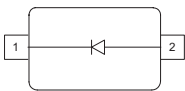


**Silicon Schottky Diode**

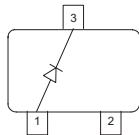
- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing



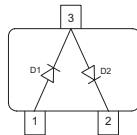
**BAS170W**  
**BAS70-02L**  
**BAS70-02W**



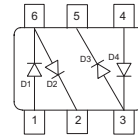
**BAS70**



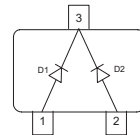
**BAS70-04**  
**BAS70-04T**  
**BAS70-04W**



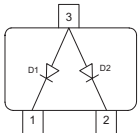
**BAS70-04S**



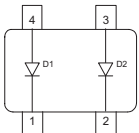
**BAS70-05**  
**BAS70-05W**



**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  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

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

**Thermal Resistance**

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

<sup>1</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

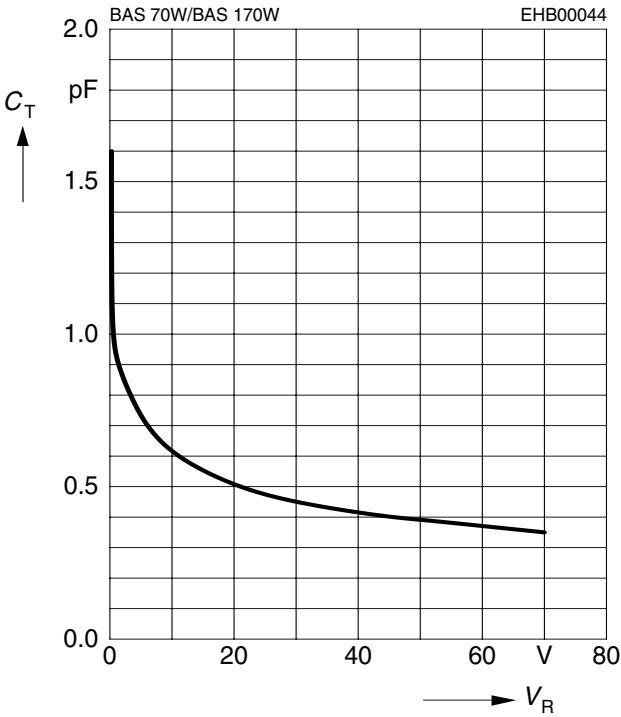
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Breakdown voltage $I_{(BR)} = 10 \mu\text{A}$	$V_{(BR)}$	70	-	-	V
Reverse current $V_R = 50 \text{ V}$	$I_R$	-	-	0.1	$\mu\text{A}$
Forward voltage $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 15 \text{ mA}$	$V_F$	300 600 750	375 705 880	410 750 1000	mV
Forward voltage matching <sup>1)</sup> $I_F = 10 \text{ mA}$	$\Delta V_F$	-	-	20	
<b>AC Characteristics</b>					
Diode capacitance $V_R = 0, f = 1 \text{ MHz}$	$C_T$	-	1.5	2	pF
Forward resistance $I_F = 10 \text{ mA}, f = 10 \text{ kHz}$	$r_f$	-	34	-	$\Omega$
Charge carrier life time $I_F = 25 \text{ mA}$	$\tau_{rr}$	-	-	100	ps

<sup>1)</sup> $\Delta V_F$  is the difference between lowest and highest  $V_F$  in a multiple diode component.

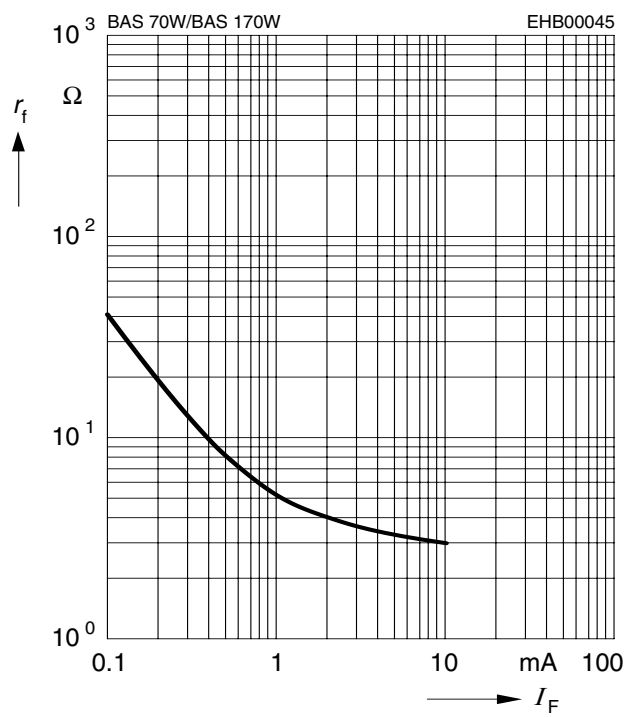
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



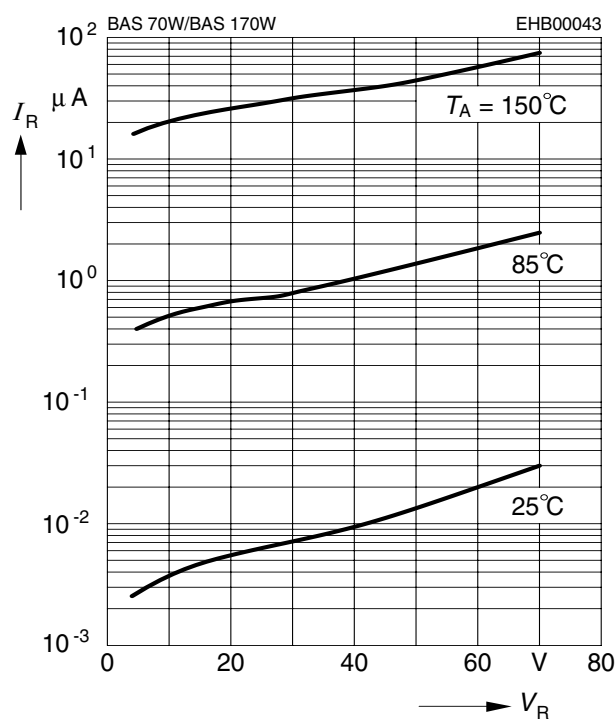
**Forward resistance  $r_f = f(I_F)$**

$f = 10\text{kHz}$



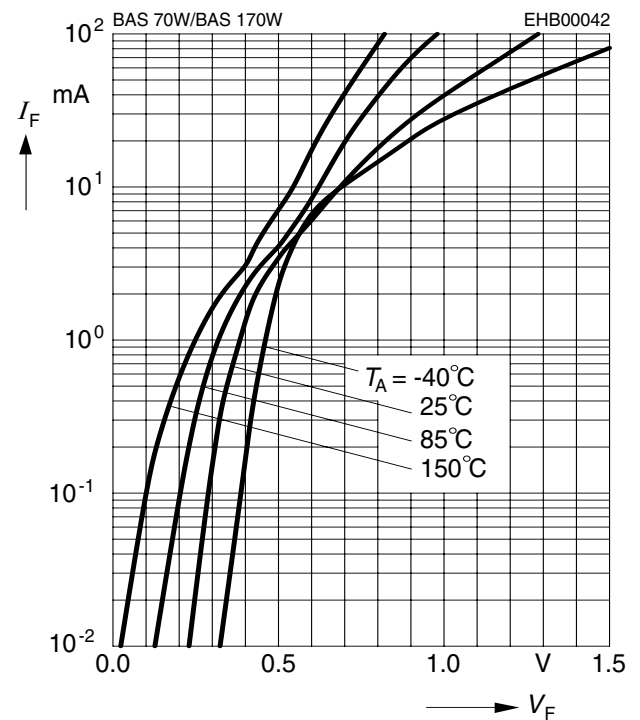
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



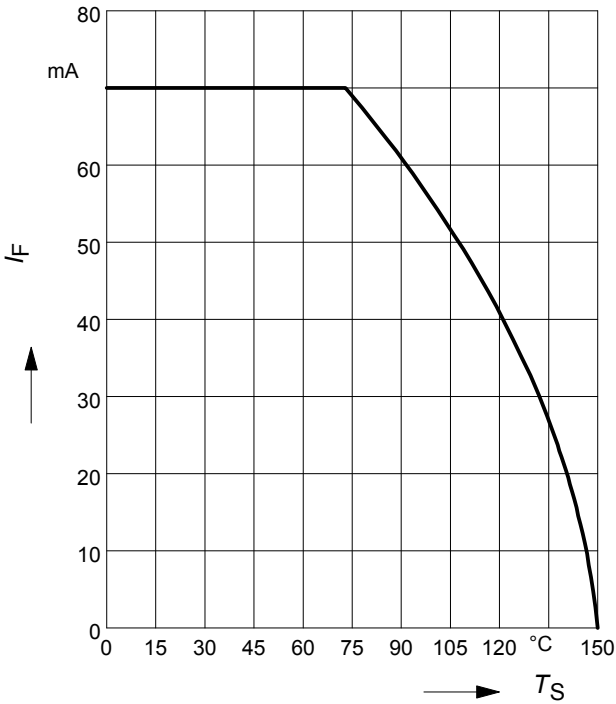
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



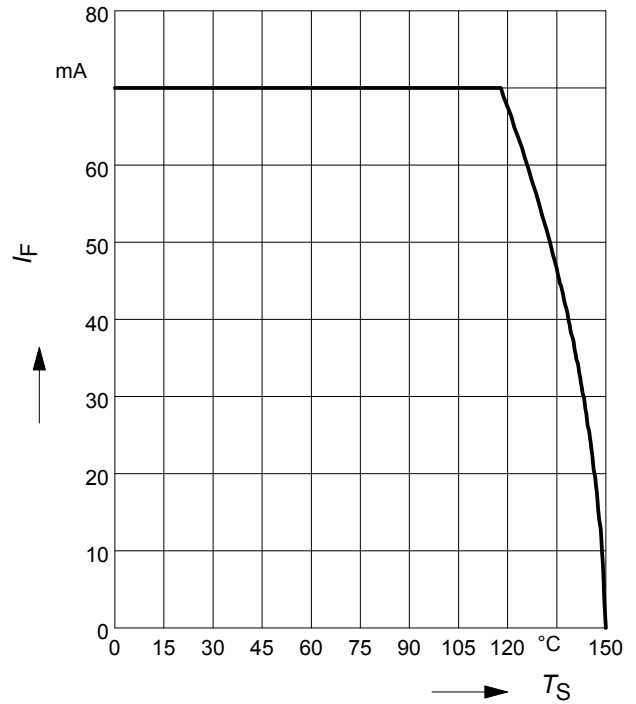
**Forward current  $I_F = f(T_S)$**

BAS70, BAS70-07



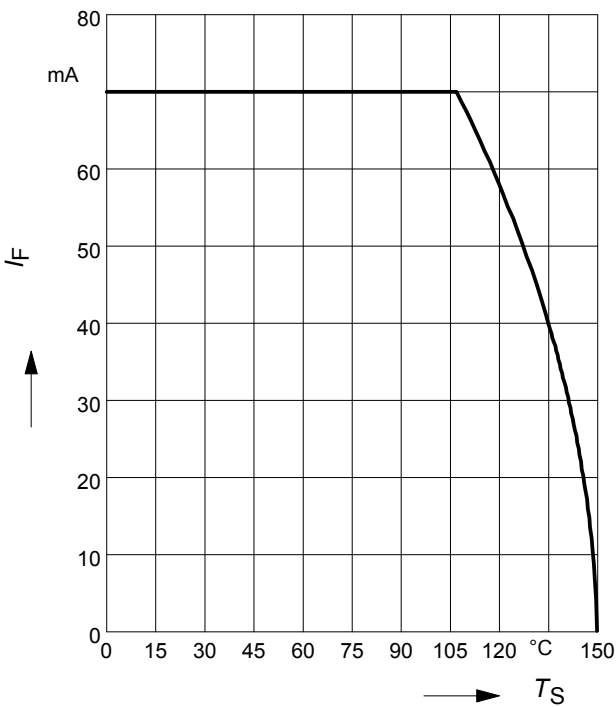
**Forward current  $I_F = f(T_S)$**

BAS70-02L



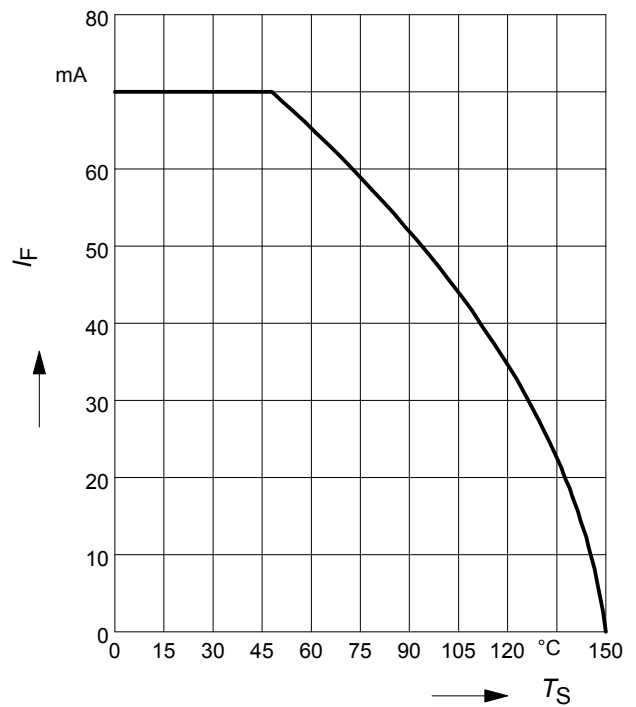
**Forward current  $I_F = f(T_S)$**

BAS70-02W



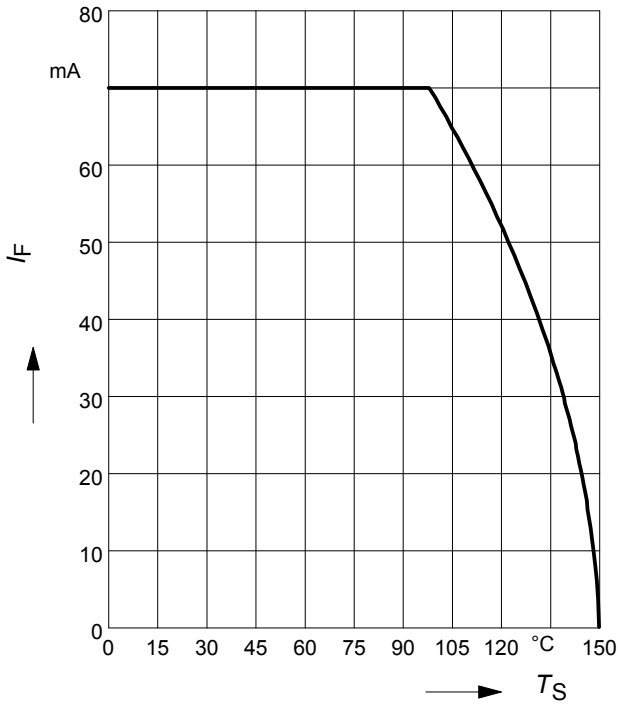
**Forward current  $I_F = f(T_S)$**

BAS70-04, BAS70-06



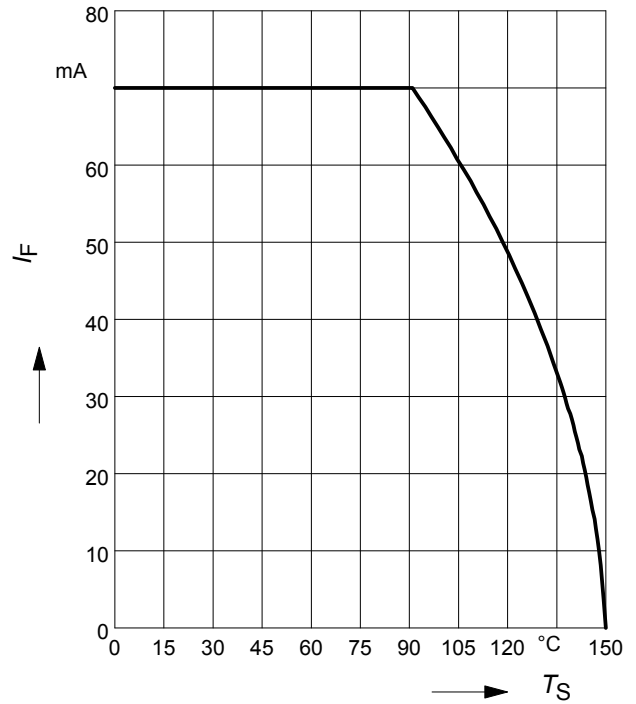
**Forward current  $I_F = f(T_S)$**

BAS70-04S/W, BAS70-06W, BAS170W



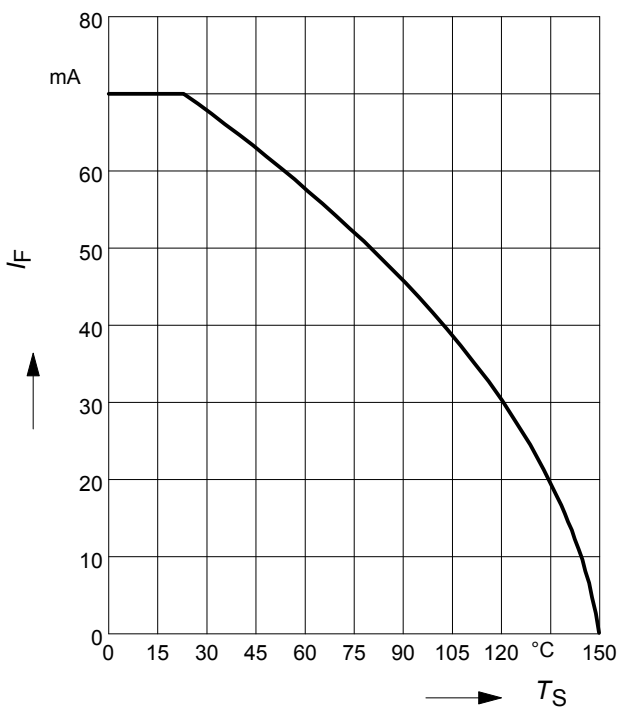
**Forward current  $I_F = f(T_S)$**

BAS70-04T



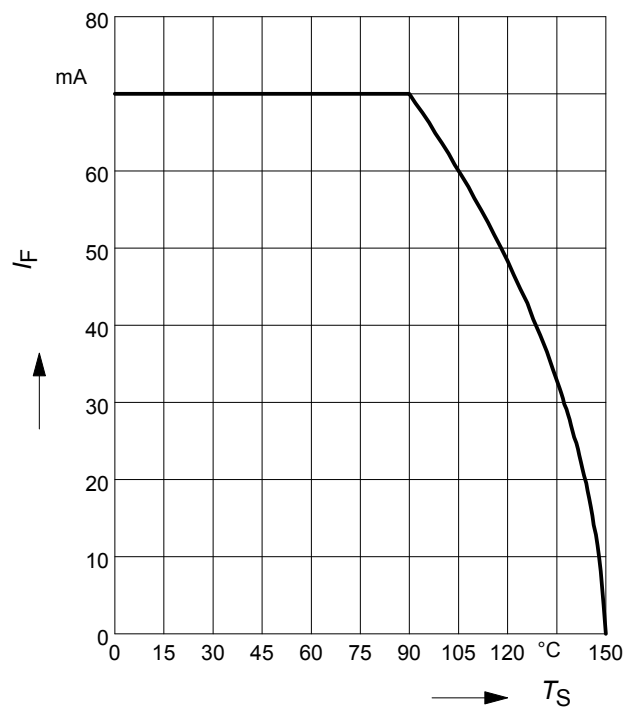
**Forward current  $I_F = f(T_S)$**

BAS70-05



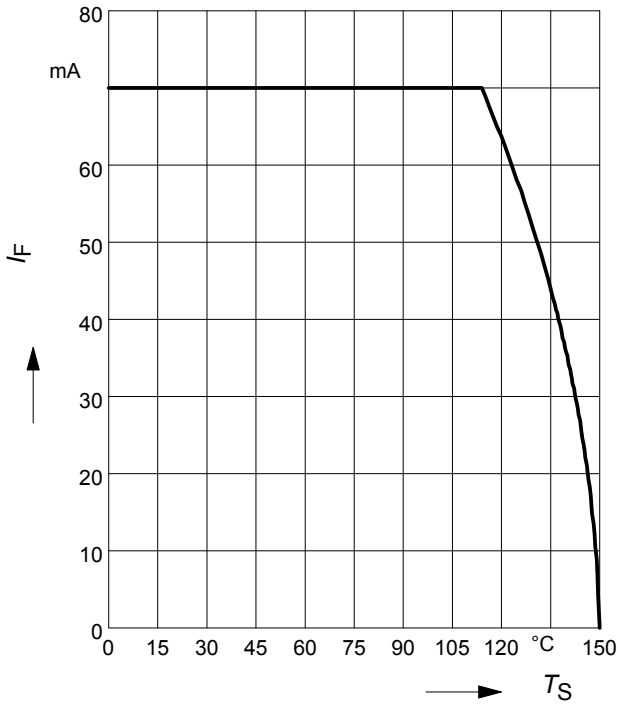
**Forward current  $I_F = f(T_S)$**

BAS70-05W



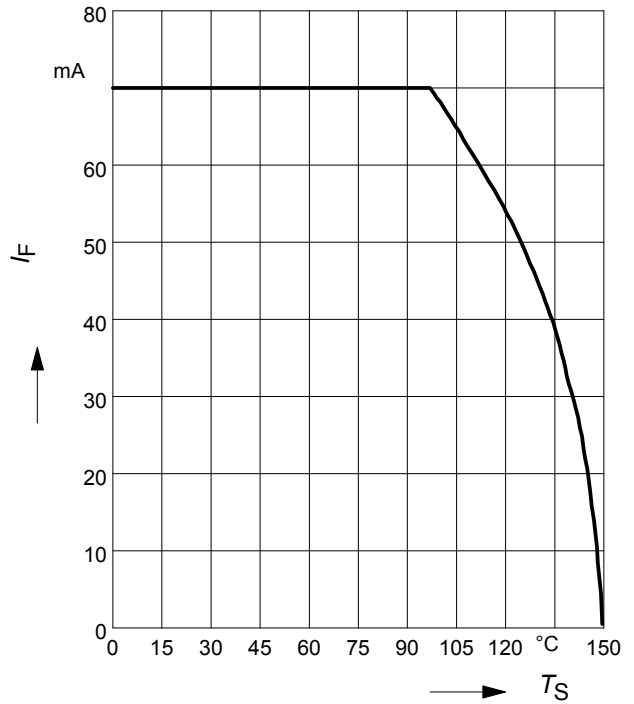
**Forward current  $I_F = f(T_S)$**

BAS70-07W



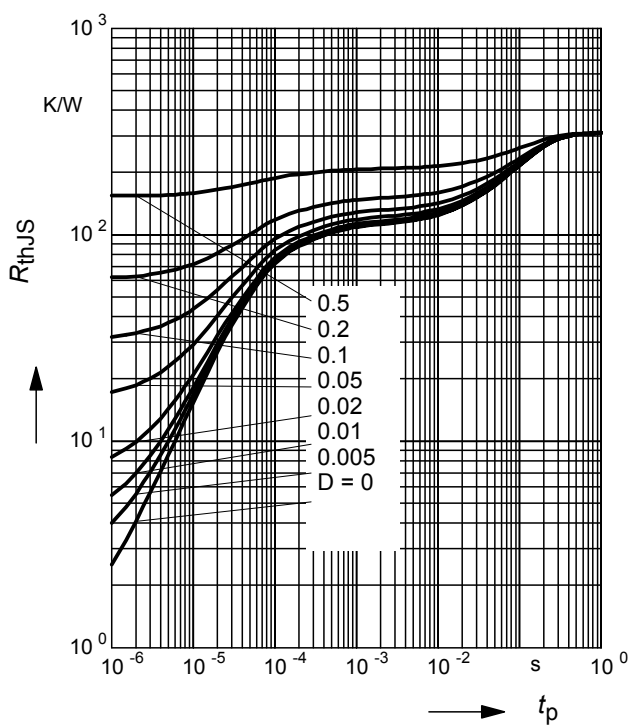
**Forward current  $I_F = f(T_S)$**

BAS170W



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

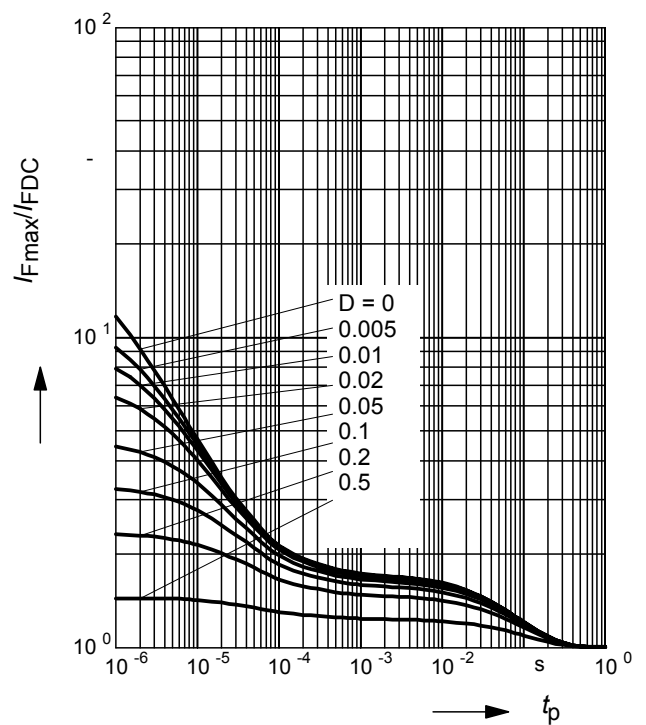
BAS70



**Permissible Pulse Load**

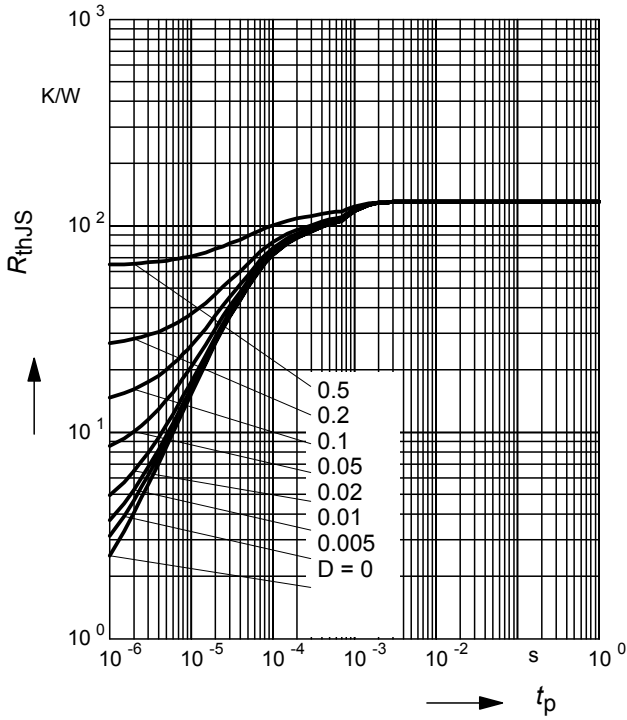
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70



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

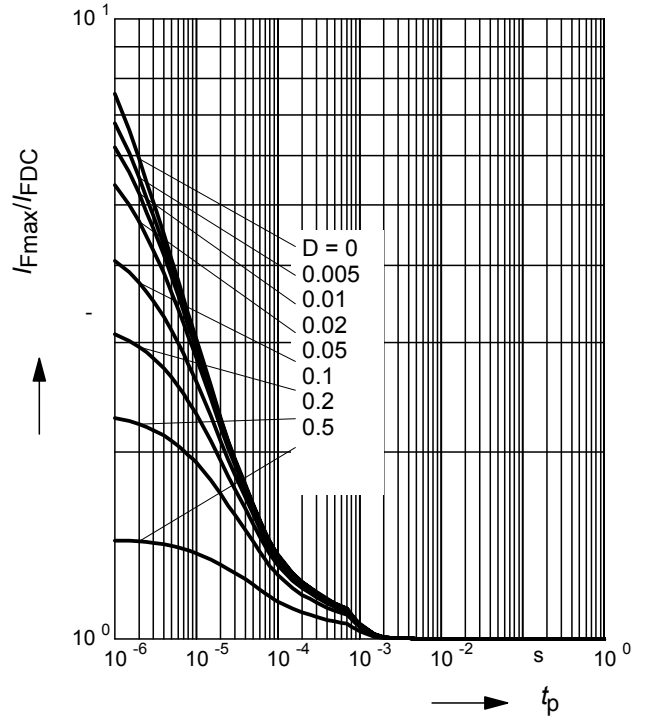
BAS70-02L



**Permissible Pulse Load**

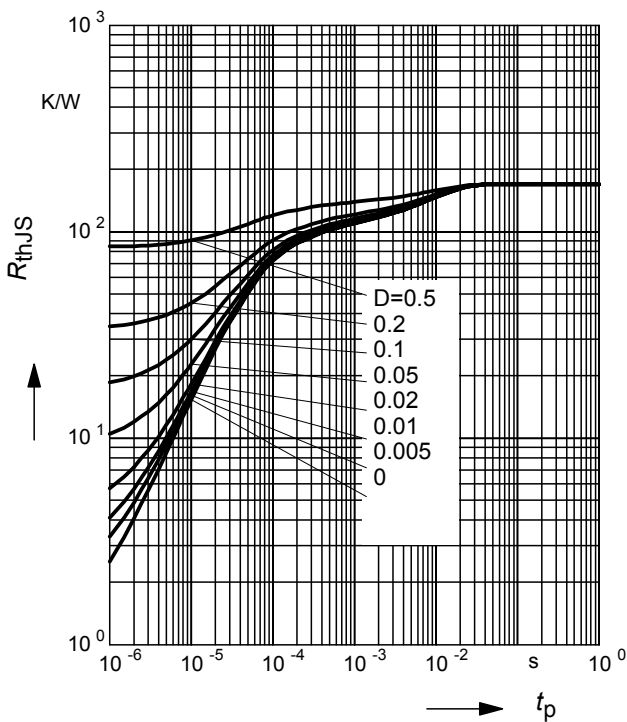
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-02L



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

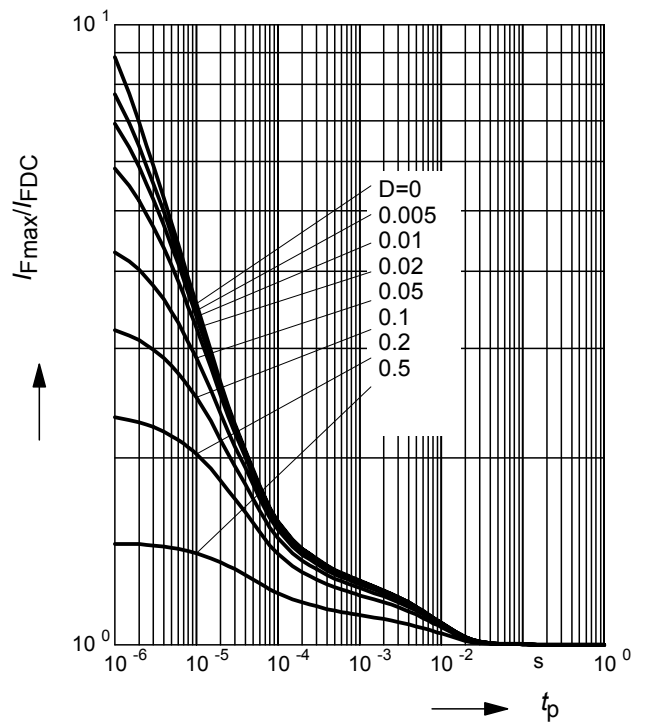
BAS70-02W



**Permissible Pulse Load**

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

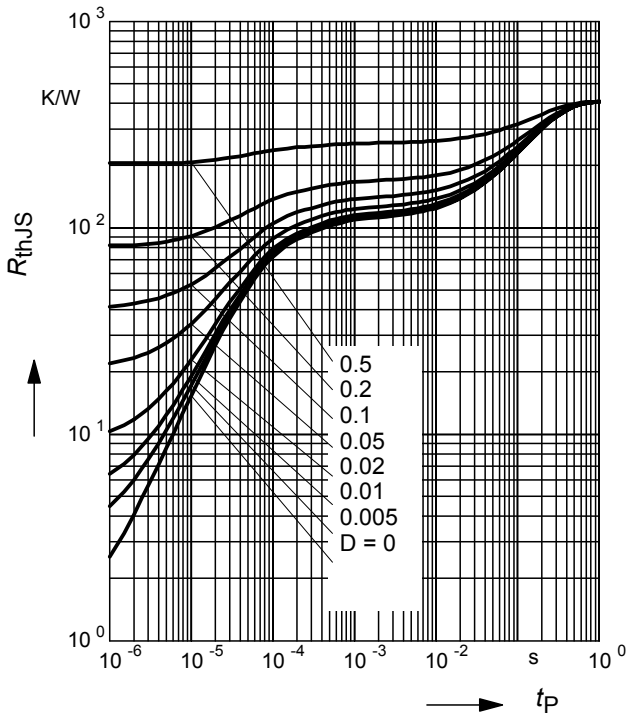
BAS70-02W





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

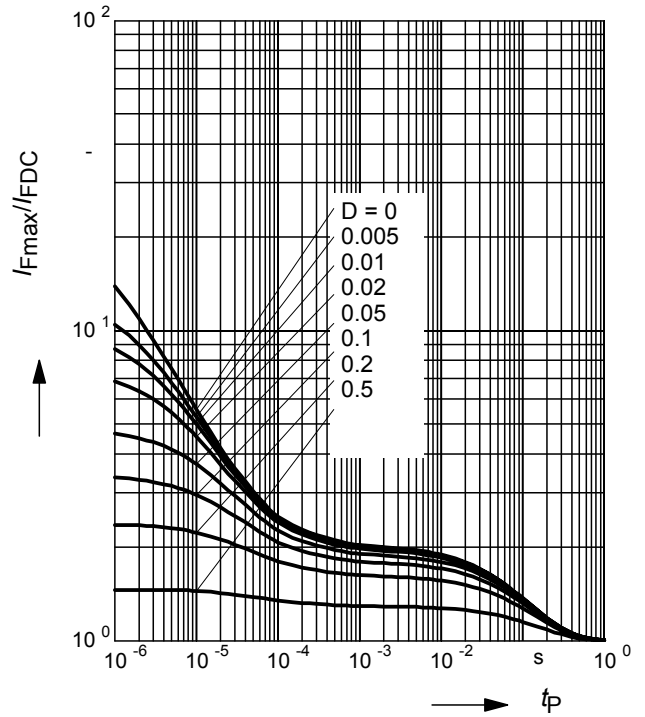
BAS70-04, BAS70-06



**Permissible Pulse Load**

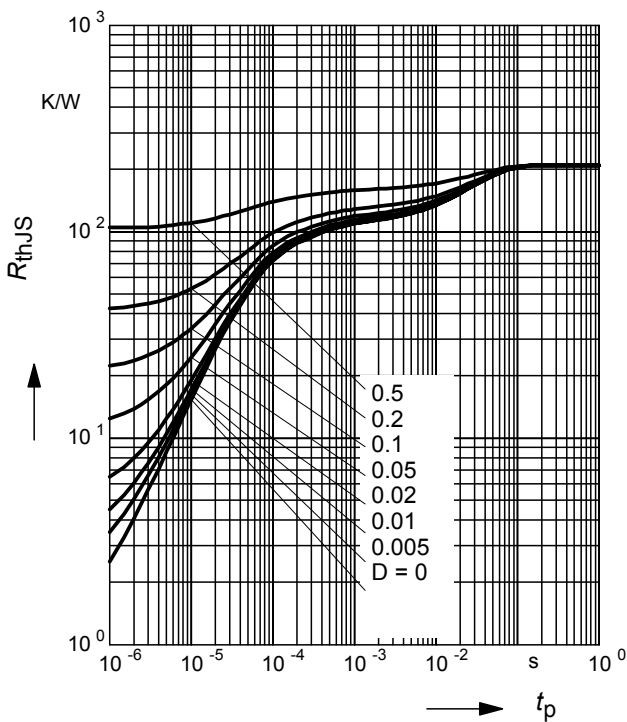
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-04, BAS70-06



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

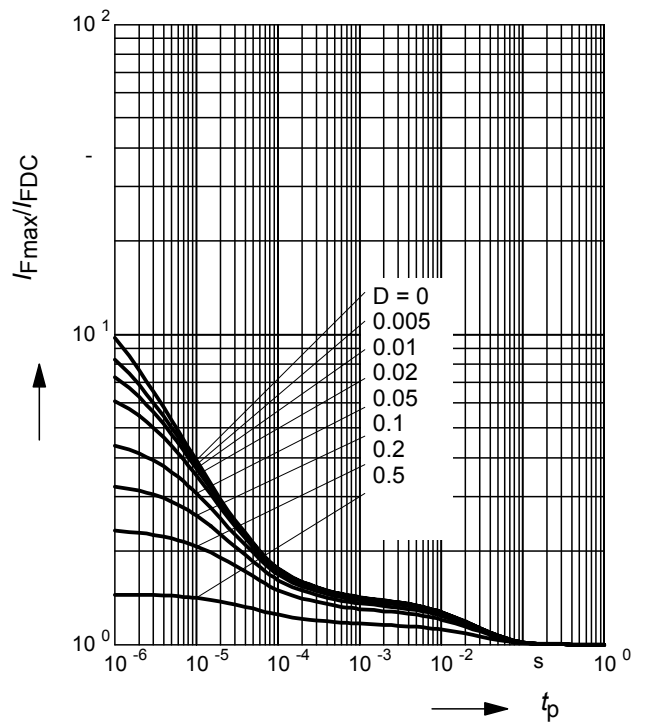
BAS70-04S



**Permissible Pulse Load**

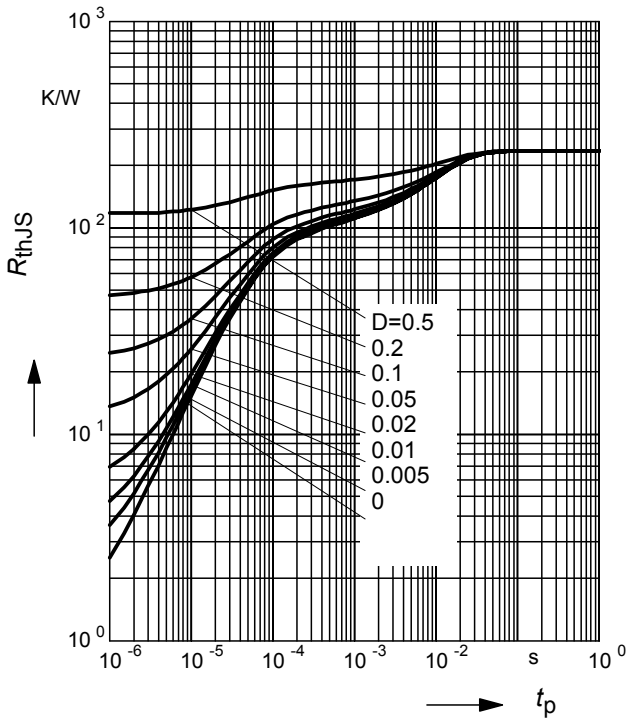
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-04S



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

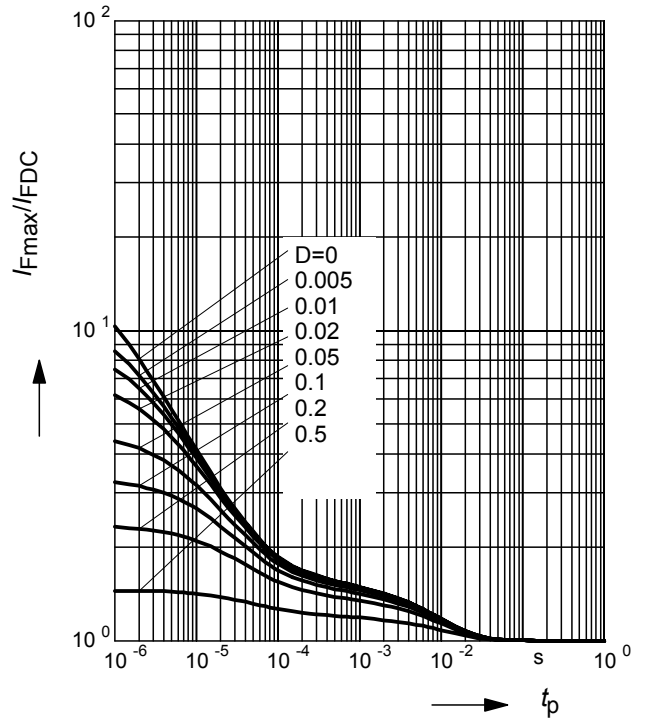
BAS70-04T



**Permissible Pulse Load**

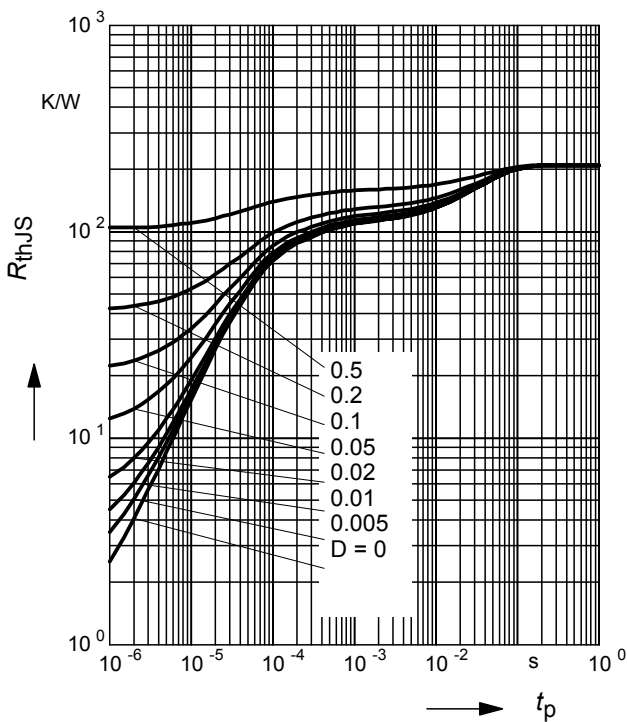
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-04T



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

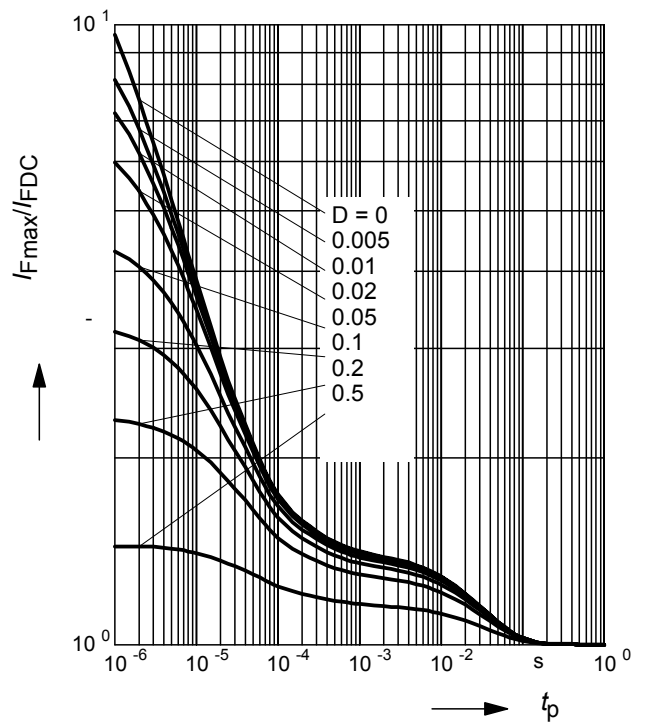
BAS70-04W, BAS70-06W



**Permissible Pulse Load**

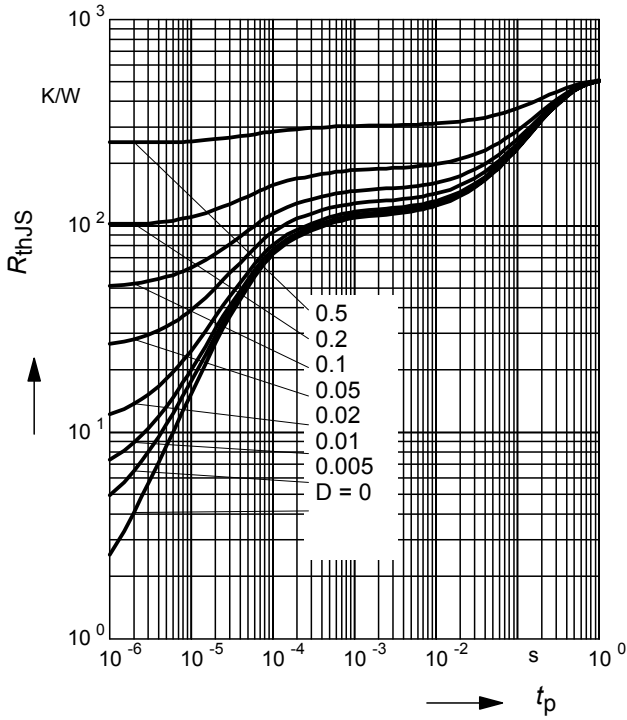
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-04W, BAS70-06W



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

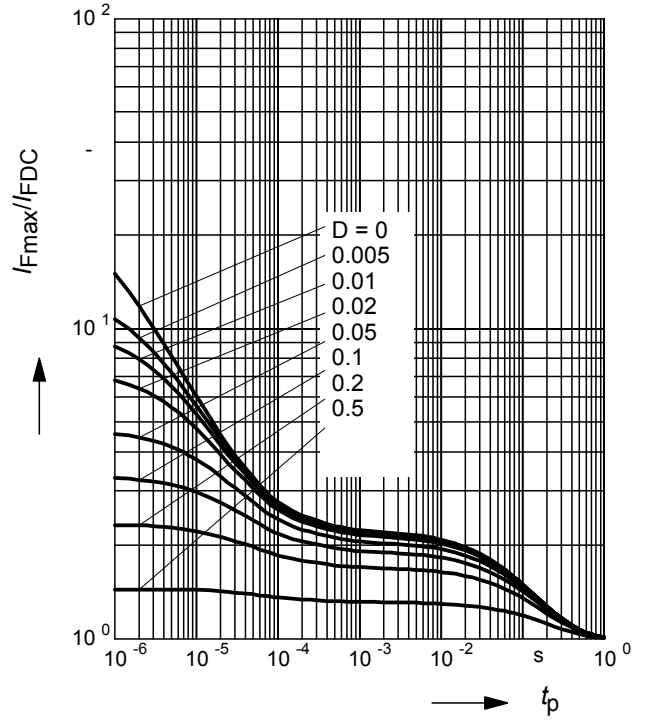
BAS70-05



**Permissible Pulse Load**

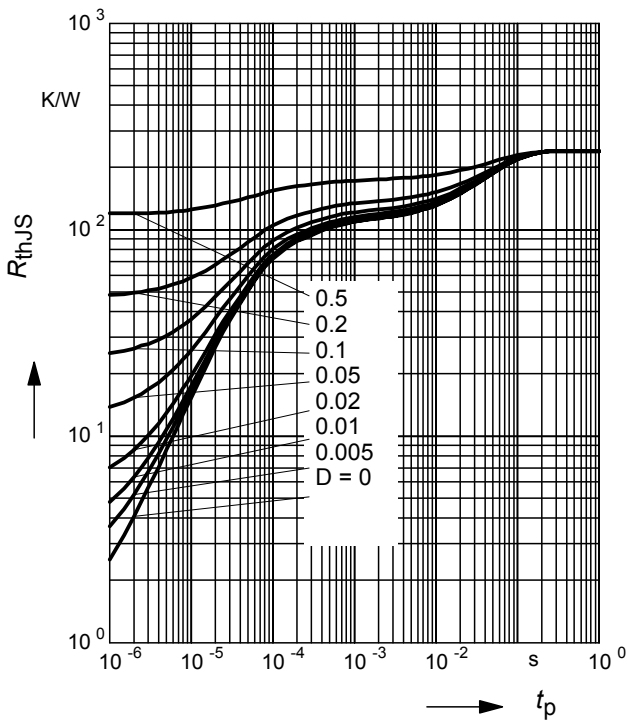
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-05



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

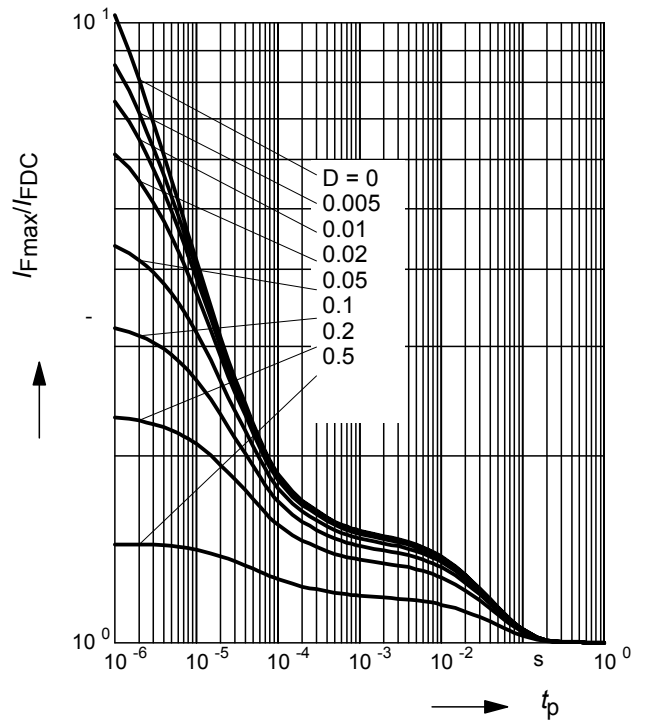
BAS70-05W



**Permissible Pulse Load**

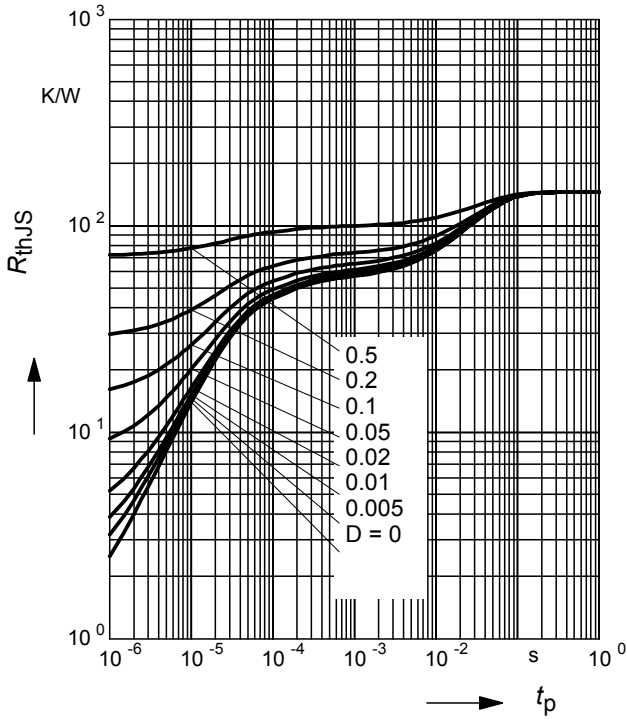
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-05W



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

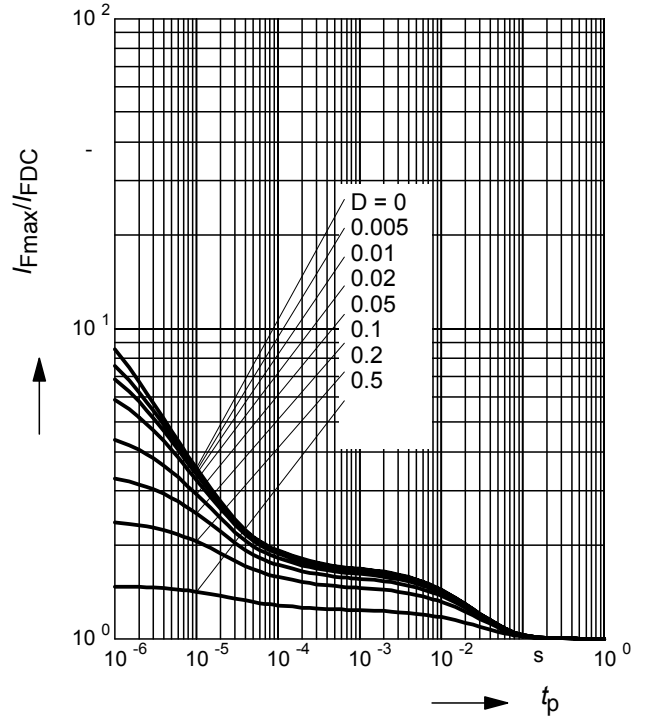
BAS70-07W



**Permissible Pulse Load**

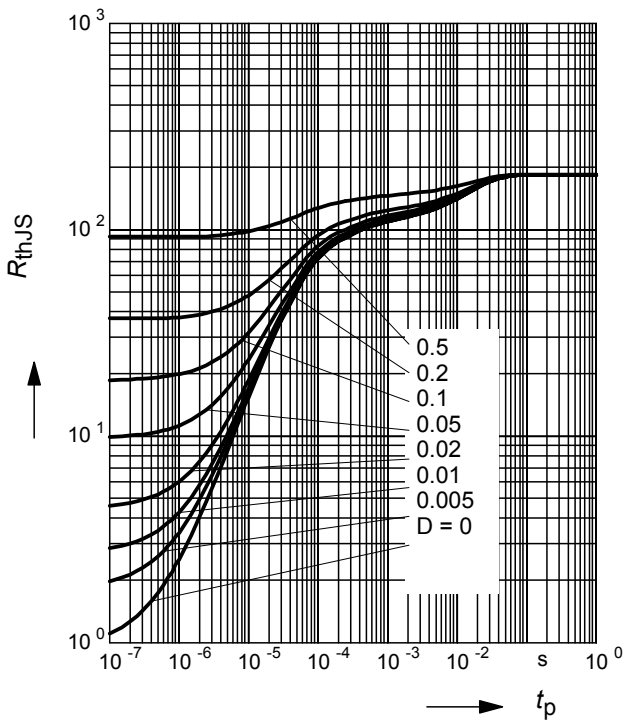
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS70-07W



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

BAS170W



**Permissible Pulse Load**

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

BAS170W

