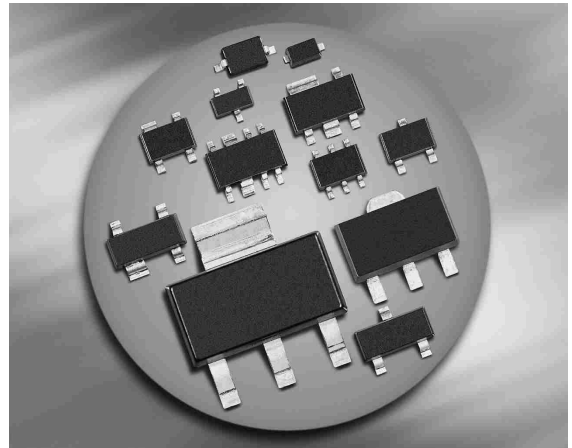
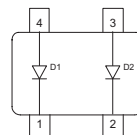
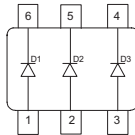
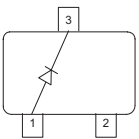


**Silicon Switching Diode**

- For high-speed switching applications


**BAS16**  
**BAS16W**
**BAS16-02L**  
**BAS16-02V**  
**BAS16-02W**  
**BAS16-03W**
**BAS16S**  
**BAS16U**
**BAS16-07L4**


Type	Package	Configuration	Marking
BAS16	SOT23	single	A6s
BAS16-02L*	TSLP-2-1	single, leadless	A6
BAS16-02V	SC79	single	6
BAS16-02W	SCD80	single	A6
BAS16-03W	SOD323	single	B
BAS16-07L4*	TSLP-4-4	parallel pair, leadless	6A
BAS16S	SOT363	parallel triple	A6s
BAS16U	SC74	parallel triple	A6s
BAS16W	SOT323	single	A6s

\* Preliminary Data

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	80	V
Peak reverse voltage	$V_{RM}$	85	
Forward current	$I_F$		mA
BAS16		250	
BAS16-02L, -07L4		200	
BAS16-02V, -02W		200	
BAS16-03W		250	
BAS16S		200	
BAS16U		200	
BAS16W		250	
Non-repetitive peak surge forward current	$I_{FSM}$		A
$t = 1 \mu\text{s}$ , BAS16/ S/ U/ W/ -03W		4.5	
$t = 1 \mu\text{s}$ , BAS16-02L/ -02V/ -02W/ -07L4		2.5	
$t = 1 \text{s}$		0.5	
Total power dissipation	$P_{tot}$		mW
BAS16, $T_S \leq 54^\circ\text{C}$		370	
BAS16-02L, -07L4, $T_S \leq 130^\circ\text{C}$		250	
BAS16-02V, -02W, $T_S \leq 120^\circ\text{C}$		250	
BAS16-03W, $T_S \leq 116^\circ\text{C}$		250	
BAS16S, $T_S \leq 85^\circ\text{C}$		250	
BAS16U, $T_S \leq 113^\circ\text{C}$		250	
BAS16W, $T_S \leq 119^\circ\text{C}$	250		
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-65 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$		K/W
BAS16, BAS16S		≤ 260	
BAS16-02L, -07L4		≤ 80	
BAS16-02V, -02W		≤ 120	
BAS16-03W		≤ 135	
BAS16U		≤ 150	
BAS16W		≤ 125	

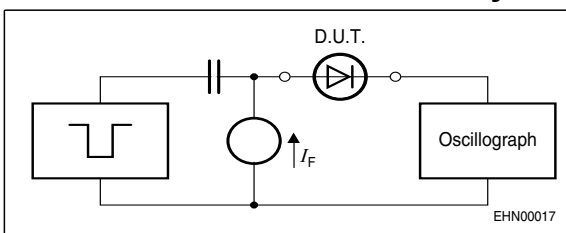
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Breakdown voltage $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$	85	-	-	V
Reverse current $V_R = 75 \text{ V}$ $V_R = 25 \text{ V}, T_A = 150^\circ\text{C}$ $V_R = 75 \text{ V}, T_A = 150^\circ\text{C}$	$I_R$	-	-	0.1 30 50	$\mu\text{A}$
Forward voltage $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 100 \text{ mA}$ $I_F = 150 \text{ mA}$	$V_F$	-	-	715 855 1000 1200 1250	mV
Forward recovery voltage $I_F = 10 \text{ mA}, t_P = 20 \text{ ns}$	$V_{fr}$	-	-	1.75	V

<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>AC Characteristics</b>					
Diode capacitance $V_R = 0\text{ V}, f = 1\text{ MHz}$	$C_T$	-	-	2	pF
Reverse recovery time $I_F = 10\text{ mA}, I_R = 10\text{ mA}$ , measured at $I_R = 1\text{ mA}$ , $R_L = 100\ \Omega$	$t_{rr}$	-	-	4	ns

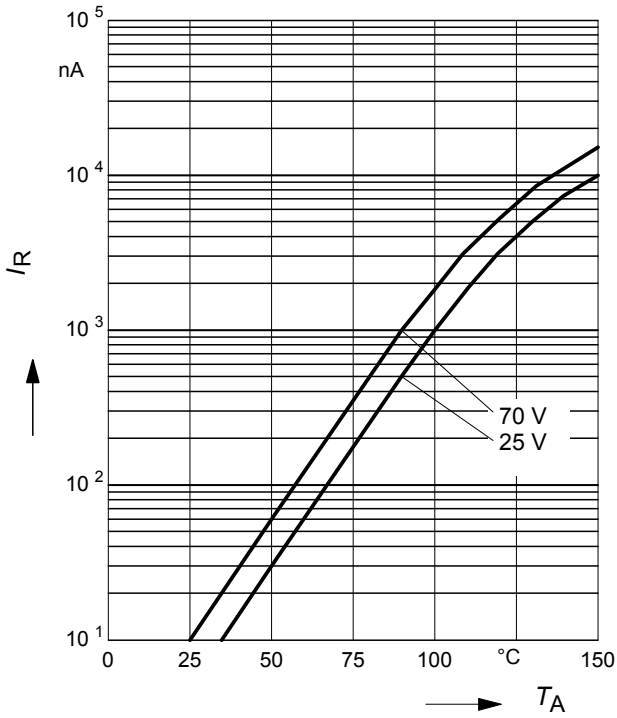
**Test circuit for reverse recovery time**


Pulse generator:  $t_p = 100\text{ ns}$ ,  $D = 0.05$ ,  $t_r = 0.6\text{ ns}$ ,  
 $R_i = 50\ \Omega$

Oscilloscope:  $R = 50\ \Omega$ ,  $t_r = 0.35\text{ ns}$ ,  $C = 0.05\text{ pF}$

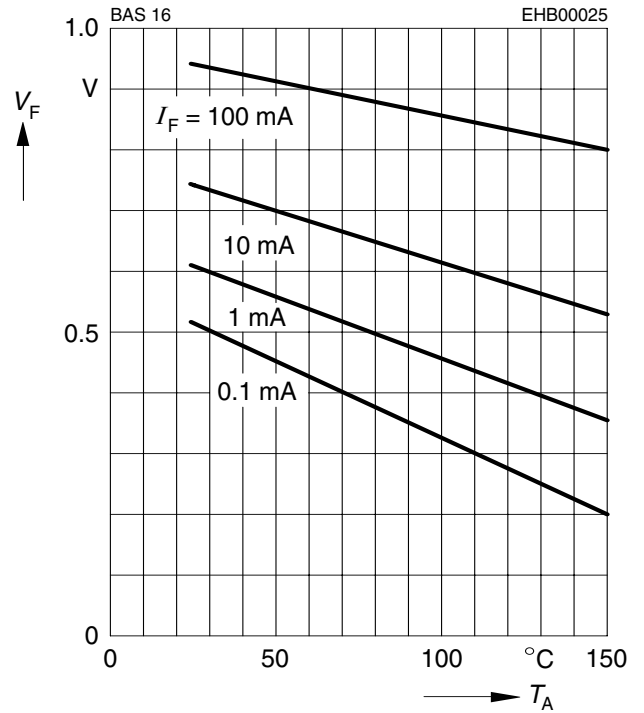
**Reverse current  $I_R = f(T_A)$**

$V_R = \text{Parameter}$



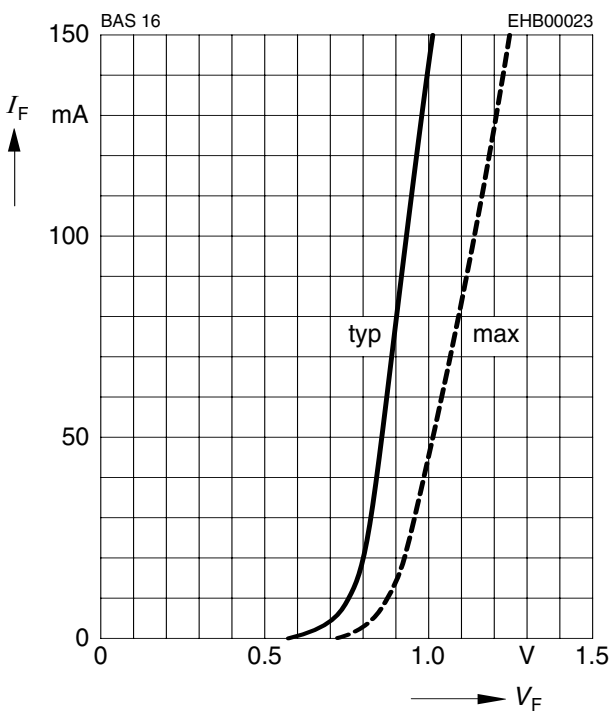
**Forward Voltage  $V_F = f(T_A)$**

$I_F = \text{Parameter}$



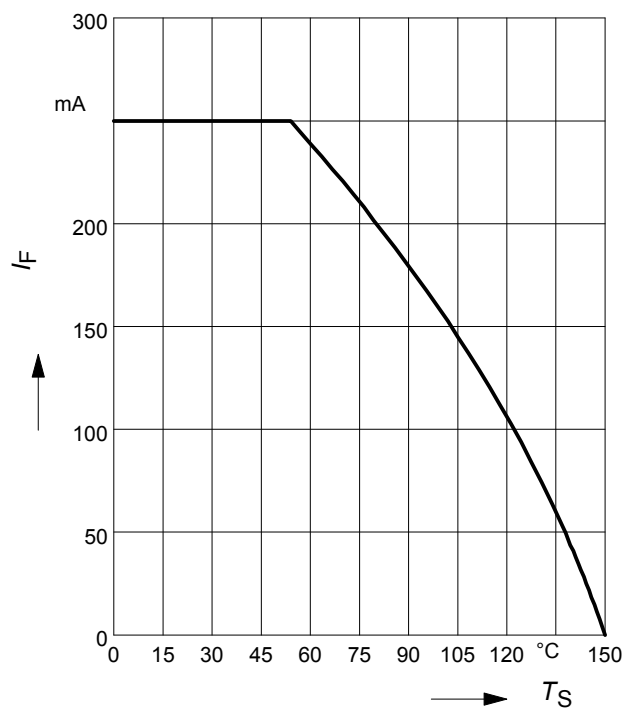
**Forward current  $I_F = f(V_F)$**

$T_A = 25^\circ\text{C}$



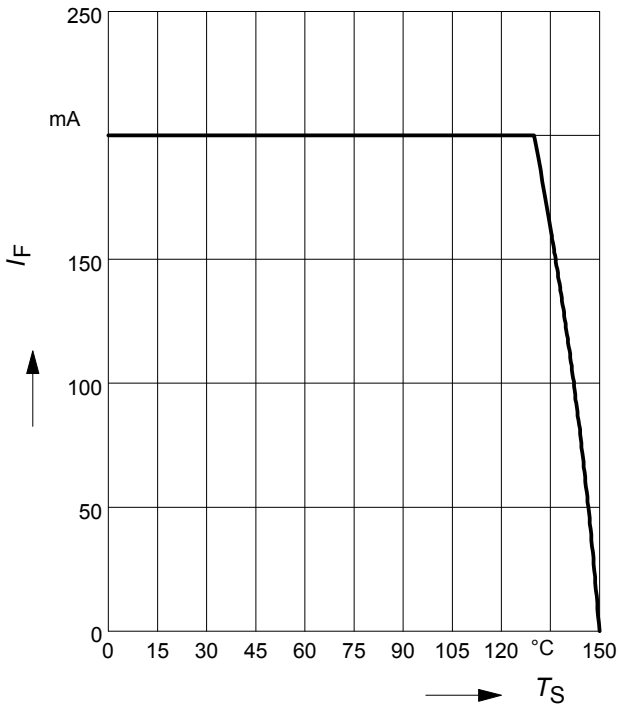
**Forward current  $I_F = f(T_S)$**

BAS16



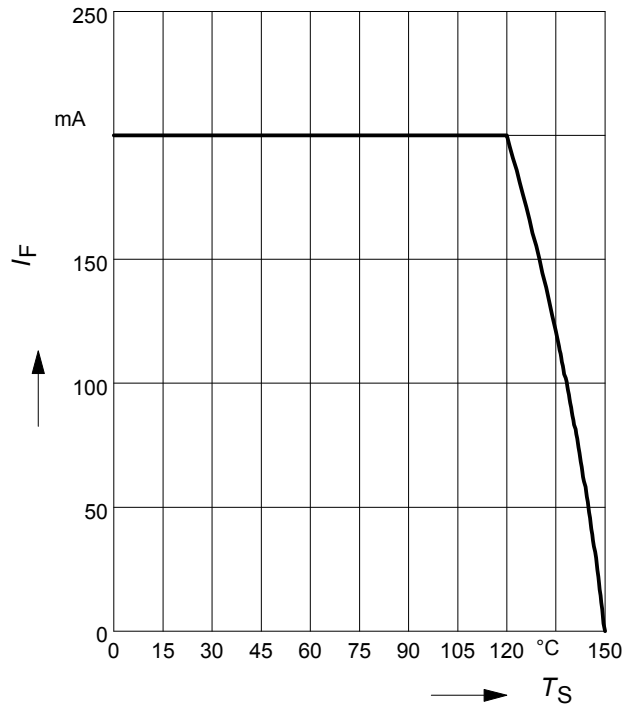
**Forward current  $I_F = f(T_S)$**

BAS16-02L, -07L4



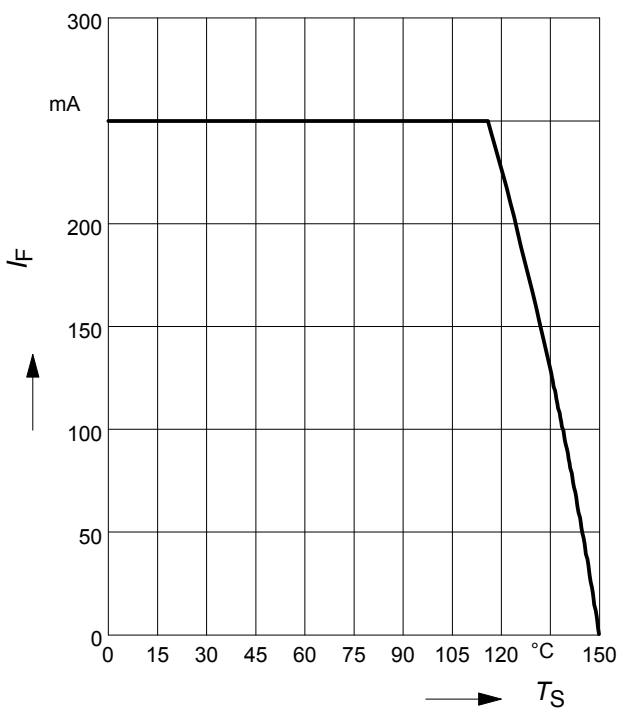
**Forward current  $I_F = f(T_S)$**

BAS16-02V, -02W



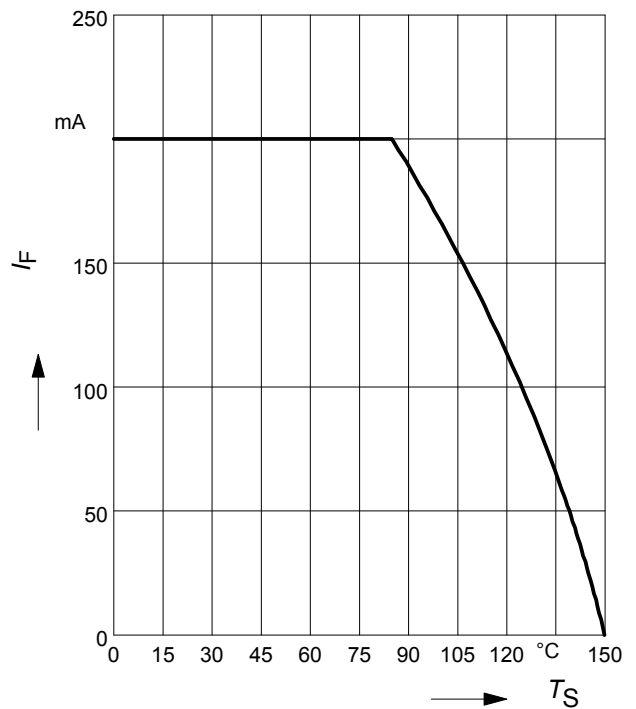
**Forward current  $I_F = f(T_S)$**

BAS16-03W



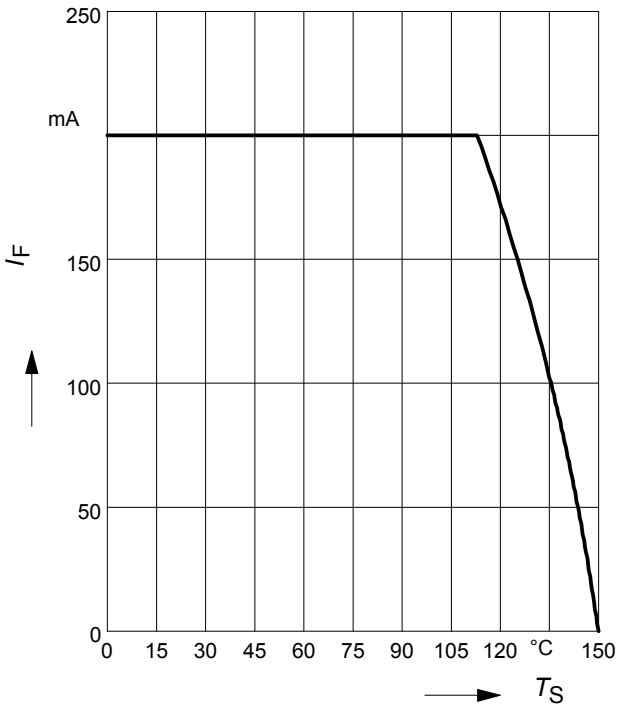
**Forward current  $I_F = f(T_S)$**

BAS16S



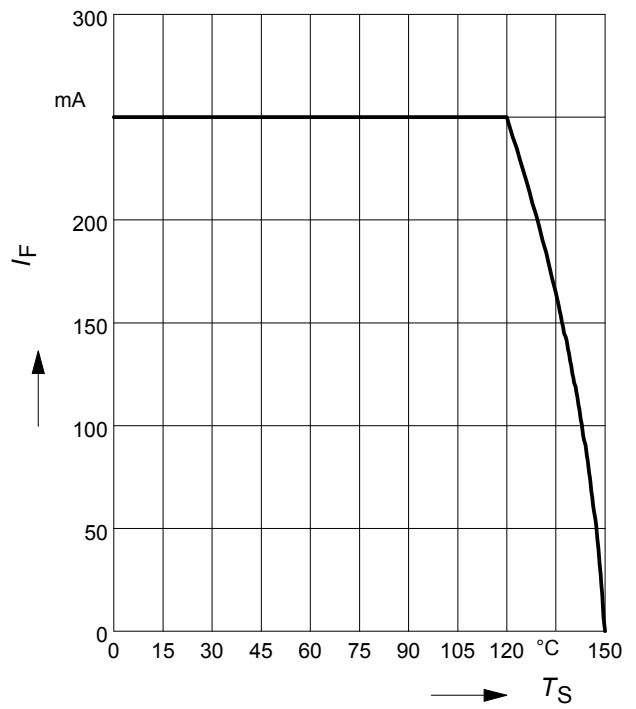
**Forward current  $I_F = f(T_S)$**

BAS16U



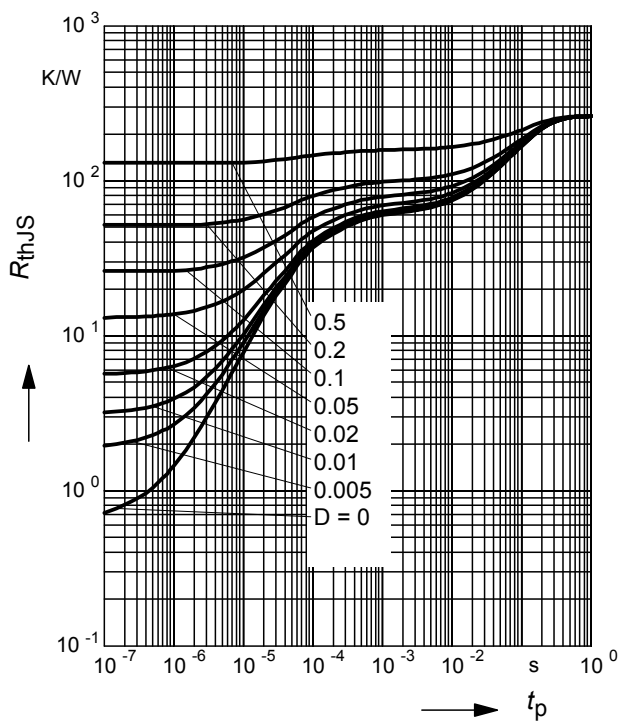
**Forward current  $I_F = f(T_S)$**

BAS16W



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

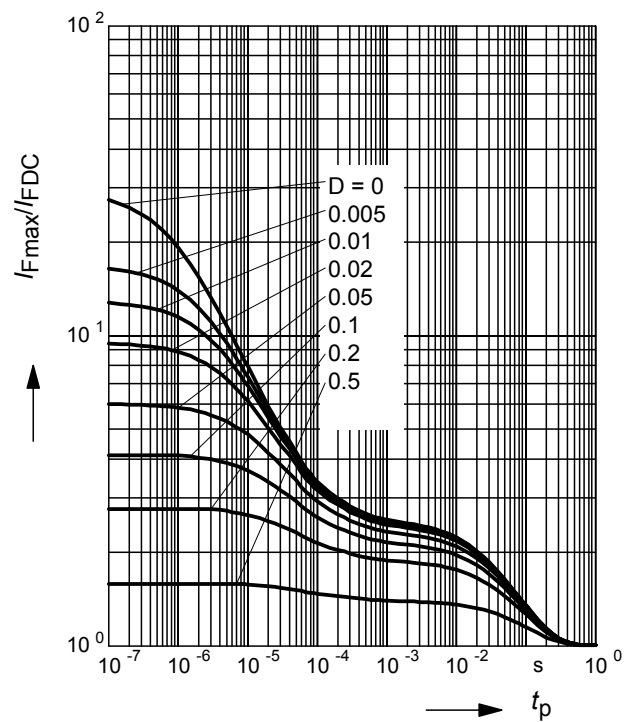
BAS16



**Permissible Pulse Load**

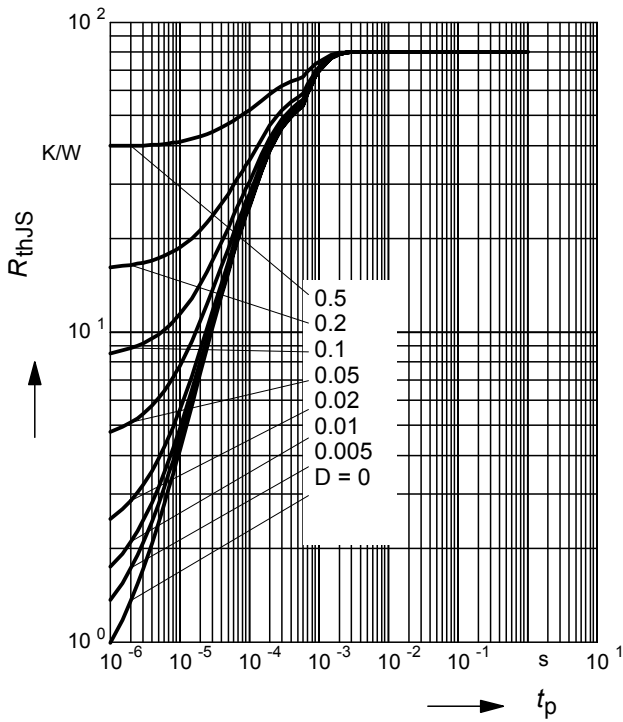
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16



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

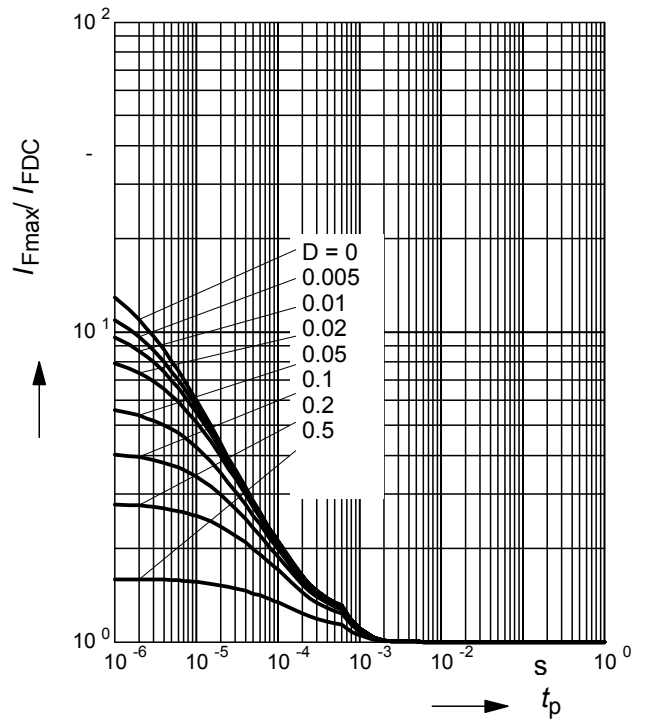
BAS16-02L, -07L4



**Permissible Pulse Load**

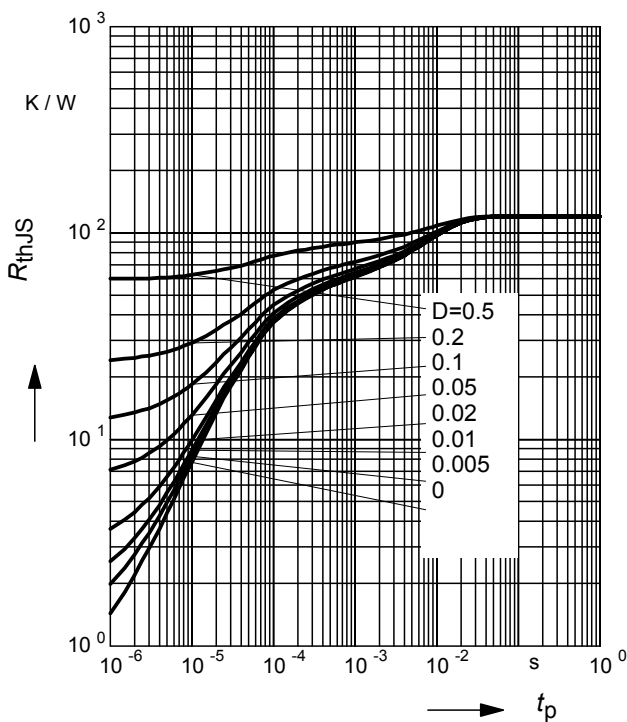
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16-02L, -07L4



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

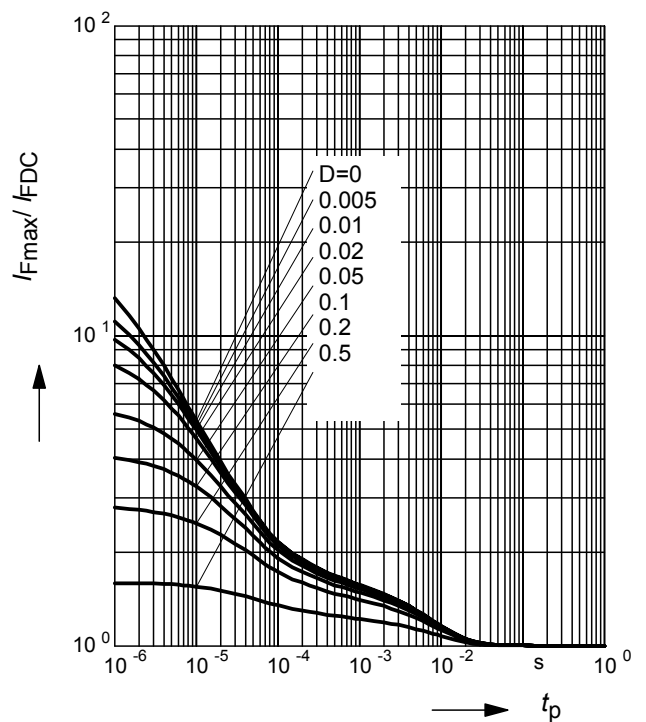
BAS16-02V, -02W



**Permissible Pulse Load**

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

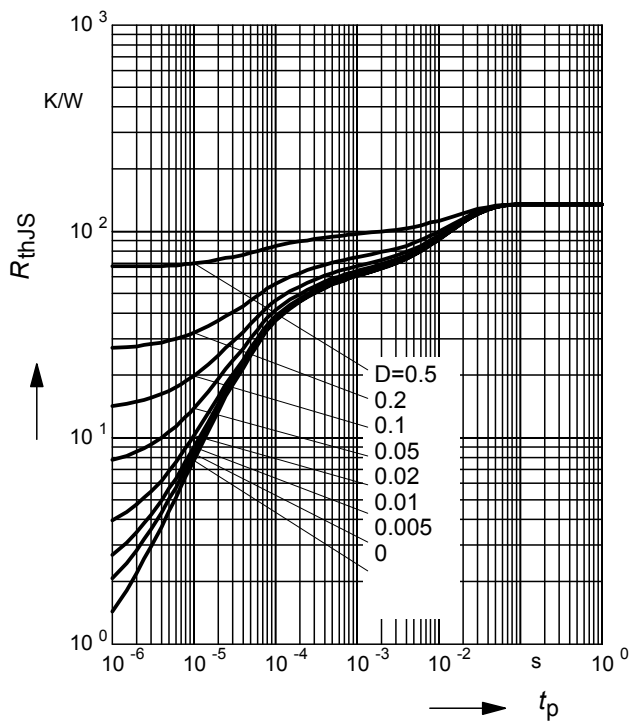
BAS16-02V, -02W





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

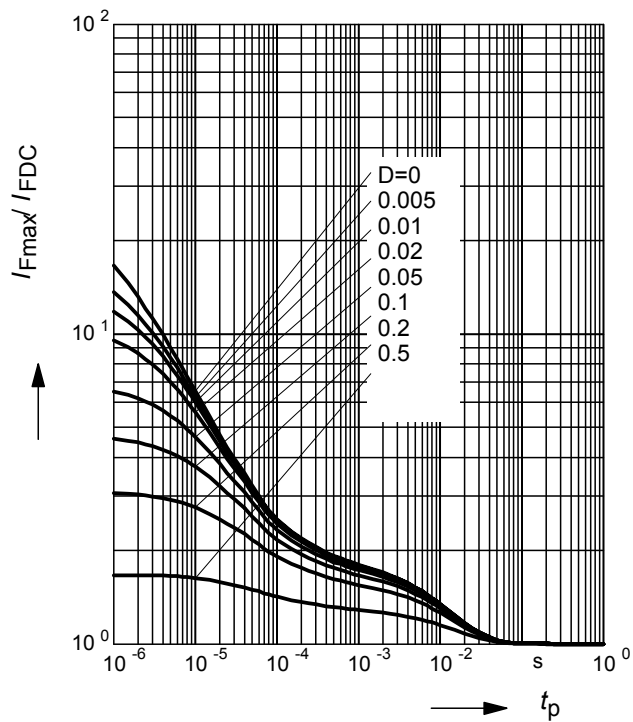
BAS16-03W



**Permissible Pulse Load**

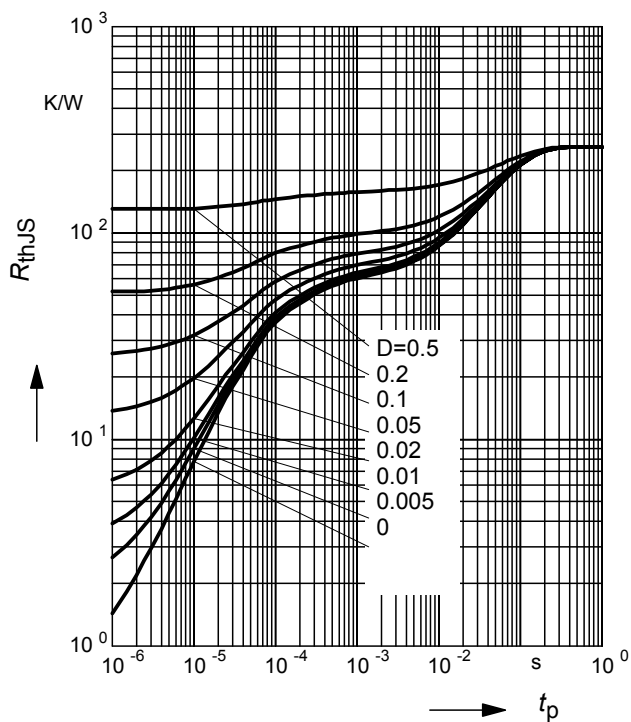
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16-03W



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

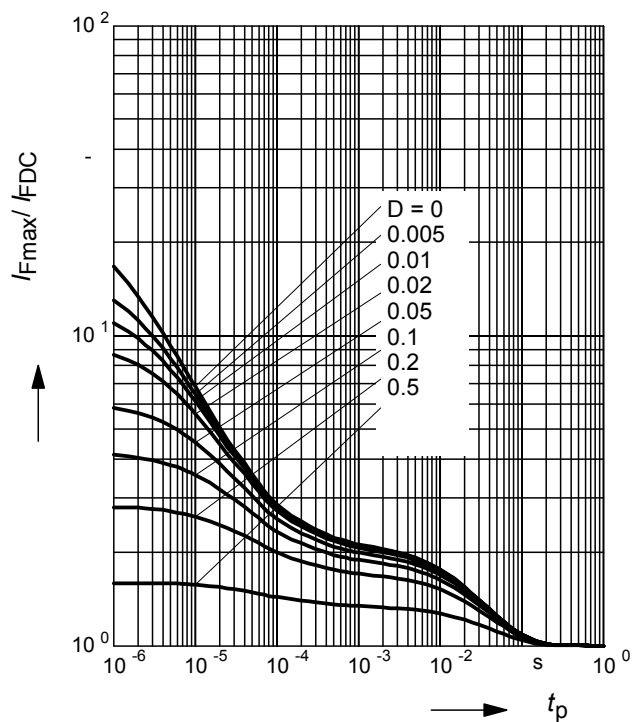
BAS16S



**Permissible Pulse Load**

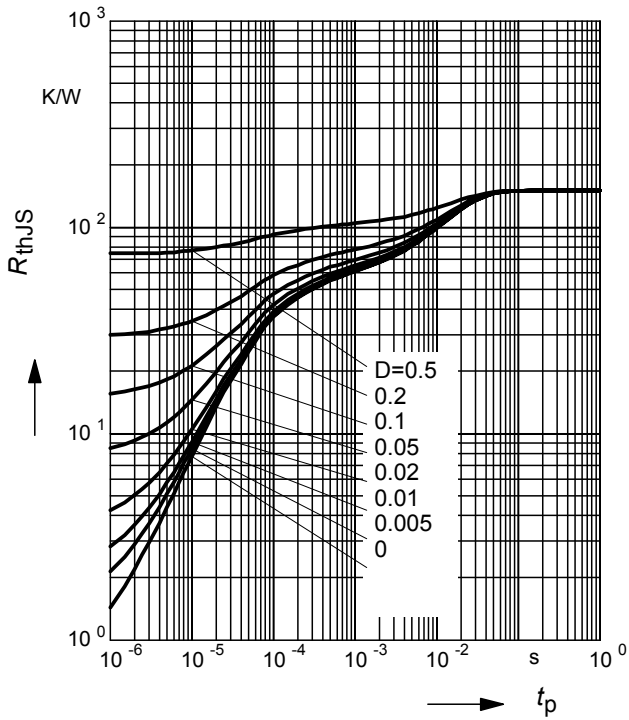
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16S



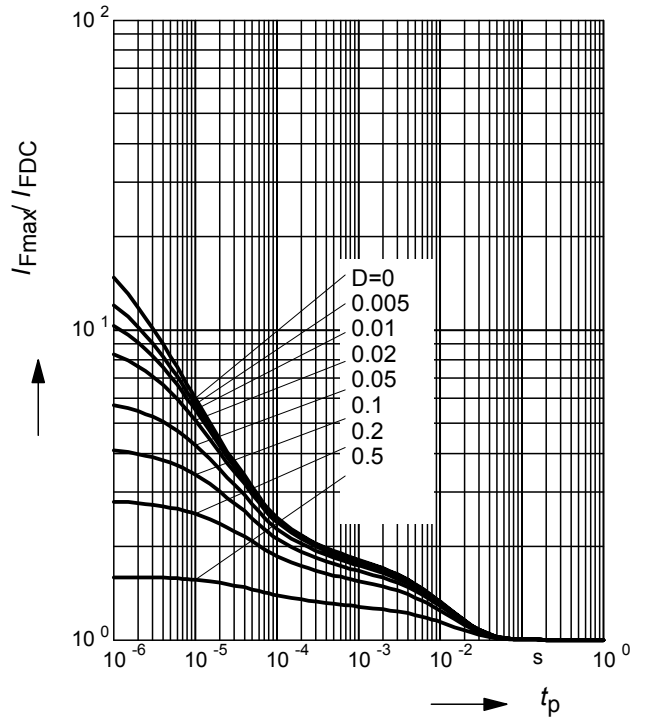
**Permissible Puls Load  $R_{thJS} = f(t_p)$**

BAS16U



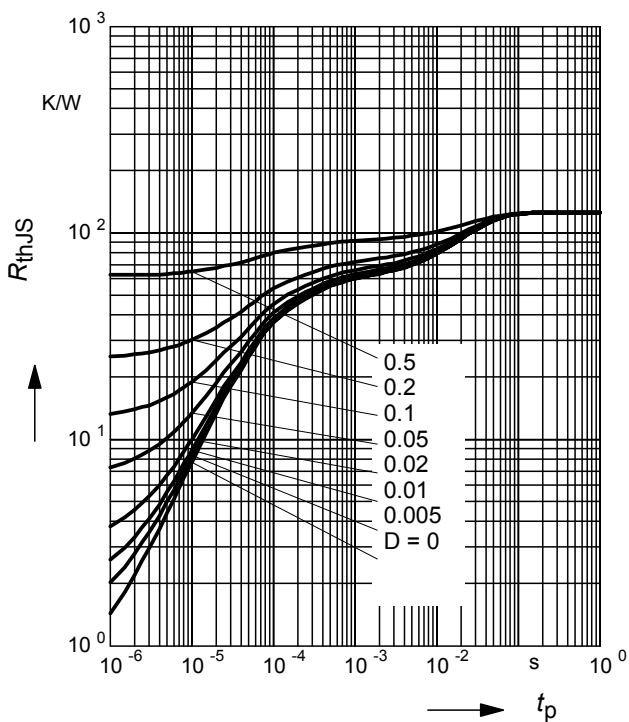
**Permissible Pulse Load  $I_{Fmax}/I_{FDC} = f(t_p)$**

BAS16U



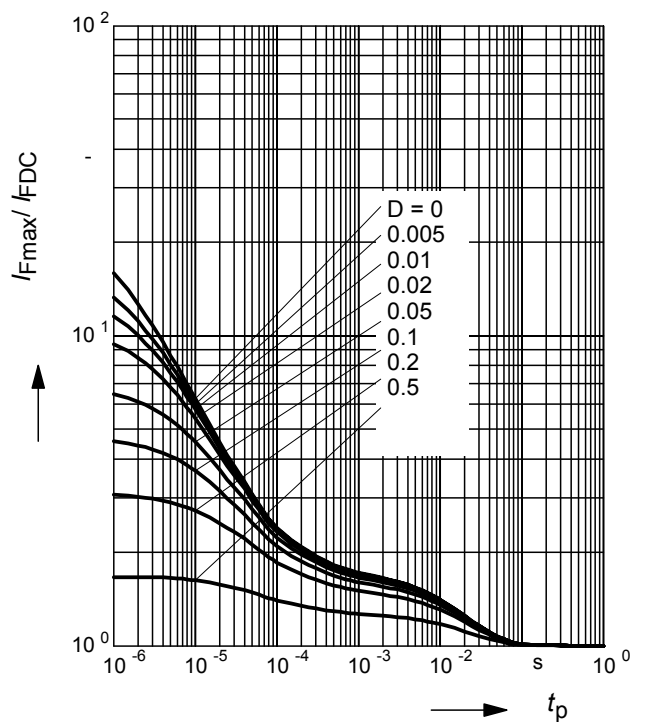
**Permissible Puls Load  $R_{thJS} = f(t_p)$**

BAS16W



**Permissible Pulse Load  $I_{Fmax}/I_{FDC} = f(t_p)$**

BAS16W



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