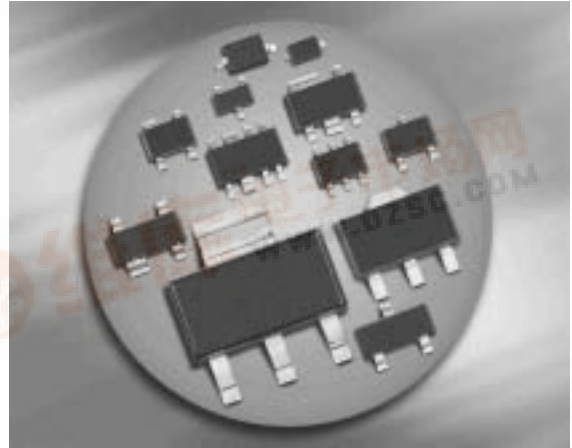




**BAW56...**

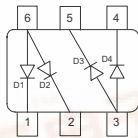
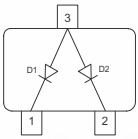
**Silicon Switching Diode**

- For high-speed switching applications
- Common anode configuration



**BAW56**  
**BAW56T**  
**BAW56W**

**BAW56S**  
**BAW56U**



Type	Package	Configuration	Marking
BAW56	SOT23	common anode	A1s
BAW56S	SOT363	double common anode	A1s
BAW56T	SC75	common anode	A1s
BAW56U	SC74	double common anode	A1s
BAW56W	SOT323	common anode	A1s

**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	$I_F$	200	mA
Surge forward current, $t = 1 \mu\text{s}$	$I_{FS}$	4.5	A
Total power dissipation	$P_{tot}$		mW
BAW56, $T_S \leq 31^\circ\text{C}$		330	
BAW56S, $T_S \leq 85^\circ\text{C}$		250	
BAW56T, $T_S \leq 104^\circ\text{C}$		250	
BAW56U, $T_S \leq 90^\circ\text{C}$		250	
BAW56W, $T_S \leq 103^\circ\text{C}$		250	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-65 ... 150	

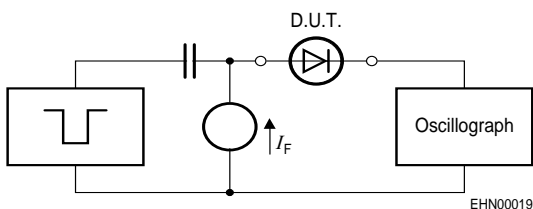
**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$		K/W
BAW56		360	
BAW56S		260	
BAW56T		185	
BAW56U		240	
BAW56W		190	

<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 $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$	85	-	-	V
Reverse current $V_R = 70 \text{ V}$ $V_R = 25 \text{ V}, T_A = 150^\circ\text{C}$ $V_R = 70 \text{ V}, T_A = 150^\circ\text{C}$	$I_R$	-	-	0.15 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
<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

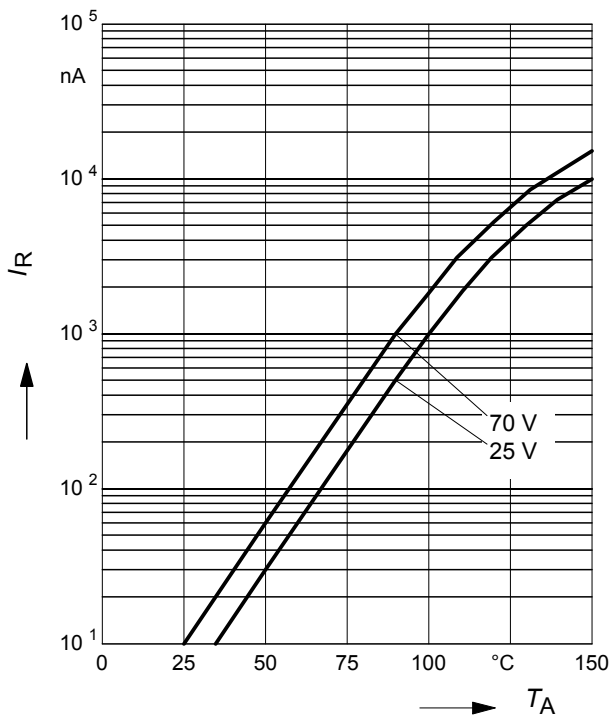
**Test circuit for reverse recovery time**


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

Oscilloscope:  $R = 50\Omega$ ,  $t_r = 0.35\text{ns}$ ,  $C \leq 1\text{pF}$

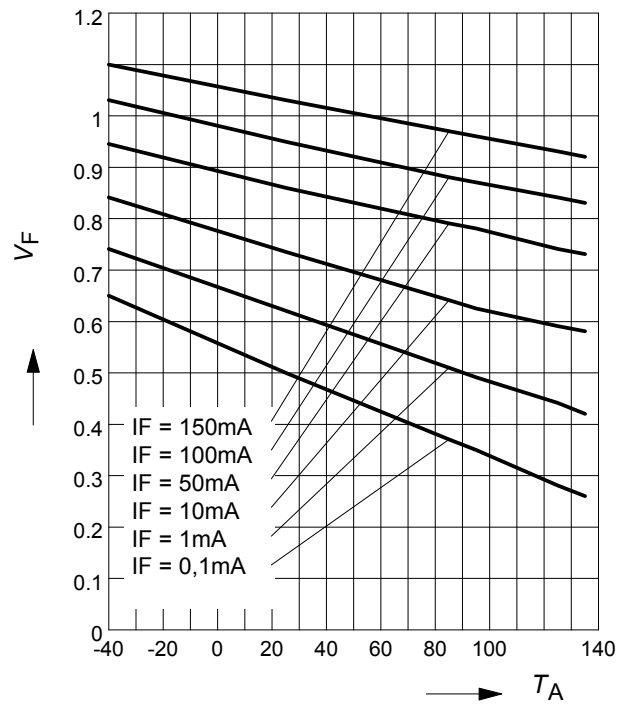
**Reverse current  $I_R = f(T_A)$**

$V_R = \text{Parameter}$



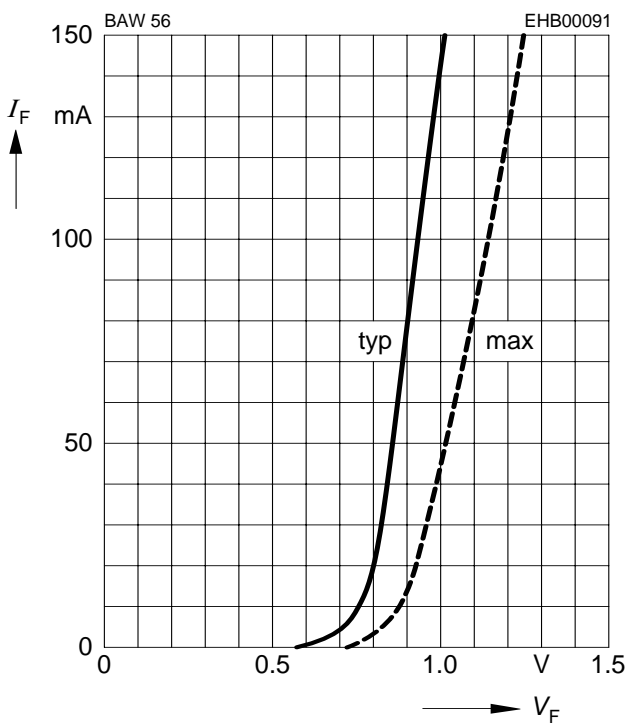
**Forward Voltage  $V_F = f(T_A)$**

$I_F = \text{Parameter}$



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

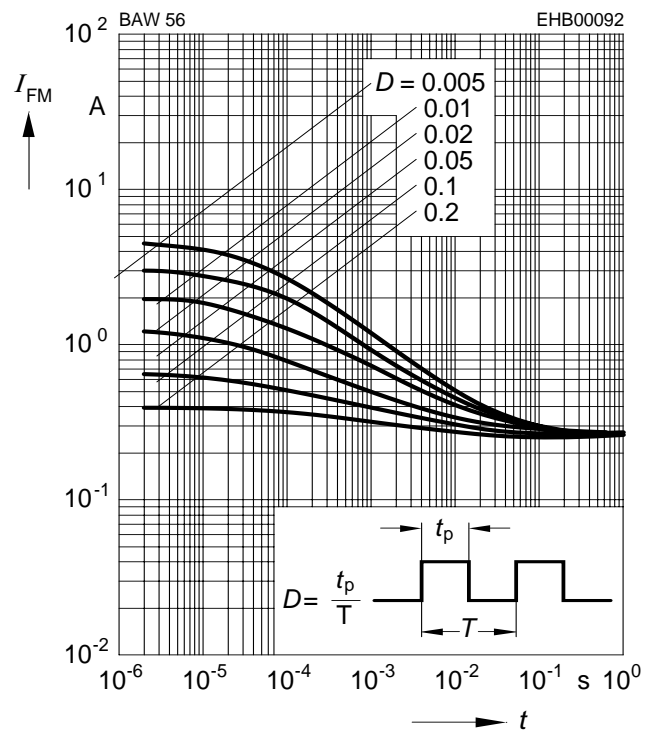
$T_A = 25^\circ\text{C}$



**Peak forward current  $I_{FM} = f(t_p)$**

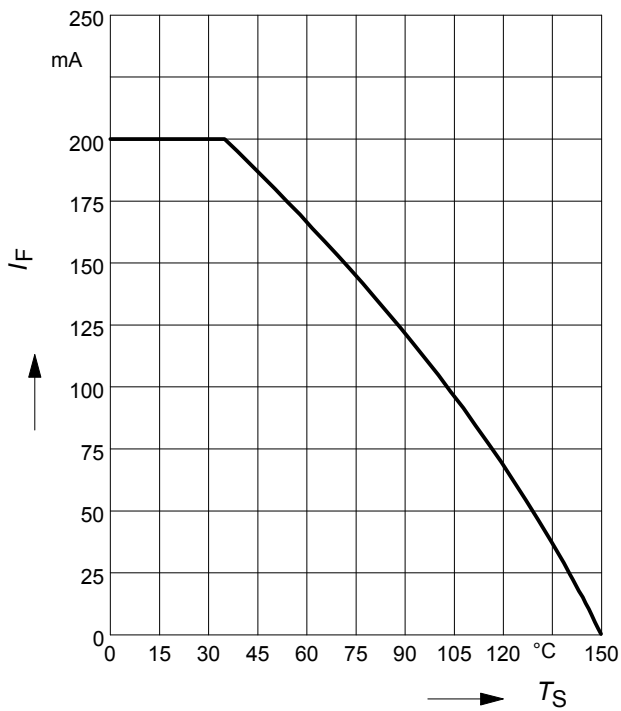
$T_A = 25^\circ\text{C}$

BAW56



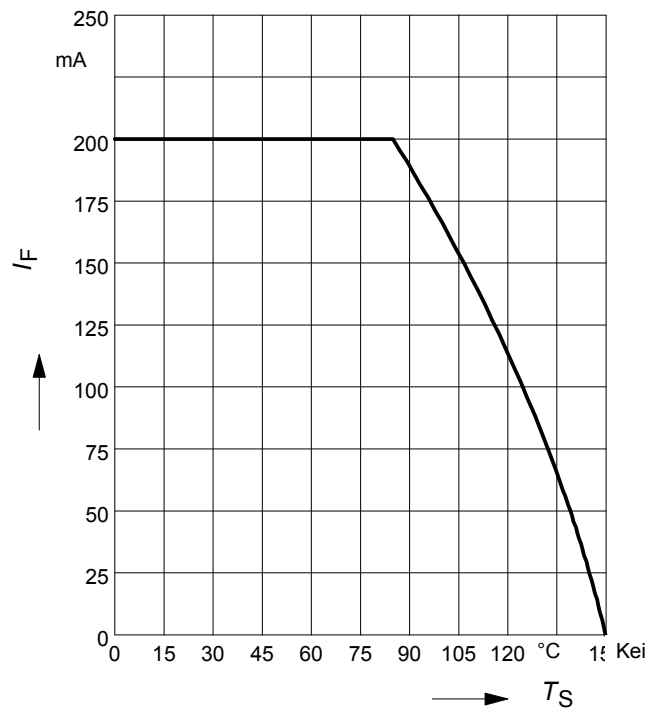
**Forward current  $I_F = f(T_S)$**

BAW56



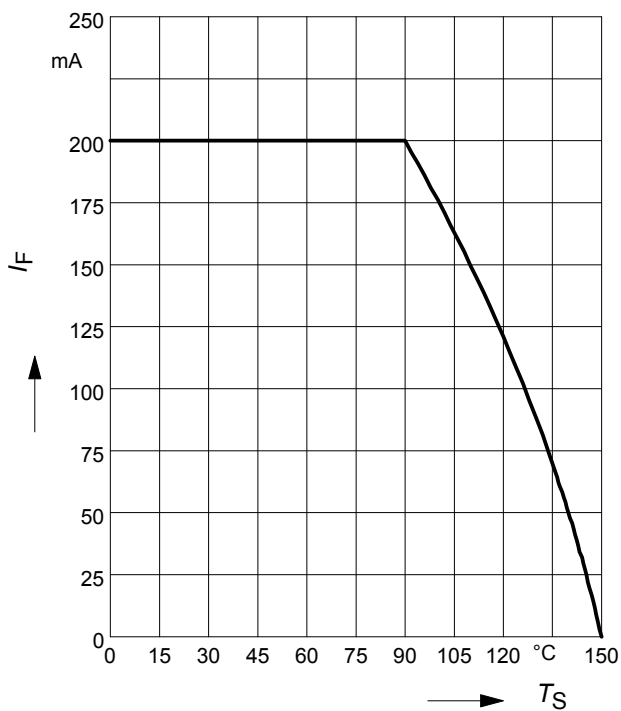
**Forward current  $I_F = f(T_S)$**

BAW56S



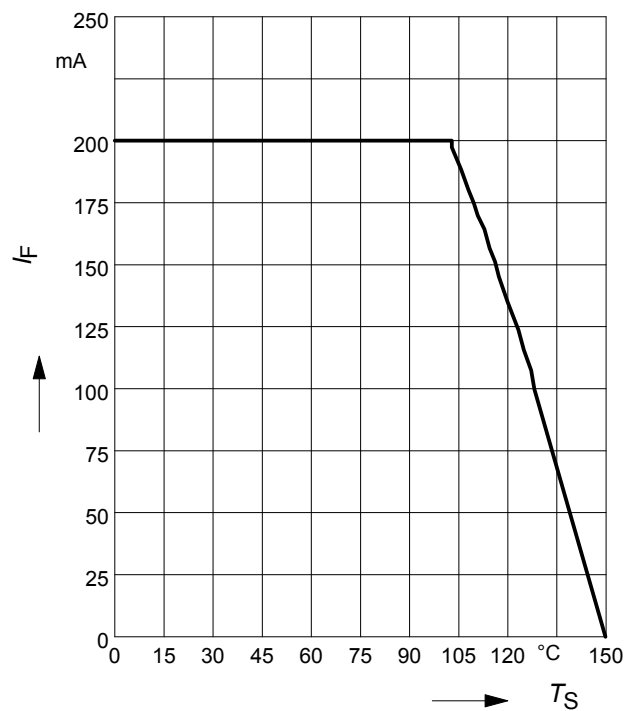
**Forward current  $I_F = f(T_S)$**

BAW56U



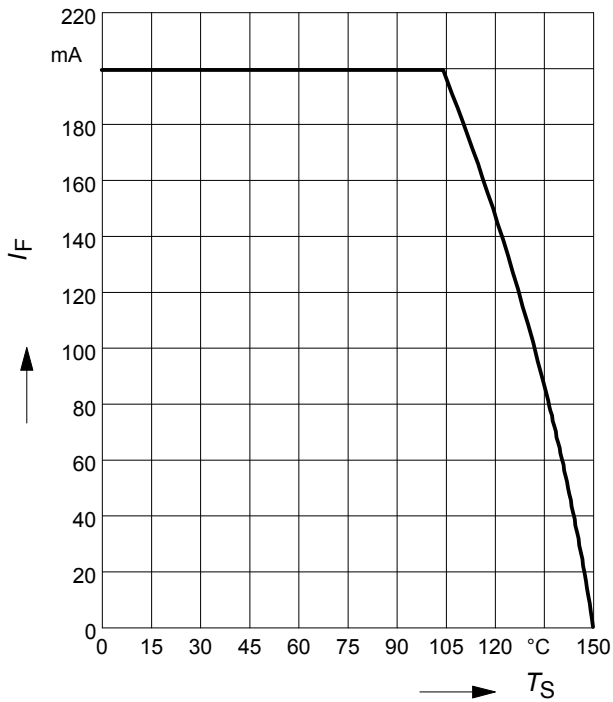
**Forward current  $I_F = f(T_S)$**

BAW56W



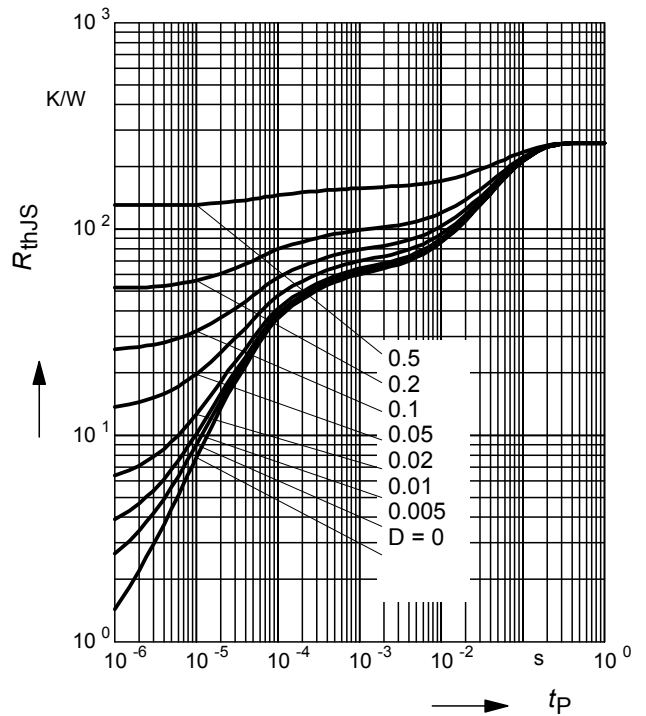
**Forward current  $I_F = f(T_S)$**

BAW56T



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

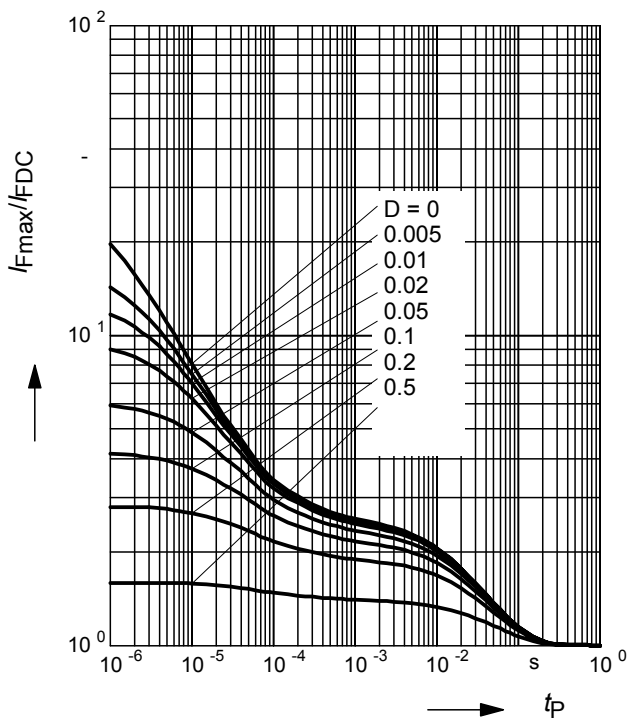
BAW56S



**Permissible Pulse Load**

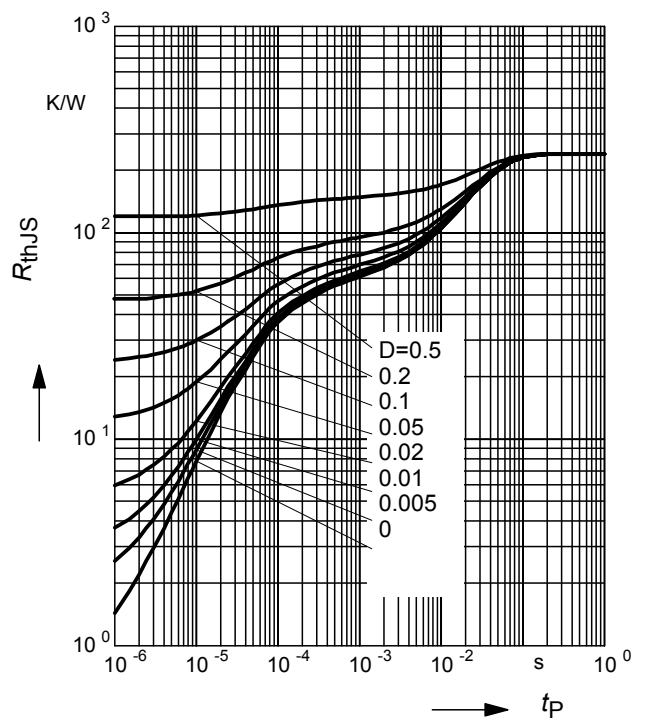
$I_{Fmax} / I_{FDC} = f(t_p)$

BAW56S



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

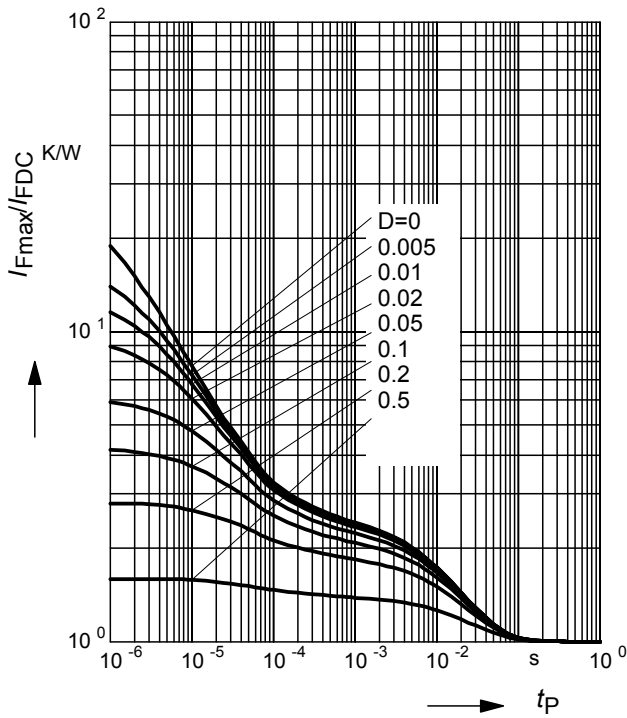
BAW56U



**Permissible Pulse Load**

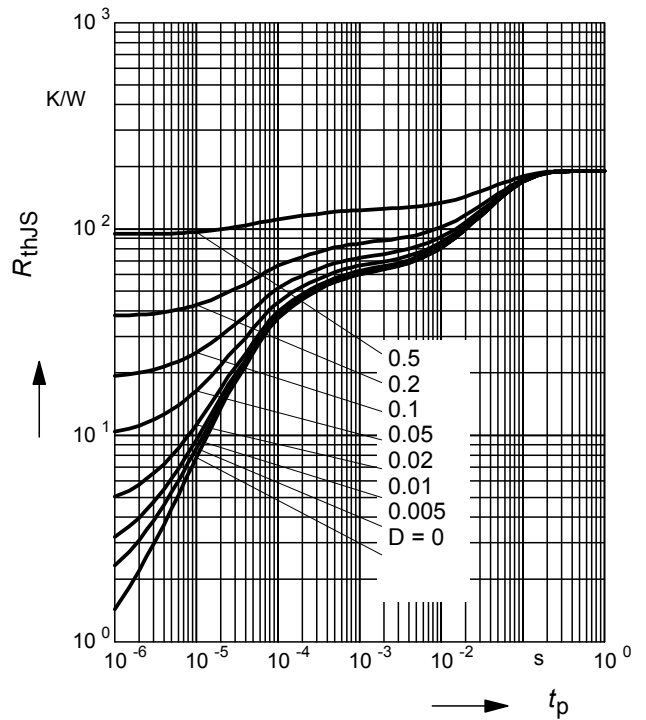
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAW56U



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

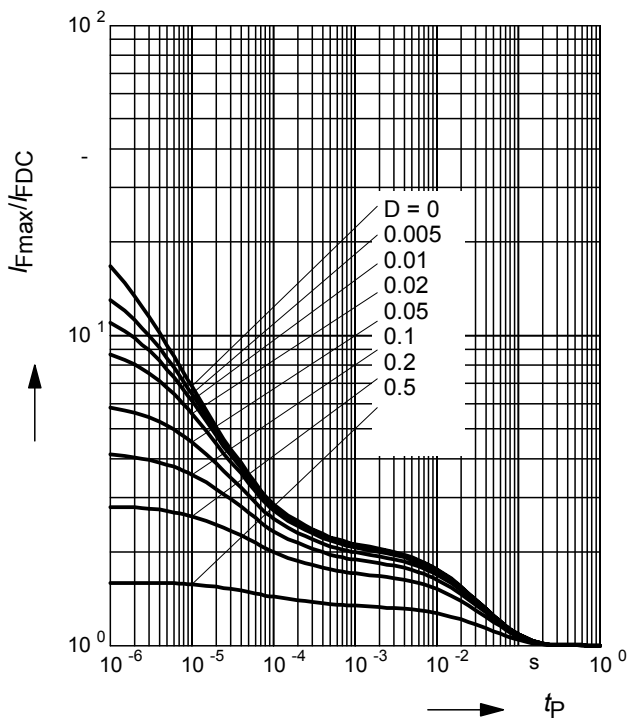
BAW56W



**Permissible Pulse Load**

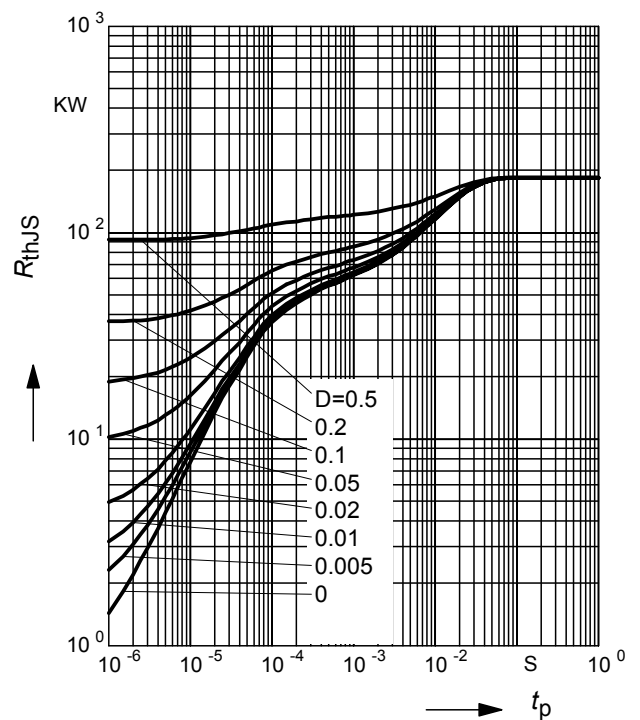
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAW56W



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

BAW56T



**Permissible Pulse Load**

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

BAW56T

