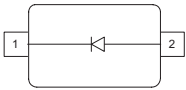


**Silicon Schottky Diode**

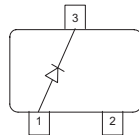
- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing



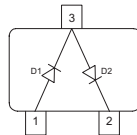
**BAS140W**  
**BAS40-02L**



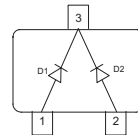
**BAS40**



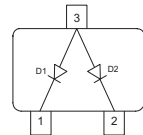
**BAS40-04**



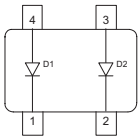
**BAS40-05**  
**BAS40-05W**



**BAS40-06**  
**BAS40-06W**



**BAS40-07**  
**BAS40-07W**



**ESD: Electrostatic discharge sensitive device, observe handling precaution!**

Type	Package	Configuration	$L_S$ (nH)	Marking
BAS140W	SOD323	single	1.8	white 4
BAS40	SOT23	single	1.8	43s
BAS40-02L*	TSLP-2-1	single, leadless	0.4	FF
BAS40-04	SOT23	series	1.8	44s
BAS40-05	SOT23	common cathode	1.8	45s
BAS40-05W	SOT323	common cathode	1.4	45s
BAS40-06	SOT23	common anode	1.8	46s
BAS40-06W	SOT323	common anode	1.4	46s
BAS40-07	SOT143	parallel pair	2	47s
BAS40-07W	SOT343	parallel pair	1.8	47s

\*Preliminary

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	40	V
Forward current	$I_F$	120	mA
Non-repetitive peak surge forward current $t \leq 10\text{ms}$	$I_{FSM}$	200	
Total power dissipation BAS140W, $T_S \leq 113^\circ\text{C}$ BAS40, BAS40-07, $T_S \leq 81^\circ\text{C}$ BAS40-02L, $T_S \leq 127^\circ\text{C}$ BAS40-04, BAS40-06, $T_S \leq 56^\circ\text{C}$ BAS40-06W, $T_S \leq 106^\circ\text{C}$ BAS40-05, $T_S \leq 31^\circ\text{C}$ BAS40-05W, $T_S \leq 98^\circ\text{C}$ BAS40-07W, $T_S \leq 118^\circ\text{C}$	$P_{tot}$	250 250 250 250 250 250 250 250	mW
Junction temperature	$T_j$	150	
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> BAS140W BAS40, BAS40-07 BAS40-02L BAS40-04, BAS40-06 BAS40-06W BAS40-05 BAS40-05W BAS40-07W	$R_{thJS}$	$\leq 150$ $\leq 275$ $\leq 90$ $\leq 375$ $\leq 175$ $\leq 475$ $\leq 205$ $\leq 125$	K/W

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

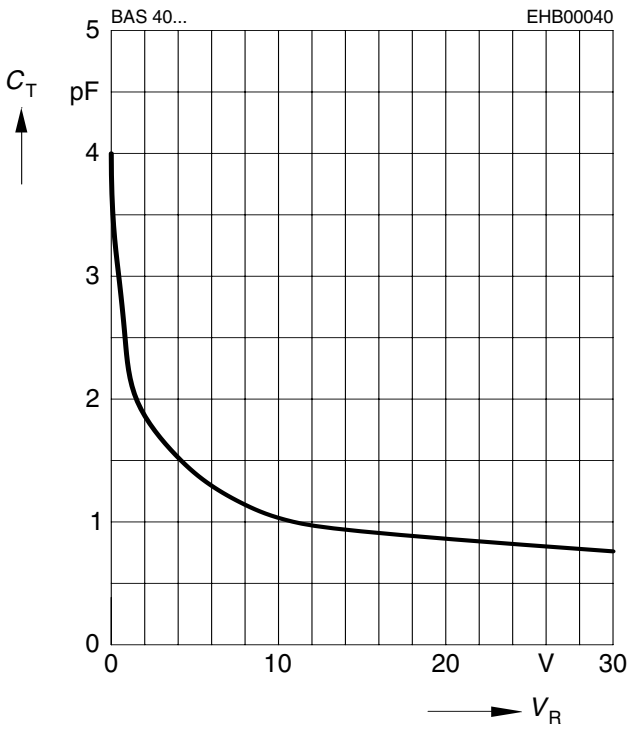
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Breakdown voltage $I_{(BR)} = 10 \mu\text{A}$	$V_{(BR)}$	40	-	-	V
Reverse current $V_R = 30 \text{ V}$	$I_R$	-	-	1	$\mu\text{A}$
Forward voltage $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 40 \text{ mA}$	$V_F$	250 350 600	310 450 720	380 500 1000	mV
Forward voltage matching <sup>1)</sup> $I_F = 10 \text{ mA}$	$\Delta V_F$	-	-	20	
<b>AC Characteristics</b>					
Diode capacitance $V_R = 0, f = 1 \text{ MHz}$	$C_T$	-	3	5	pF
Differential forward resistance $I_F = 10 \text{ mA}, f = 10 \text{ kHz}$	$R_F$	-	10	-	$\Omega$
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.

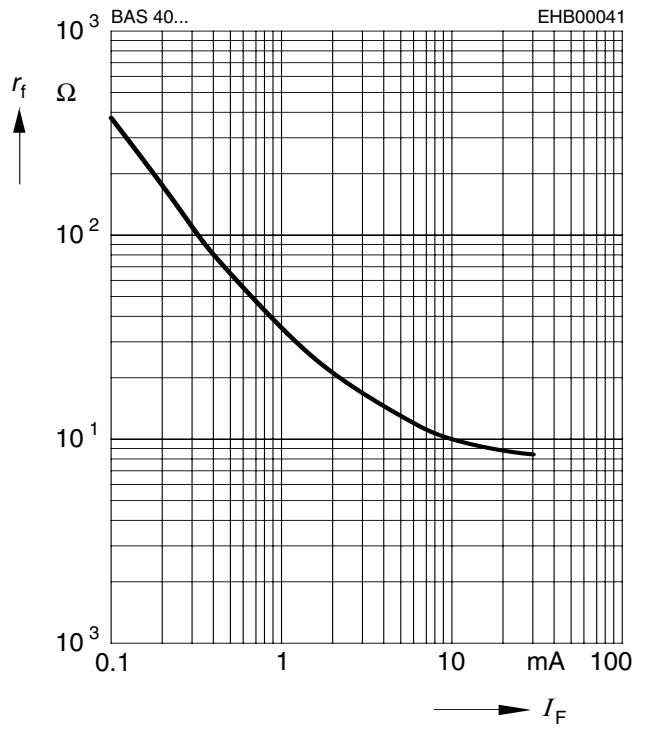
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



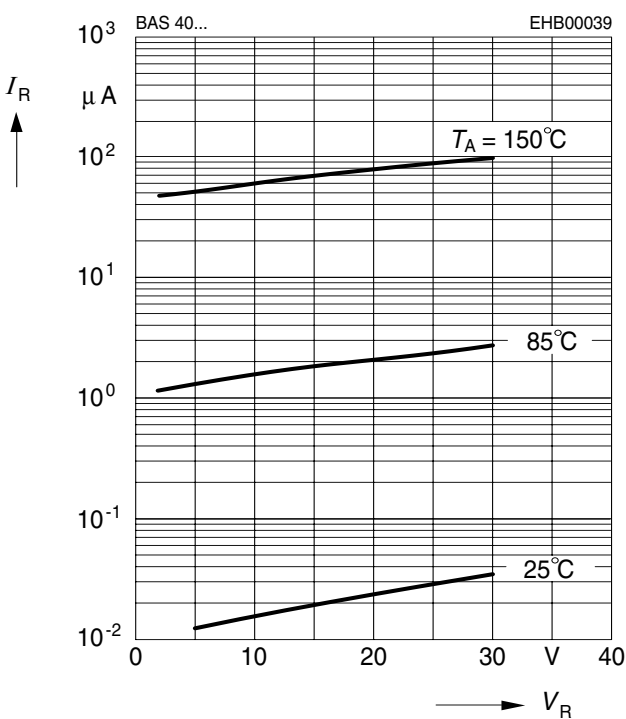
**Forward resistance  $r_f = f(I_F)$**

$f = 10\text{kHz}$



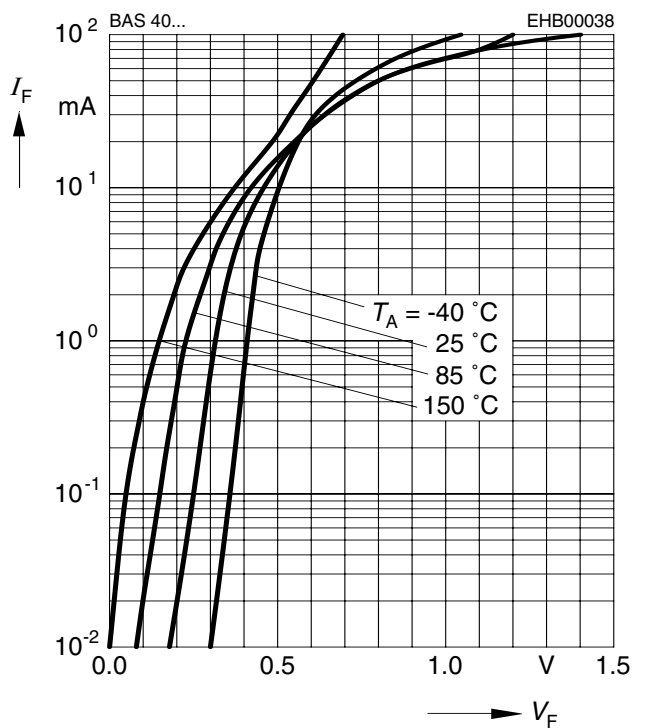
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



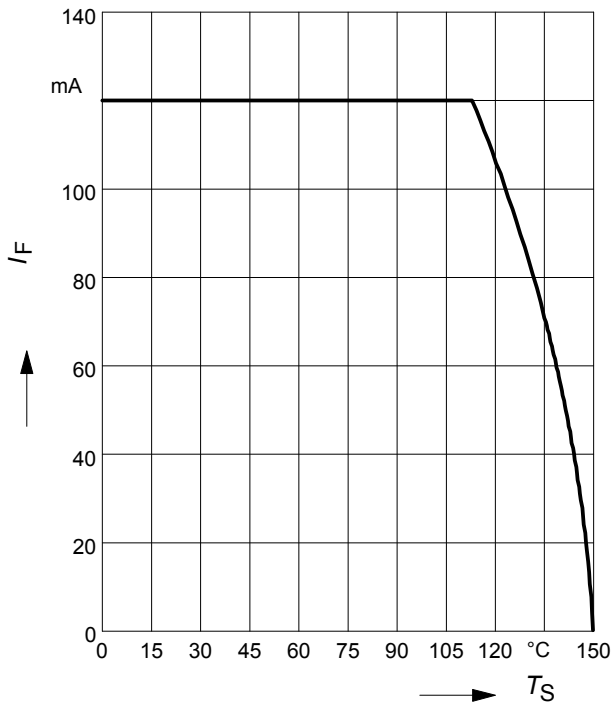
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



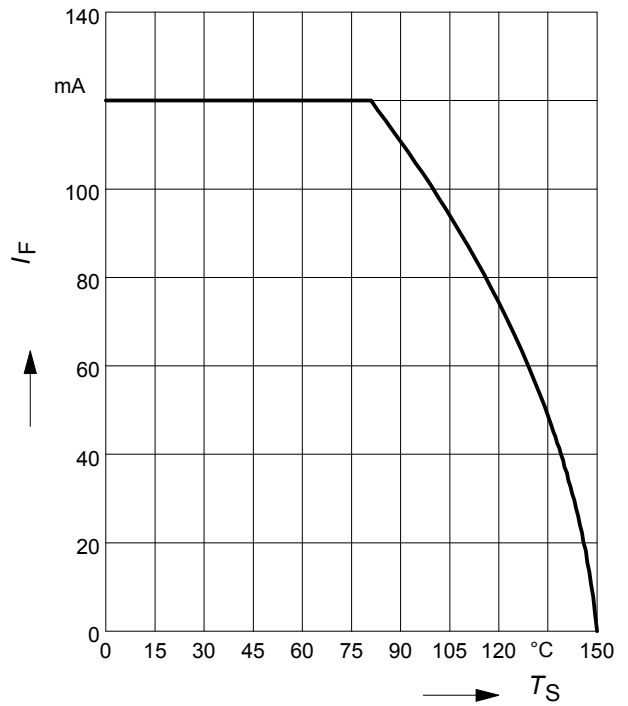
**Forward current  $I_F = f(T_S)$**

BAS140W



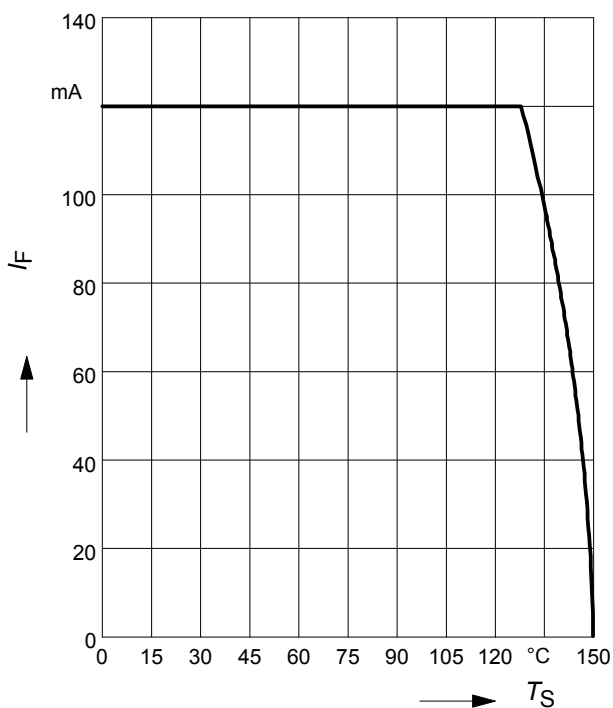
**Forward current  $I_F = f(T_S)$**

BAS40, BAS40-07



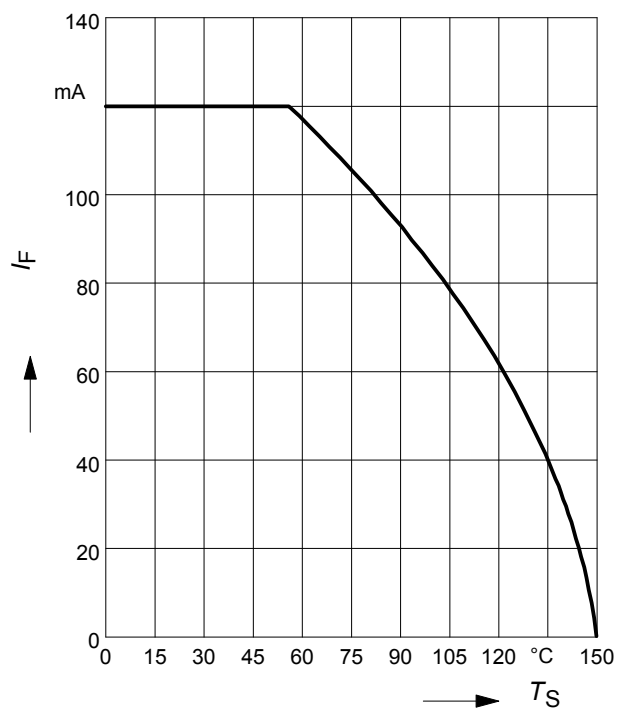
**Forward current  $I_F = f(T_S)$**

BAS40-02L



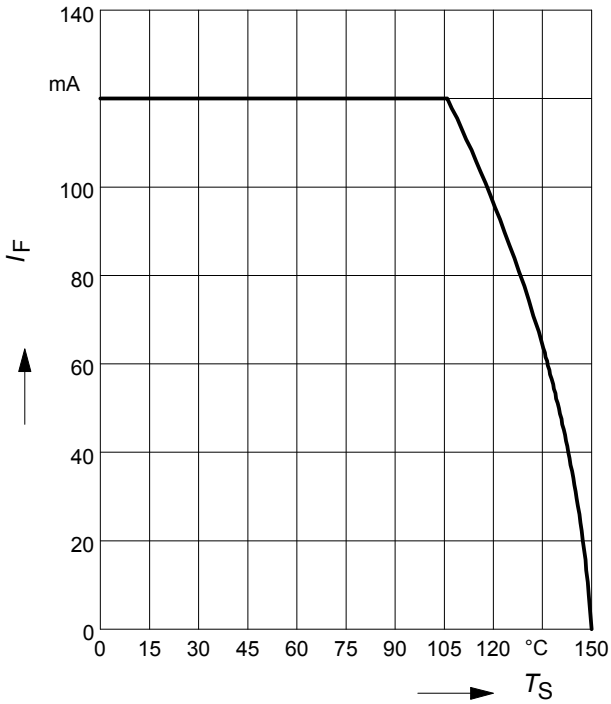
**Forward current  $I_F = f(T_S)$**

BAS40-04, BAS40-06



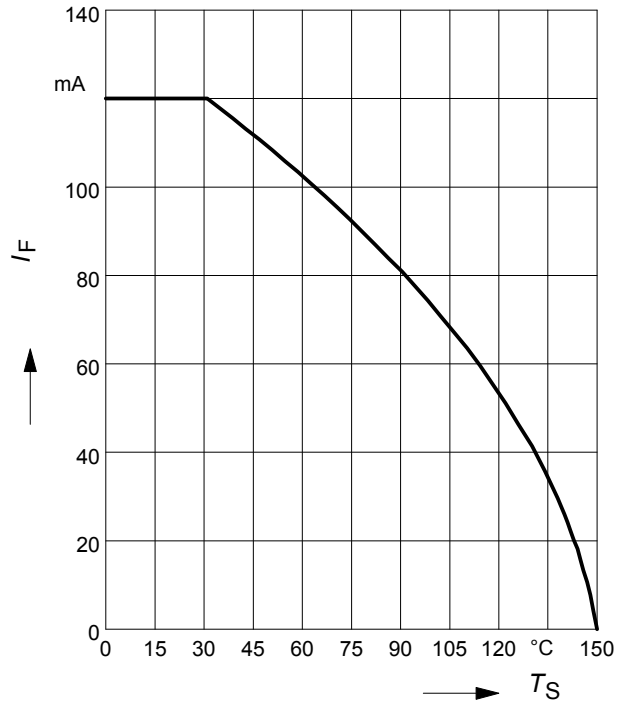
Forward current  $I_F = f(T_S)$

BAS40-06W



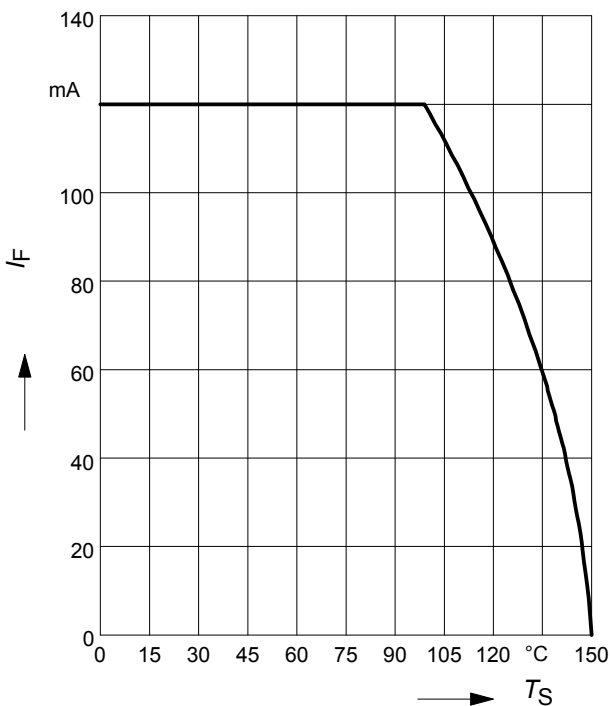
Forward current  $I_F = f(T_S)$

BAS40-05



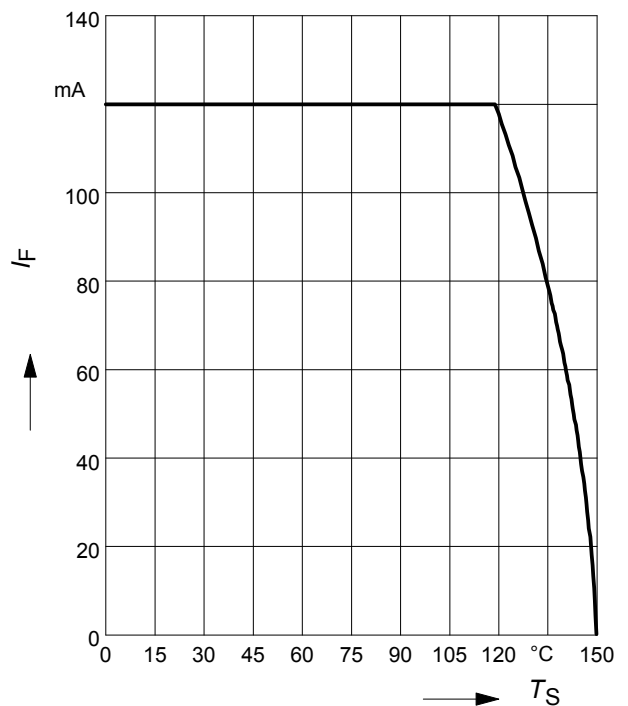
Forward current  $I_F = f(T_S)$

BAS40-05W



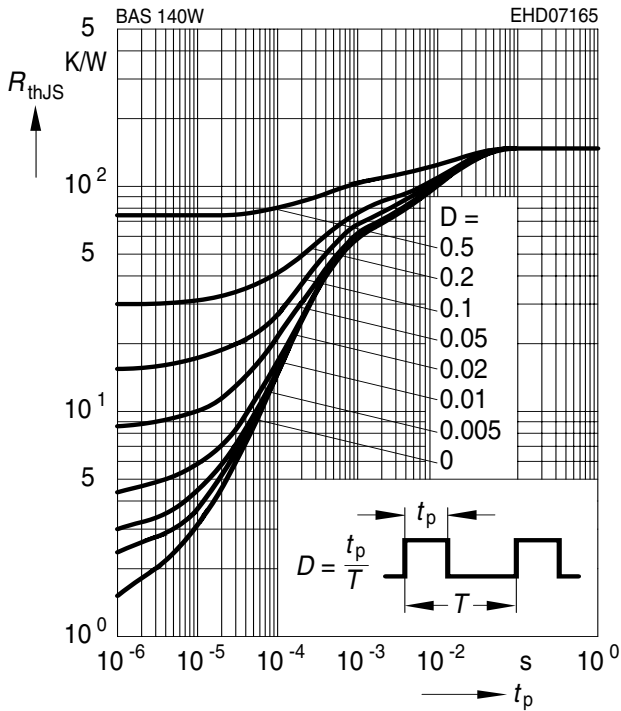
Forward current  $I_F = f(T_S)$

BAS40-07W



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

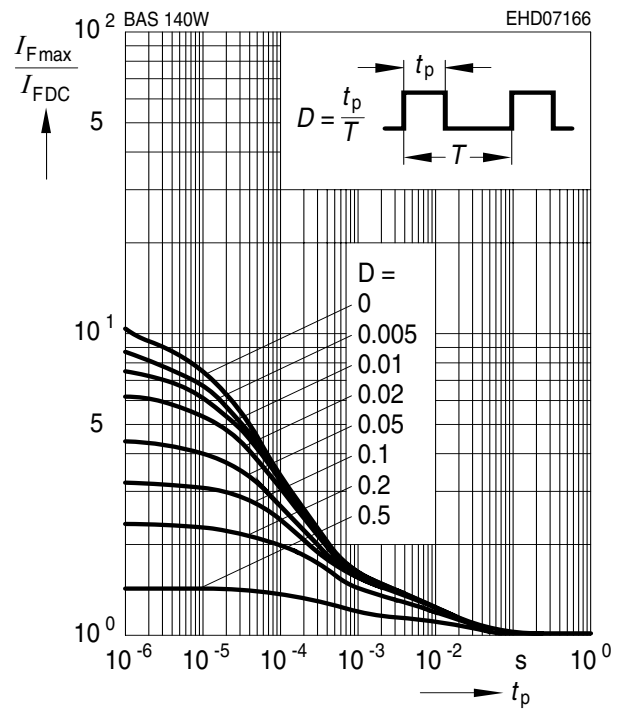
BAS140W



**Permissible Pulse Load**

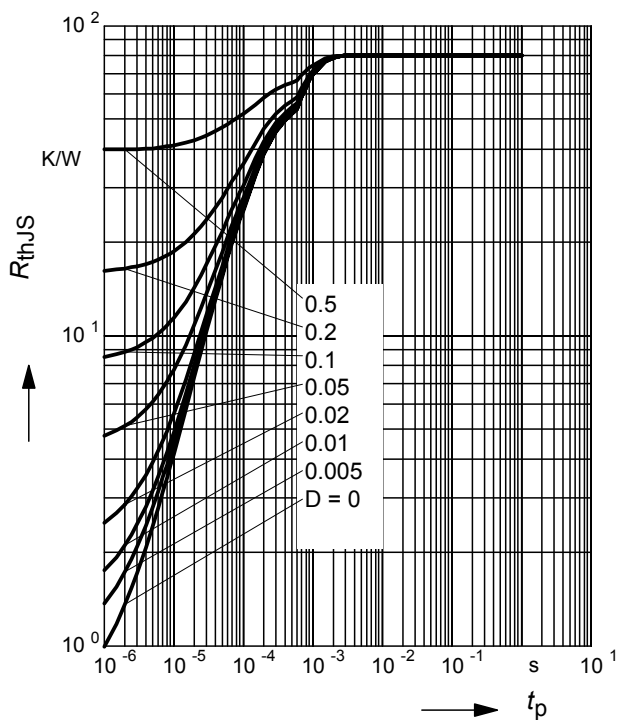
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS140W



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

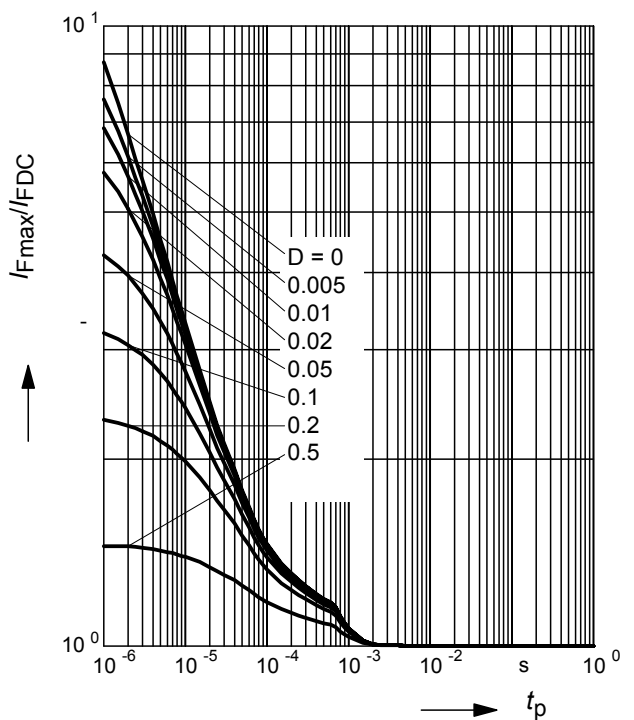
BAS40-02L



**Permissible Pulse Load**

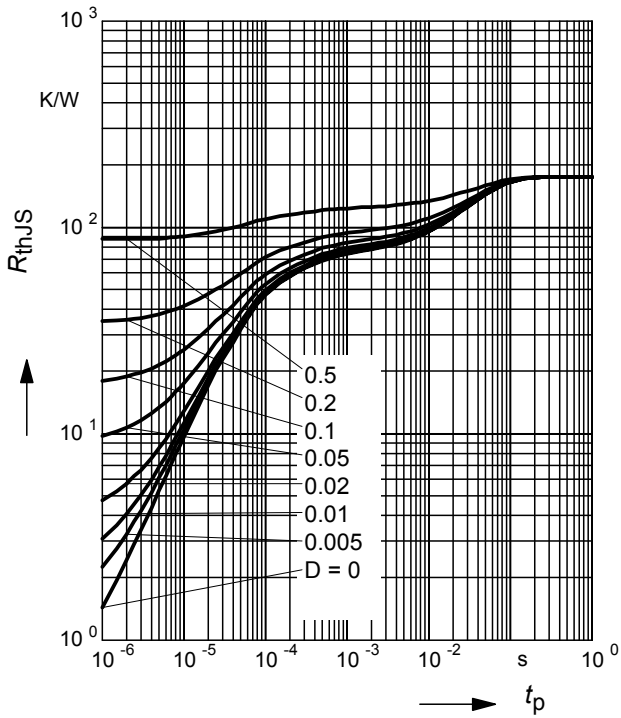
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS40-02L



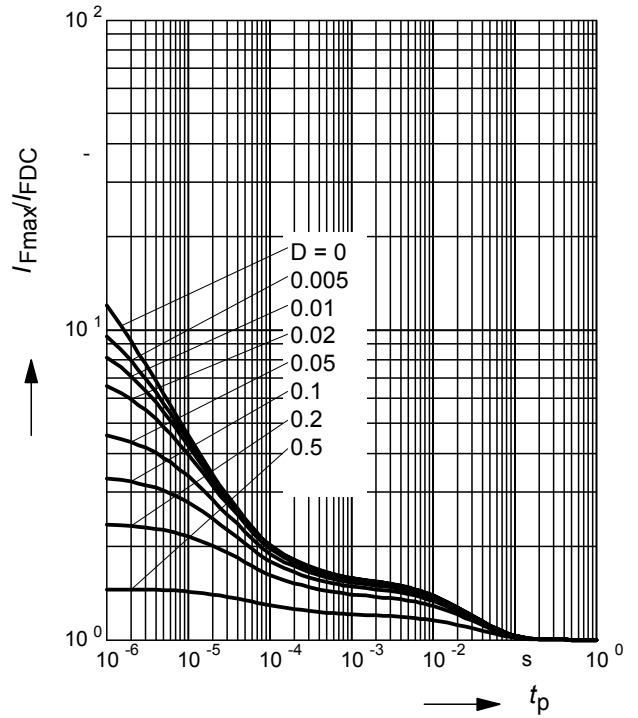
**Permissible Puls Load  $R_{thJS} = f(t_p)$**

BAS40-06W



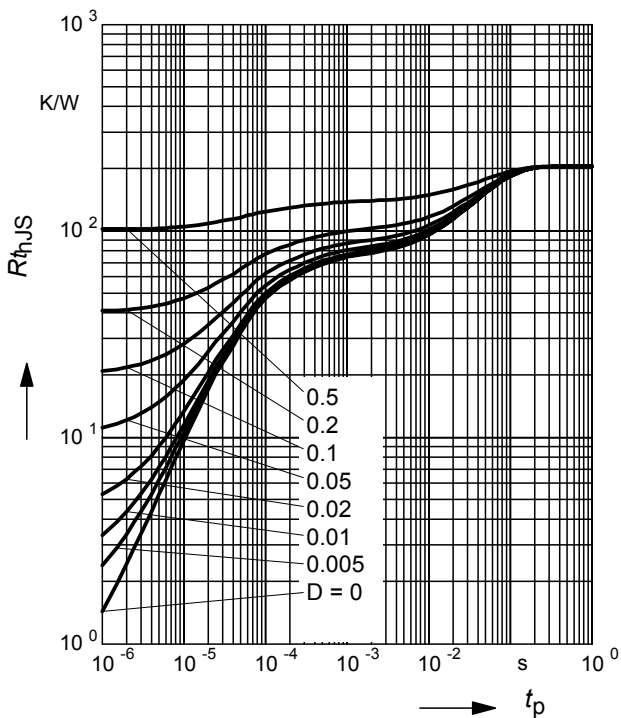
**Permissible Pulse Load**

$I_{Fmax}/I_{FDC} = f(t_p)$  BAS40-06W



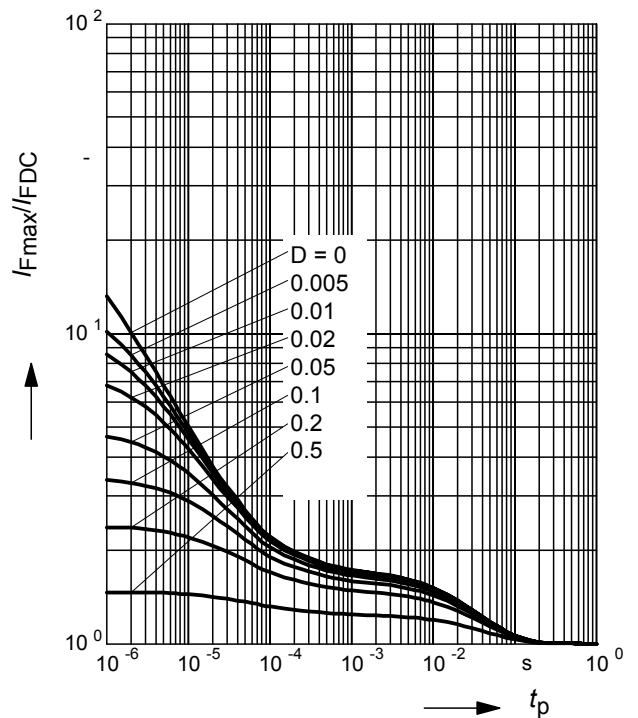
**Permissible Puls Load  $R_{thJS} = f(t_p)$**

BAS40-05W



**Permissible Pulse Load**

$I_{Fmax}/I_{FDC} = f(t_p)$  BAS40-05W





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