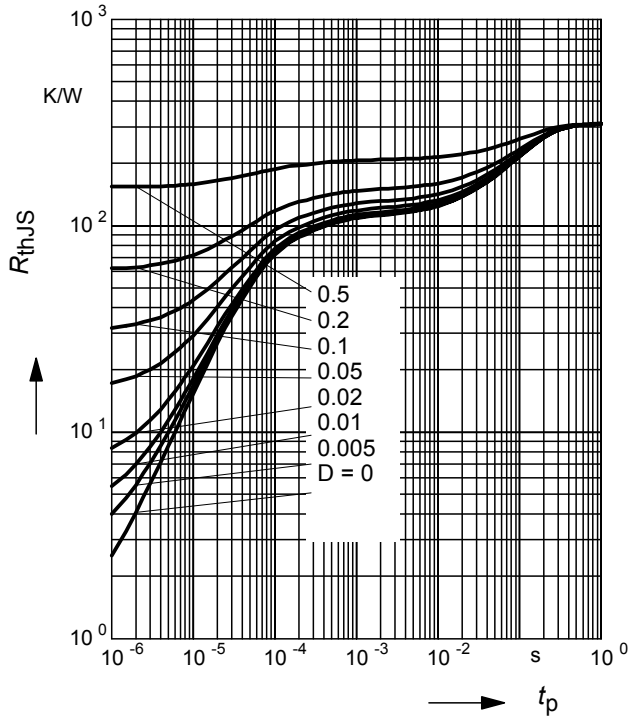
Forward current $I_F = f(T_S)$

BAS170W



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

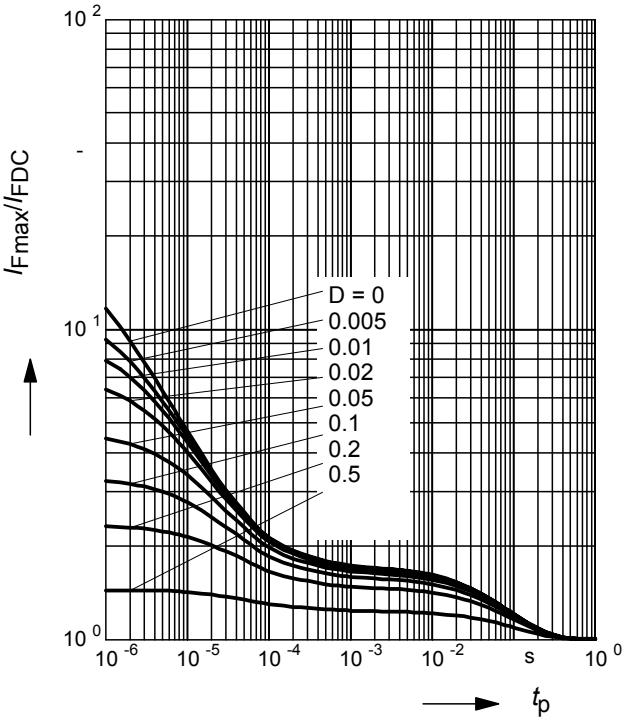
BAS70



Permissible Pulse Load

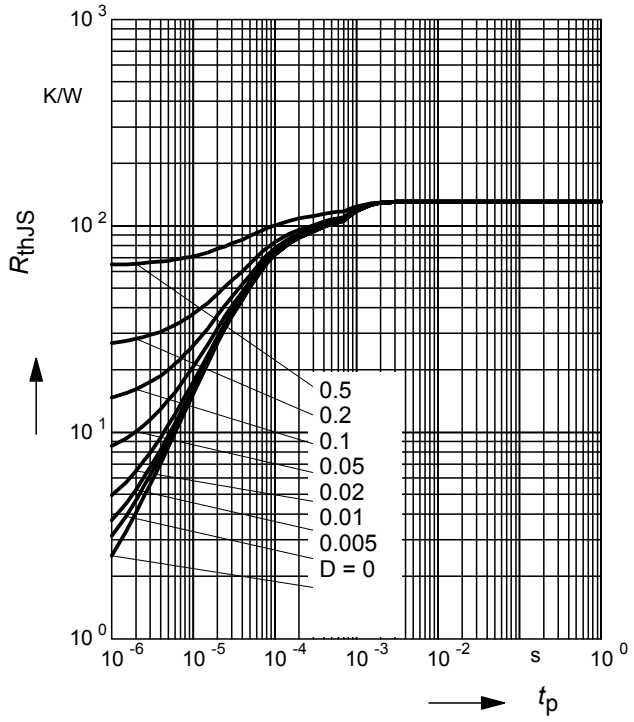
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70



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

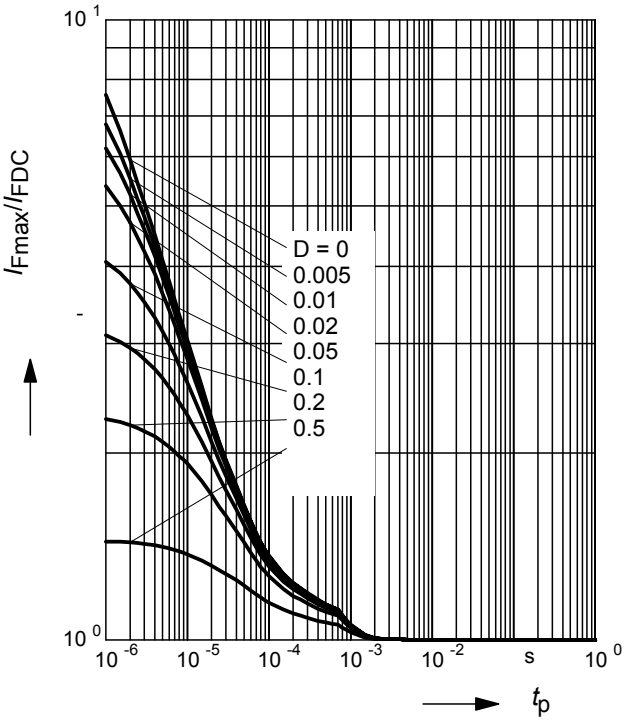
BAS70-02L



Permissible Pulse Load

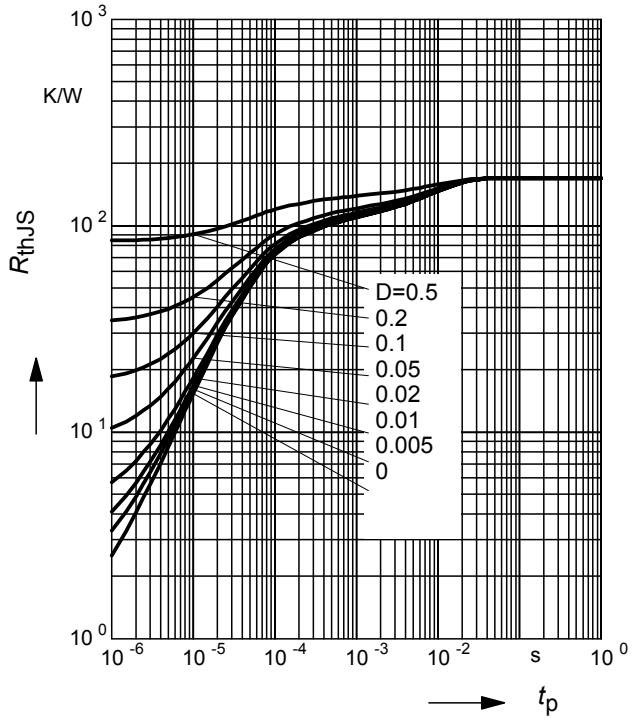
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS70-02L



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

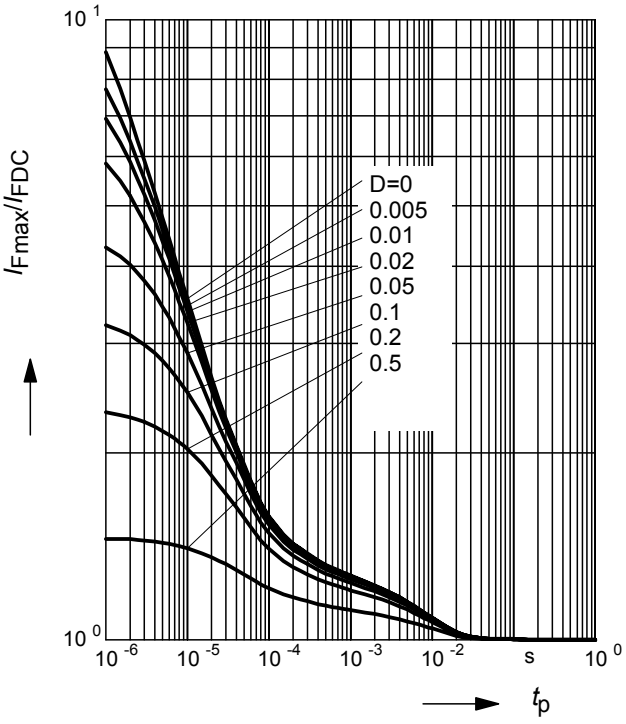
BAS70-02W



Permissible Pulse Load

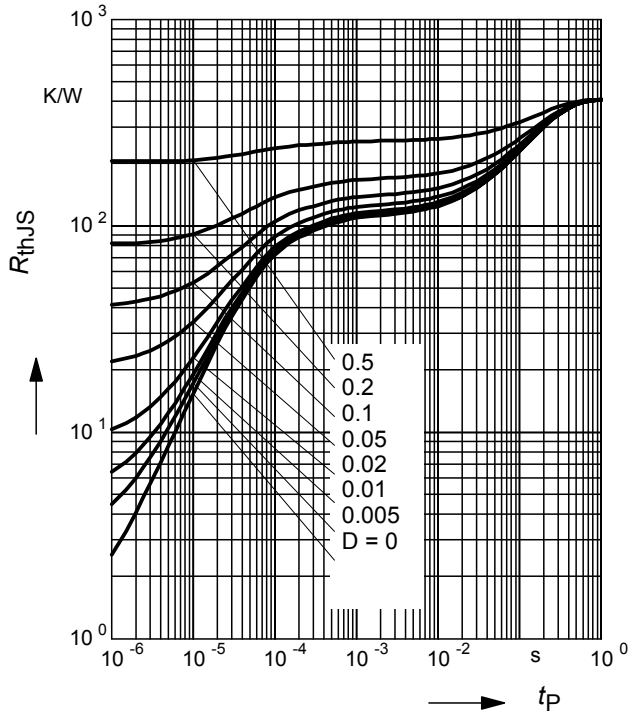
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS70-02W



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

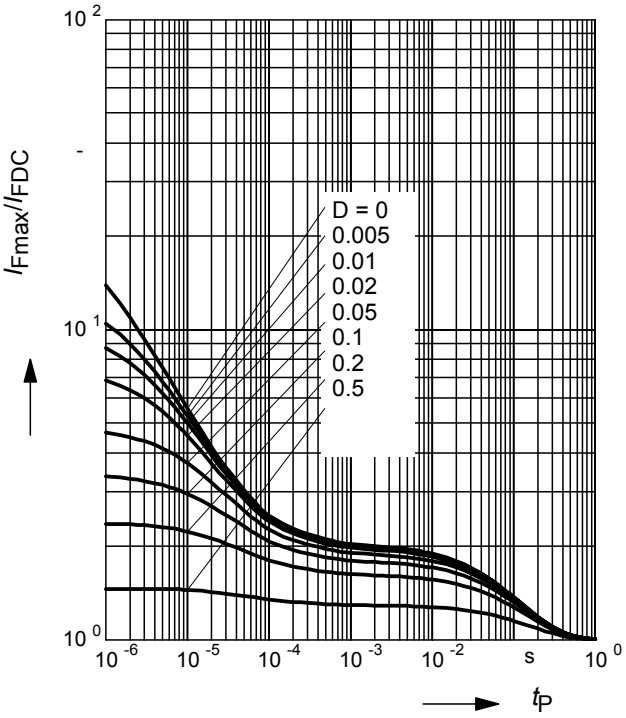
BAS70-04, BAS70-06



Permissible Pulse Load

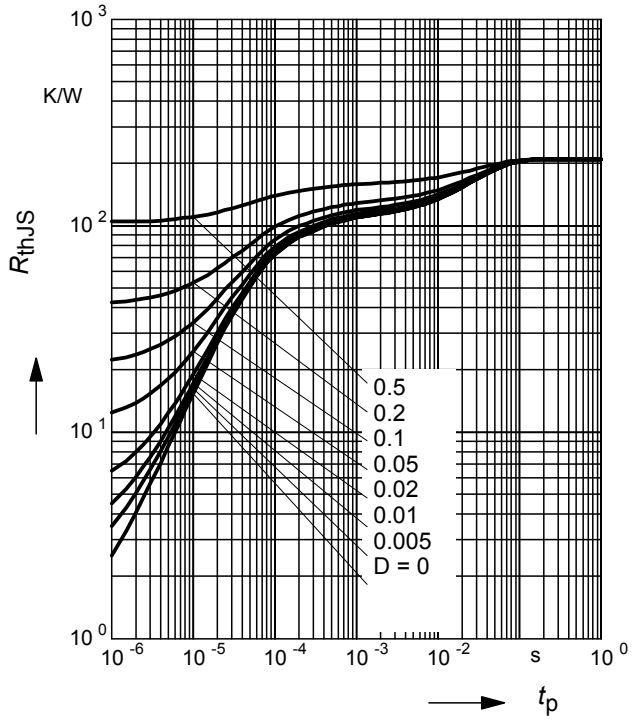
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS70-04, BAS70-06



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

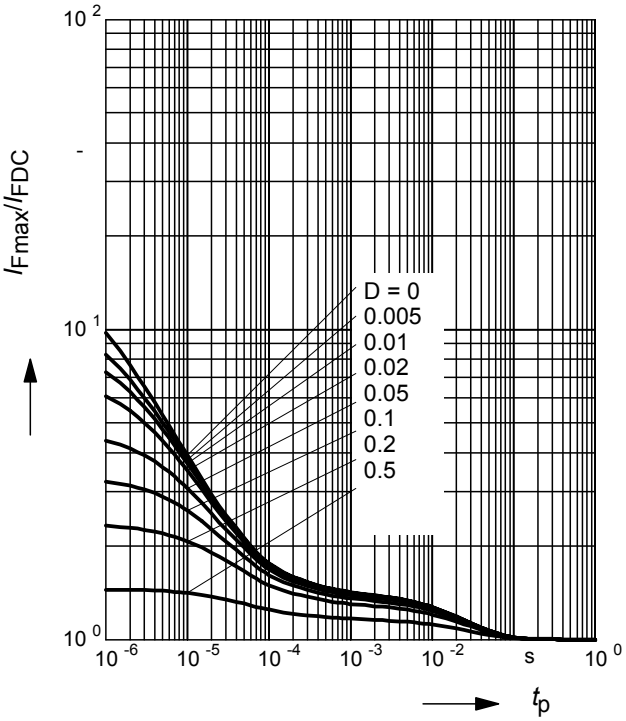
BAS70-04S



Permissible Pulse Load

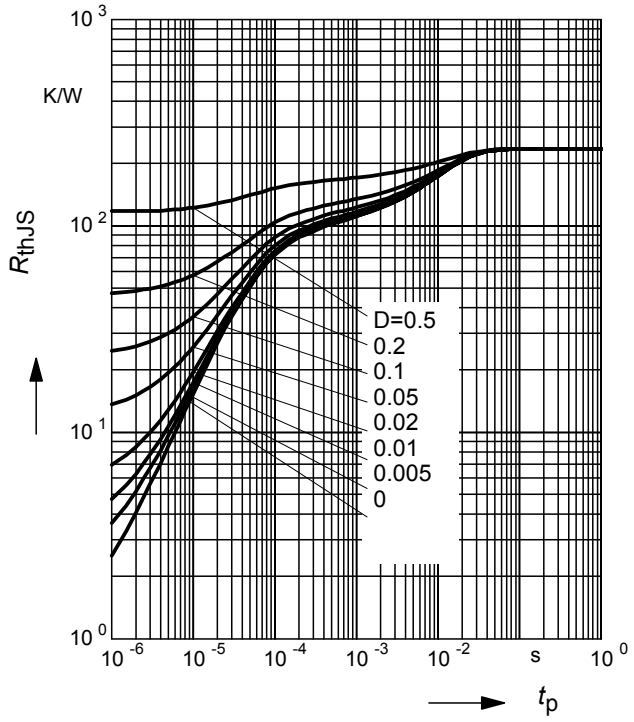
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS70-04S



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

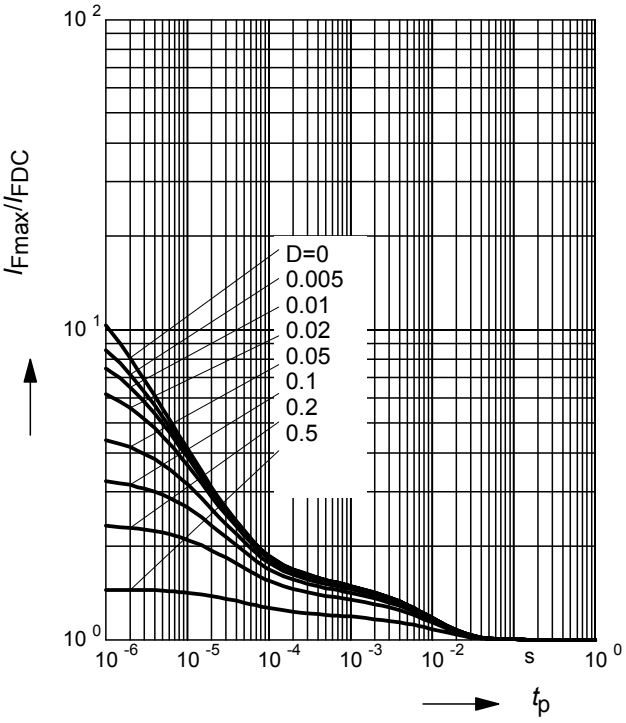
BAS70-04T



Permissible Pulse Load

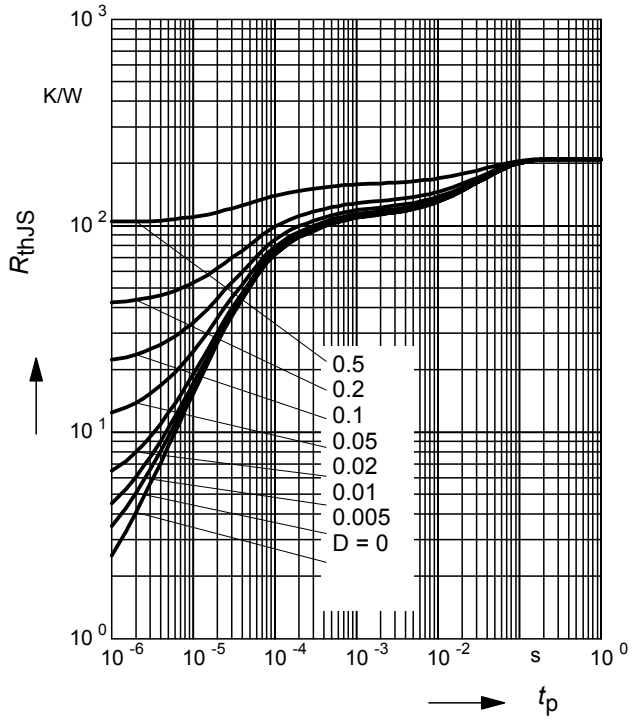
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-04T



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

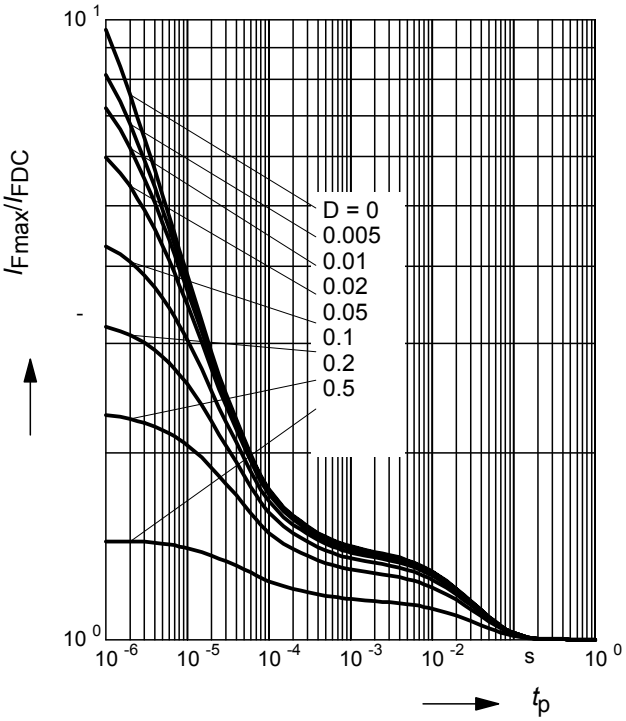
BAS70-04W, BAS70-06W



Permissible Pulse Load

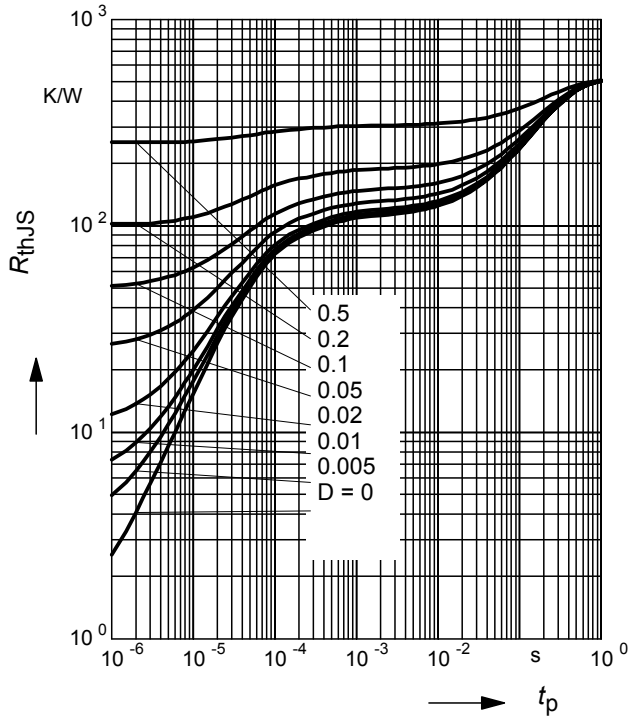
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-04W, BAS70-06W



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

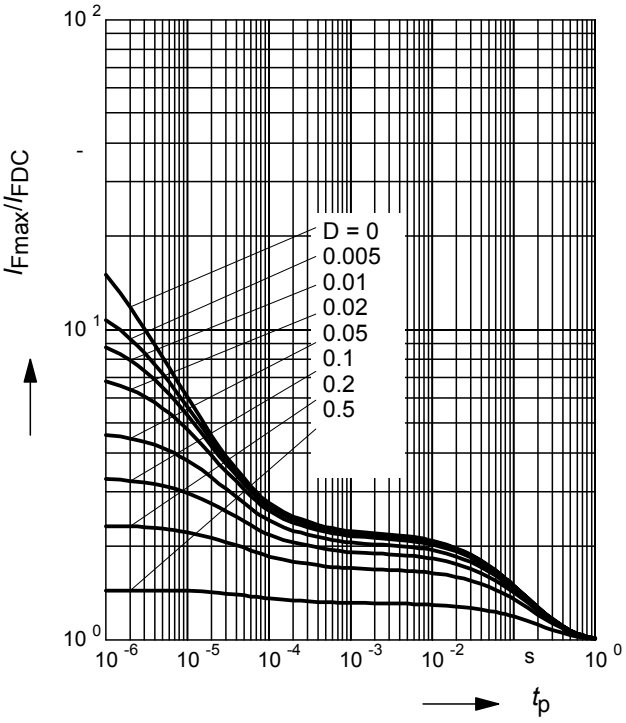
BAS70-05



Permissible Pulse Load

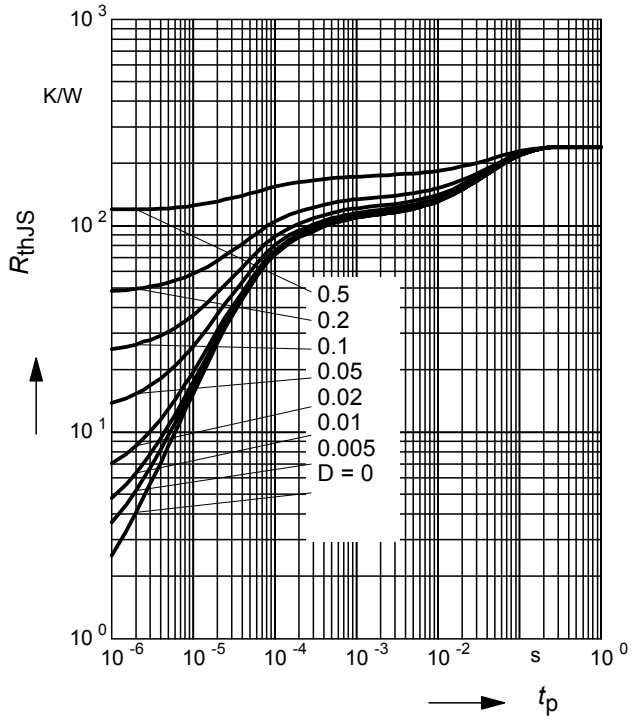
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS70-05



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

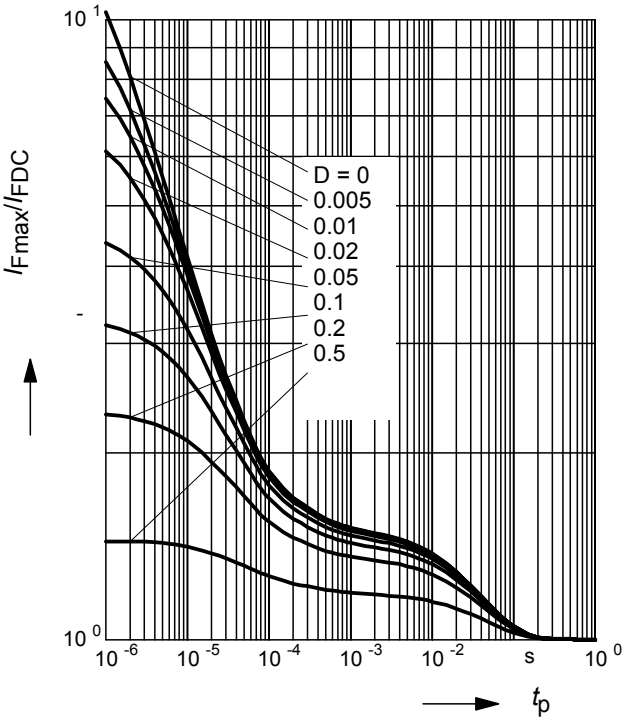
BAS70-05W



Permissible Pulse Load

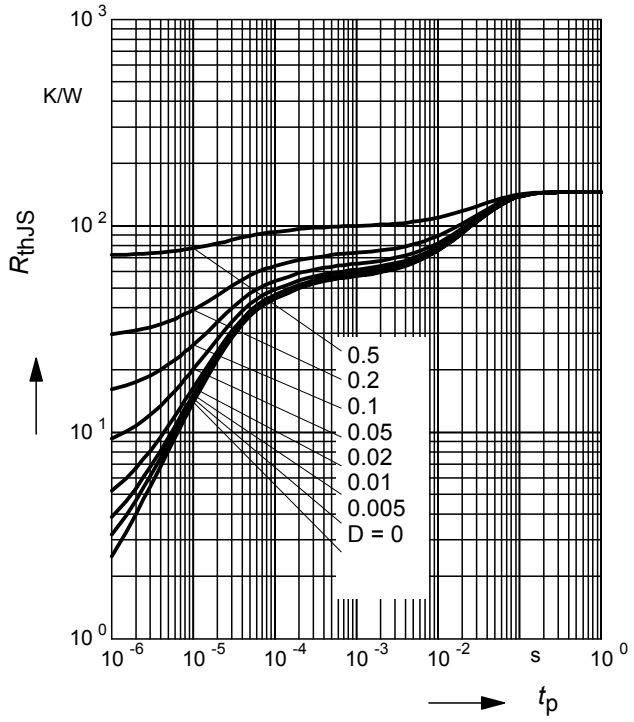
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS70-05W



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

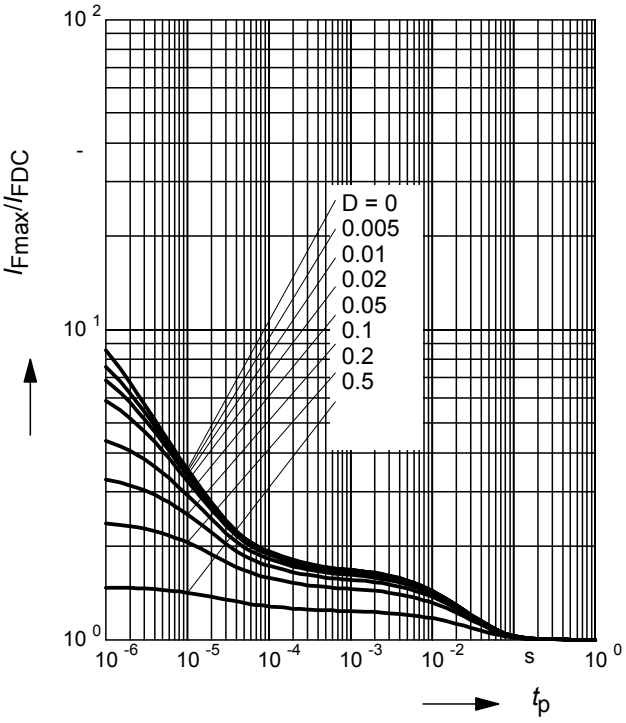
BAS70-07W



Permissible Pulse Load

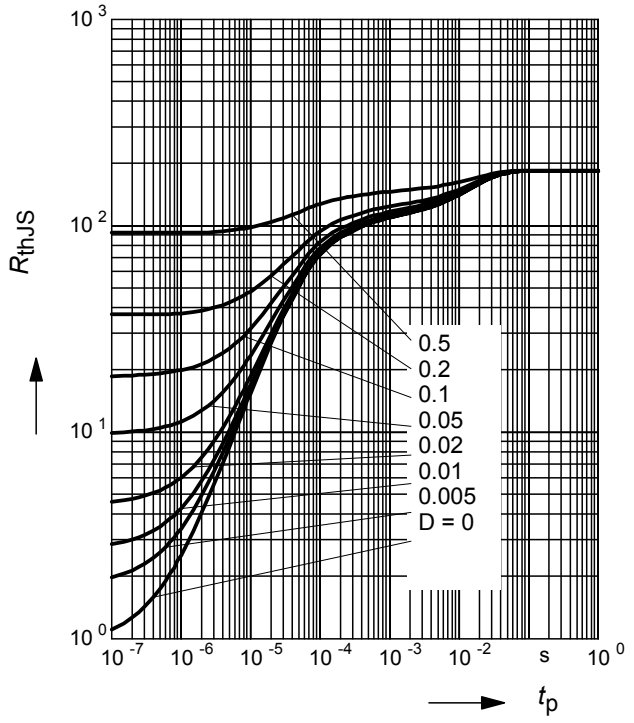
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS70-07W



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

BAS170W



Permissible Pulse Load

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

BAS170W