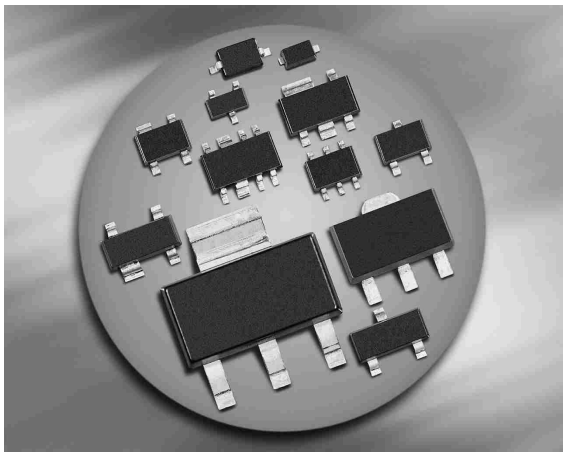
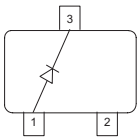
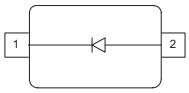
Silicon Switching Diode

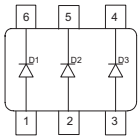
- For high-speed switching applications

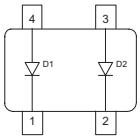


BAS16 **BAS16-02L** **BAS16S** **BAS16-07L4**
BAS16W **BAS16-02V** **BAS16U**
BAS16-02W
BAS16-03W









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°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		200	
BAS16-02V, BAS16-02W		200	
BAS16-03W		250	
BAS16S		200	
BAS16U		200	
BAS16W		250	
BAS16-07L4		200	
Surge forward current	I_{FSM}		
t = 1 µs, BAS16/ S/ U/ W/ -03W		4.5	
t = 1 µs, BAS16-02L/ -02V/ -02W/ -07L4		2.5	
Total power dissipation	P_{tot}		mW
BAS16, $T_S \leq$ 54 °C		370	
BAS16-02L, $T_S \leq$ 130 °C		250	
BAS16-02V, BAS16-02W, $T_S \leq$ 120 °C		250	
BAS16-03W, $T_S \leq$ 116 °C		250	
BAS16S, $T_S \leq$ 85 °C		250	
BAS16U, $T_S \leq$ 113 °C		250	
BAS16W, $T_S \leq$ 119 °C		250	
BAS16-07L4, $T_S \leq$ tbd		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

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

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

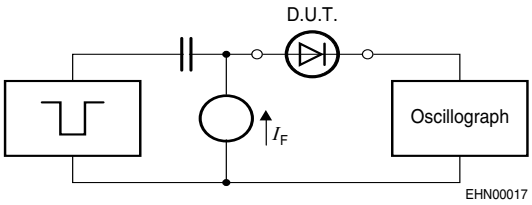
Electrical Characteristics at T_A = 25°C, unless otherwise specified

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

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance V_R = 0 V, f = 1 MHz	C_T	-	-	2	pF
Reverse recovery time I_F = 10 mA, I_R = 10 mA, measured at I_R = 1mA , R_L = 100 Ω	t_{rr}	-	-	4	ns

Test circuit for reverse recovery time

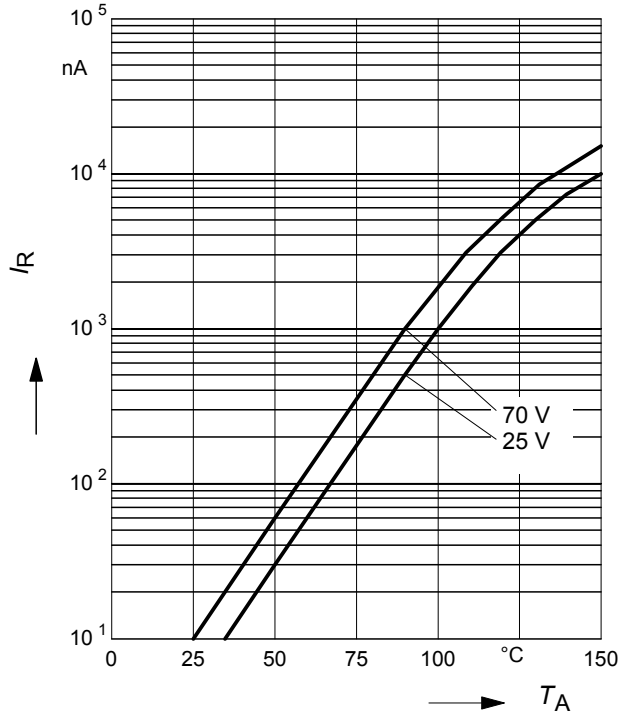


Pulse generator: t_p = 100ns, D = 0.05, t_r = 0.6ns, R_i = 50Ω

Oscillograph: R = 50Ω, t_r = 0.35ns, C = 0.05pF

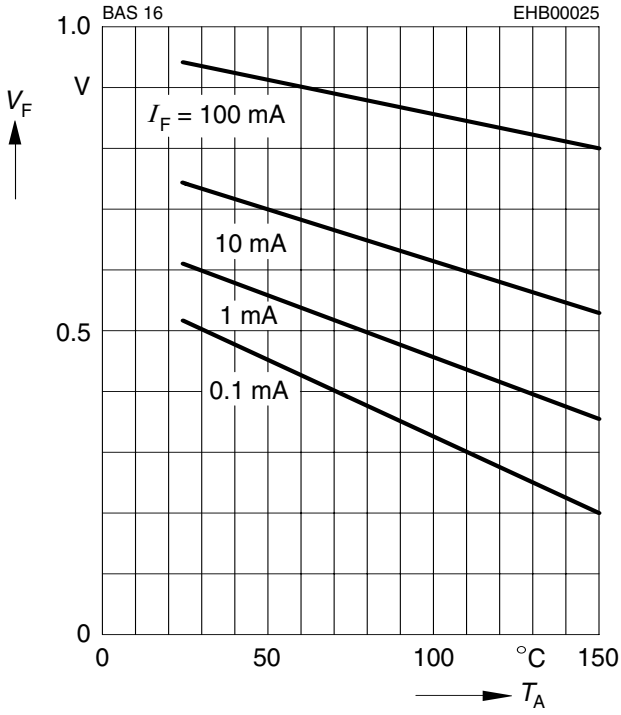
Reverse current $I_R = f(T_A)$

V_R = Parameter



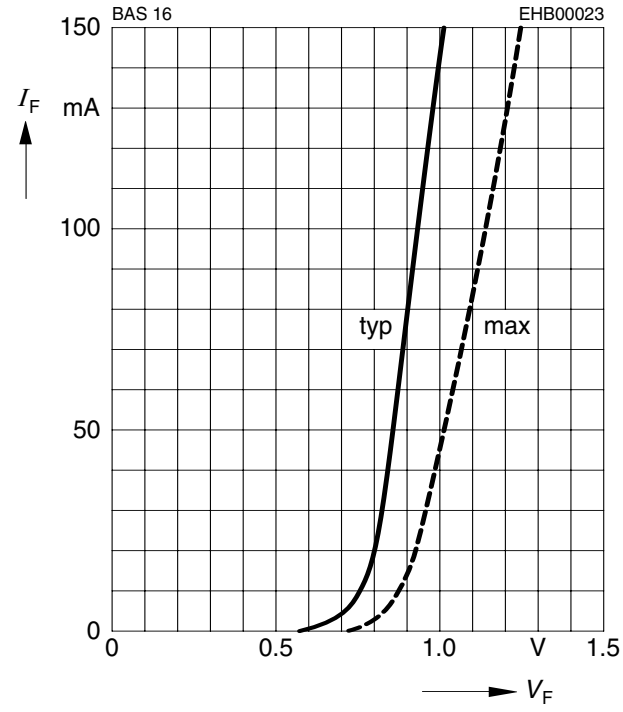
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



Forward current $I_F = f(V_F)$

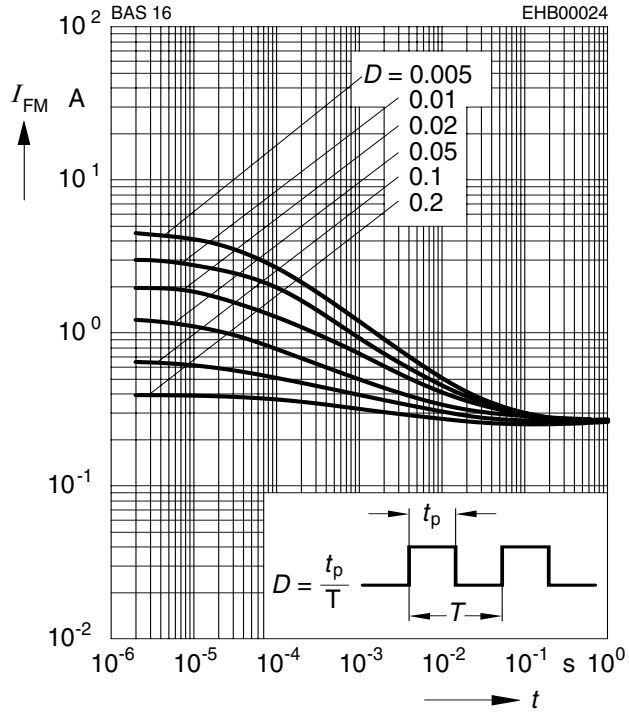
T_A = 25°C



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

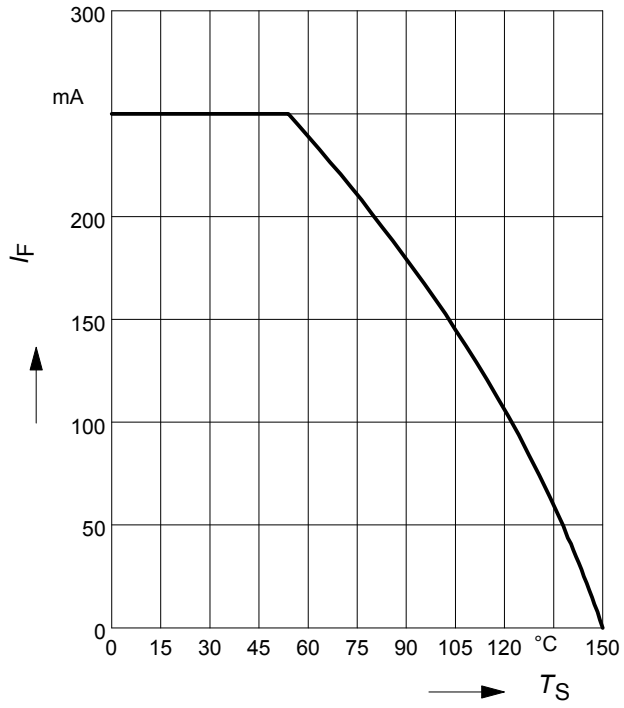
T_A = 25°C

BAS16



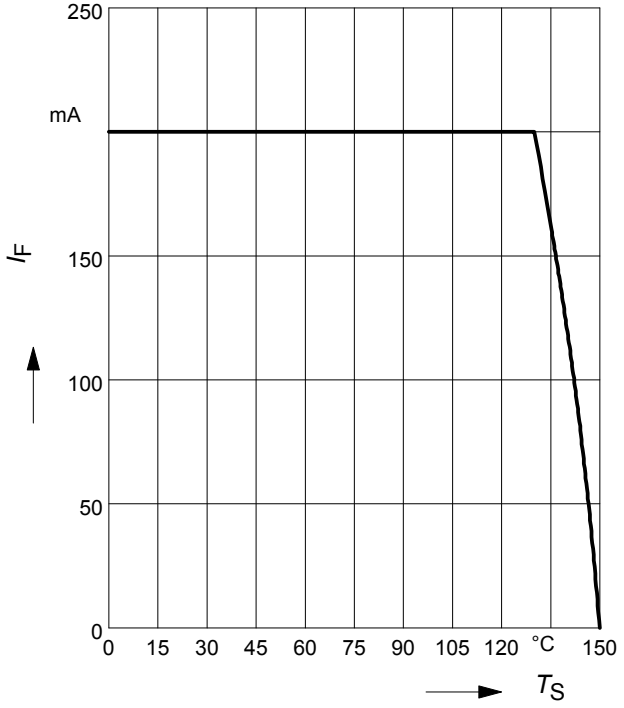
Forward current $I_F = f(T_S)$

BAS16



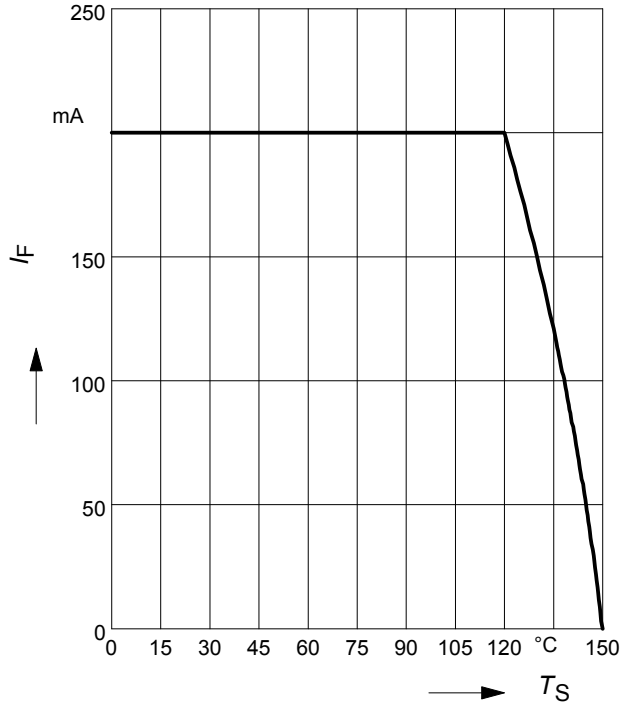
Forward current $I_F = f(T_S)$

BAS16-02L



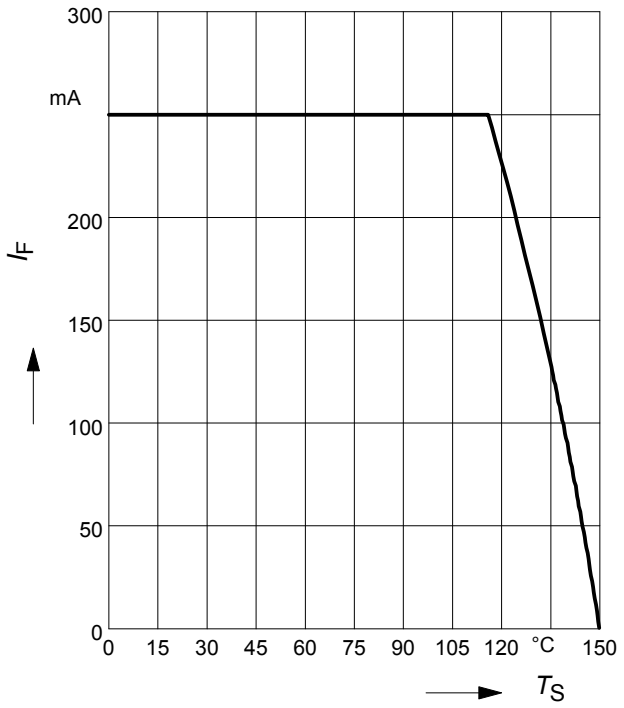
Forward current $I_F = f(T_S)$

BAS16-02V, BAS16-02W

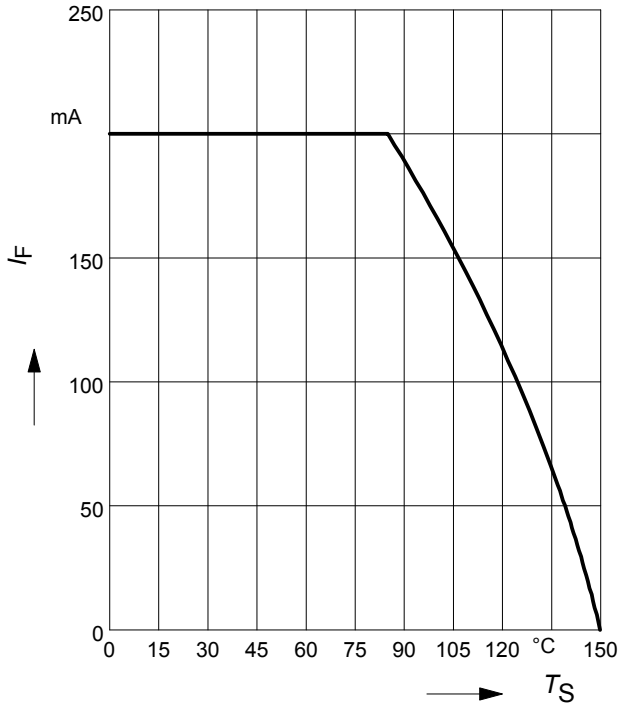


Forward current $I_F = f(T_S)$

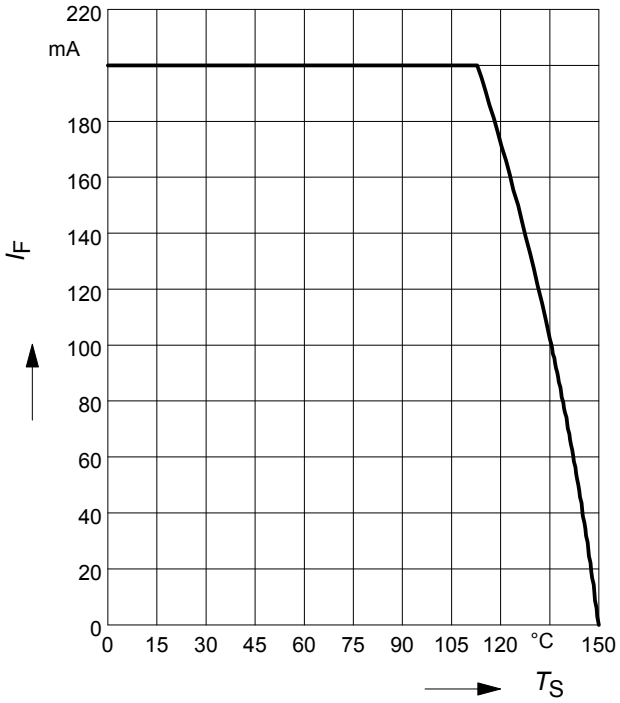
BAS16-03W



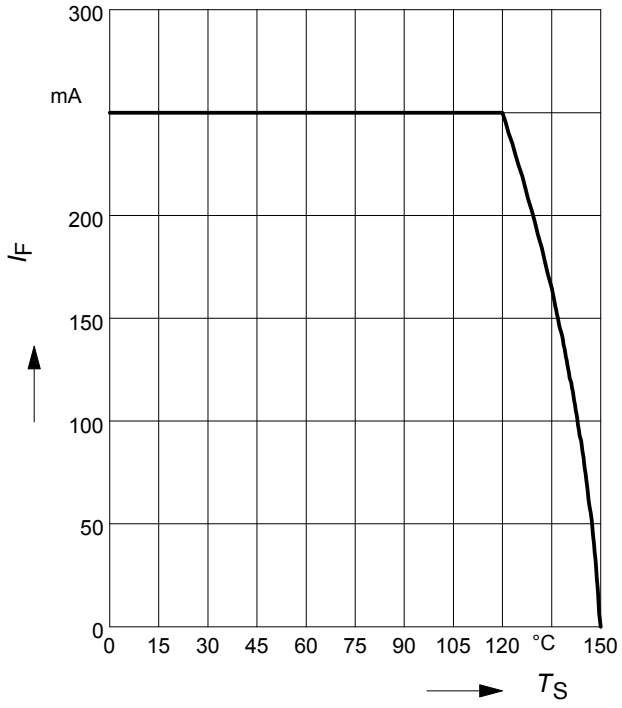
Forward current $I_F = f(T_S)$
BAS16S



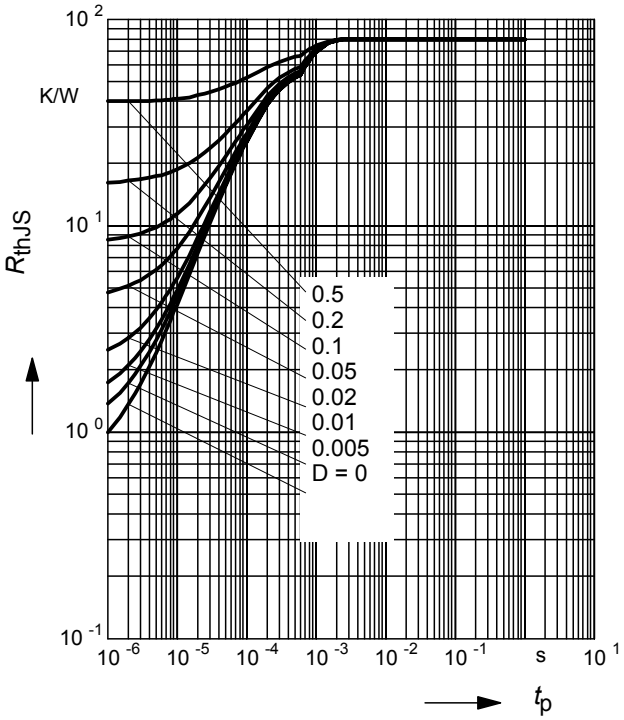
Forward current $I_F = f(T_S)$
BAS16U



Forward current $I_F = f(T_S)$
BAS16W



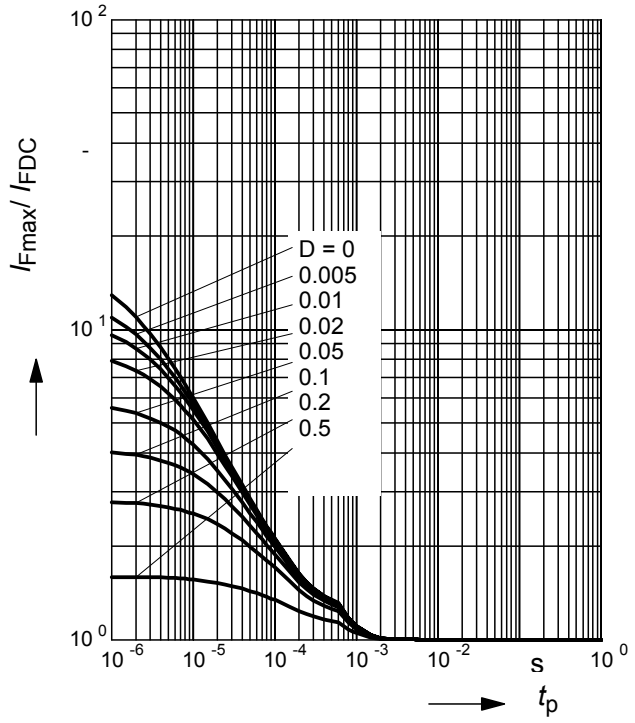
Permissible Puls Load $R_{thJS} = f(t_p)$
BAS16-02L



Permissible Pulse Load

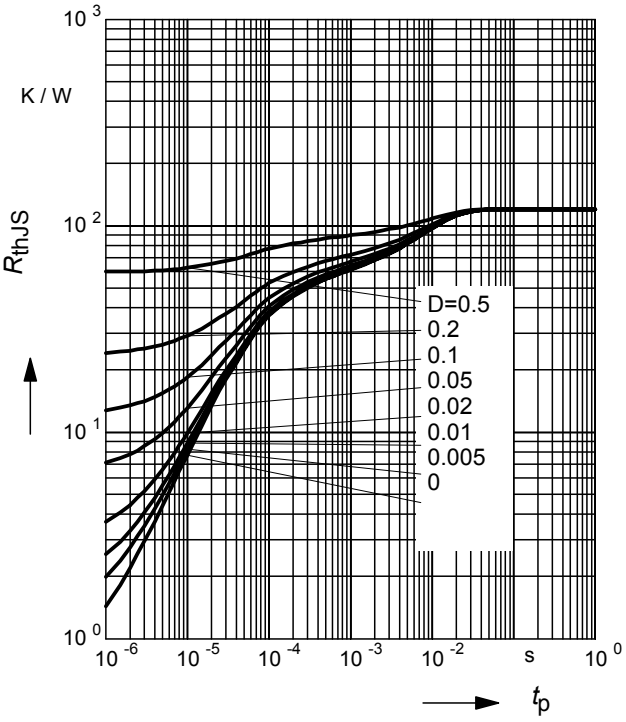
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS16-02L



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

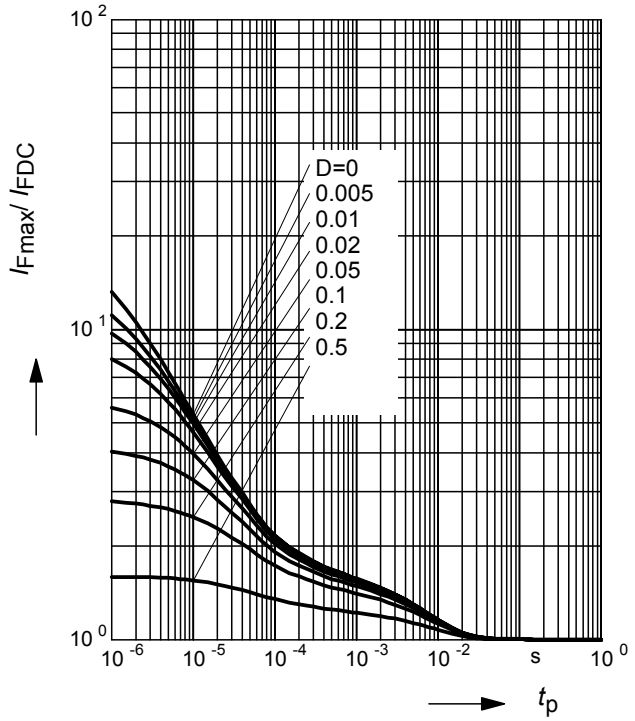
BAS16-02V, BAS16-02W



Permissible Pulse Load

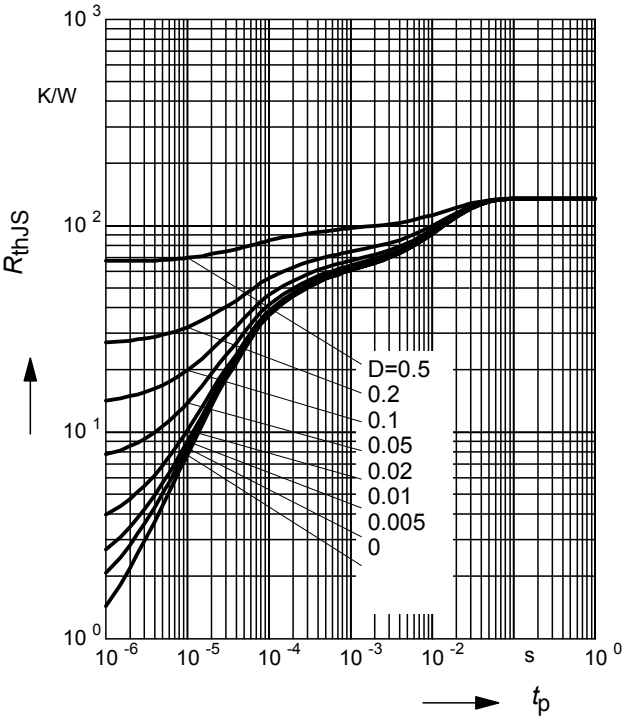
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS16-02V, BAS16-02W



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

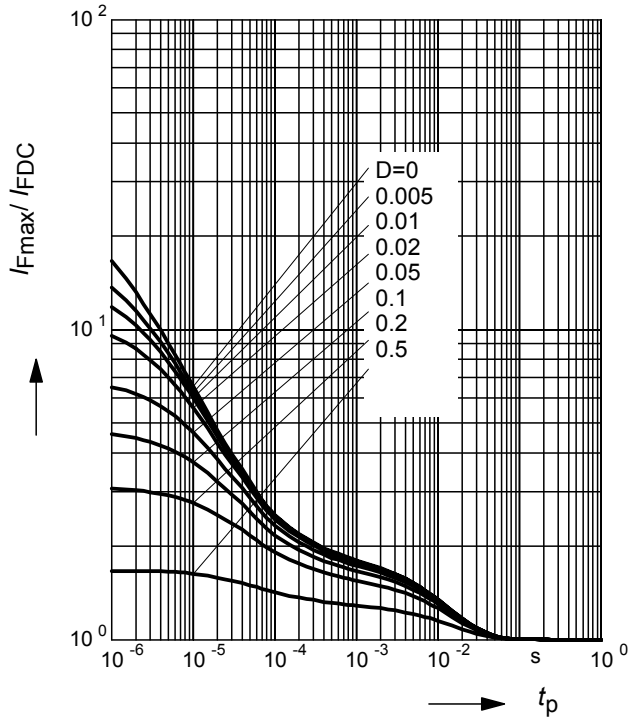
BAS16-03W



Permissible Pulse Load

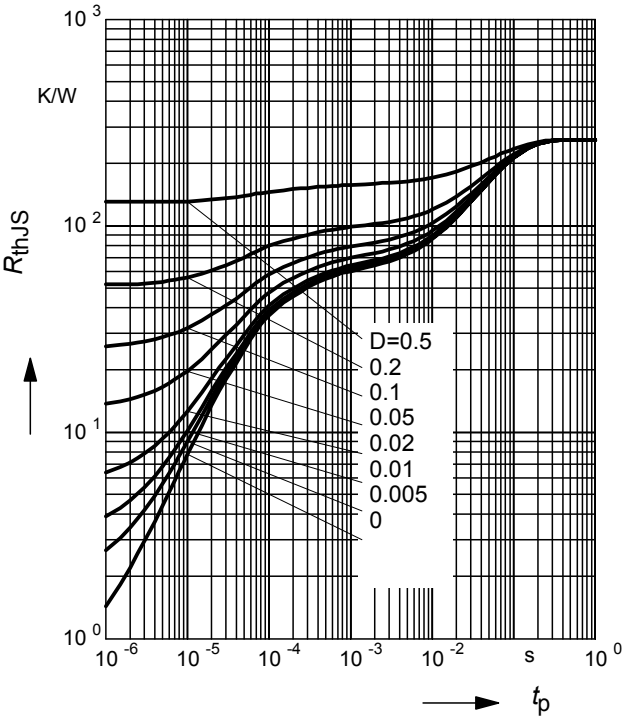
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS16-03W



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

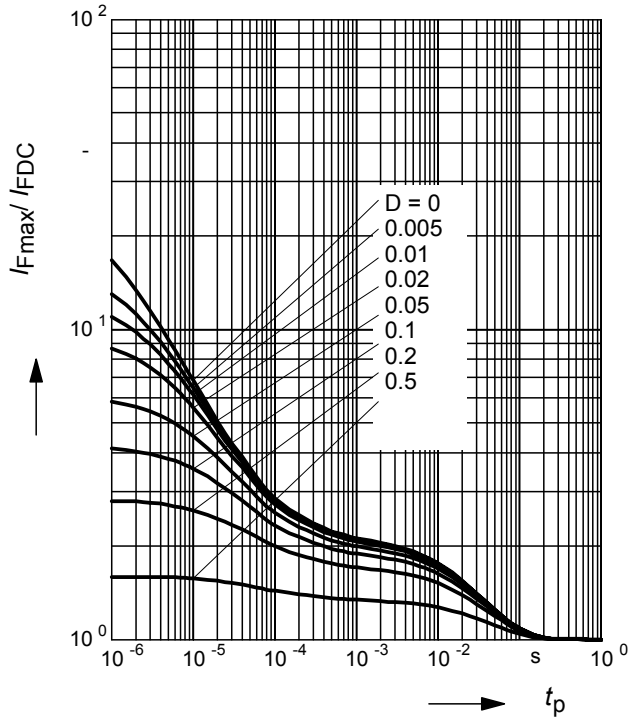
BAS16S



Permissible Pulse Load

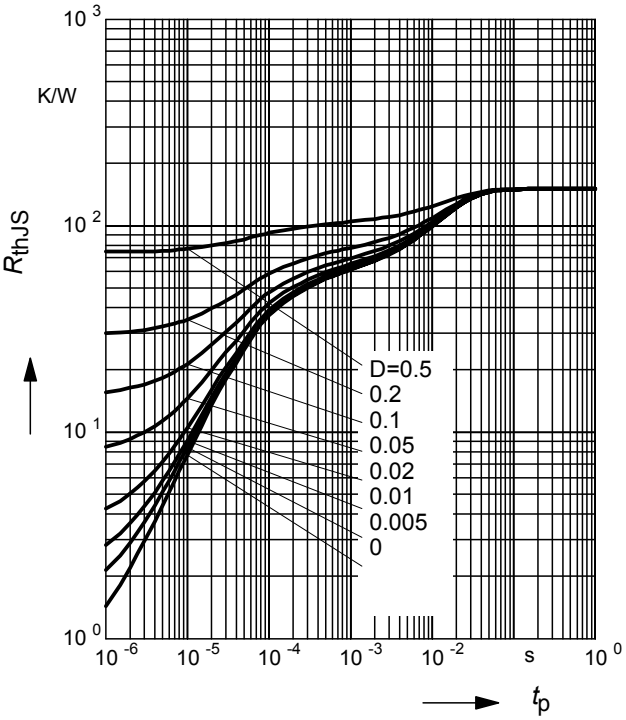
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS16S



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

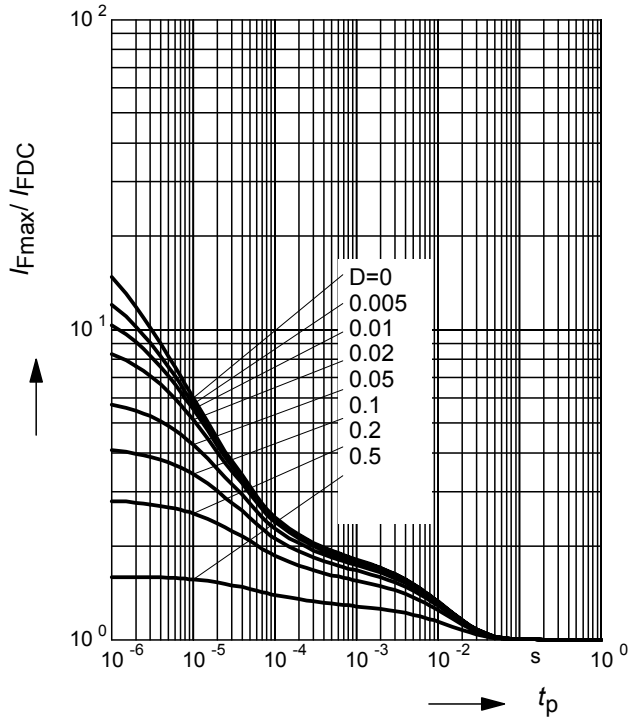
BAS16U



Permissible Pulse Load

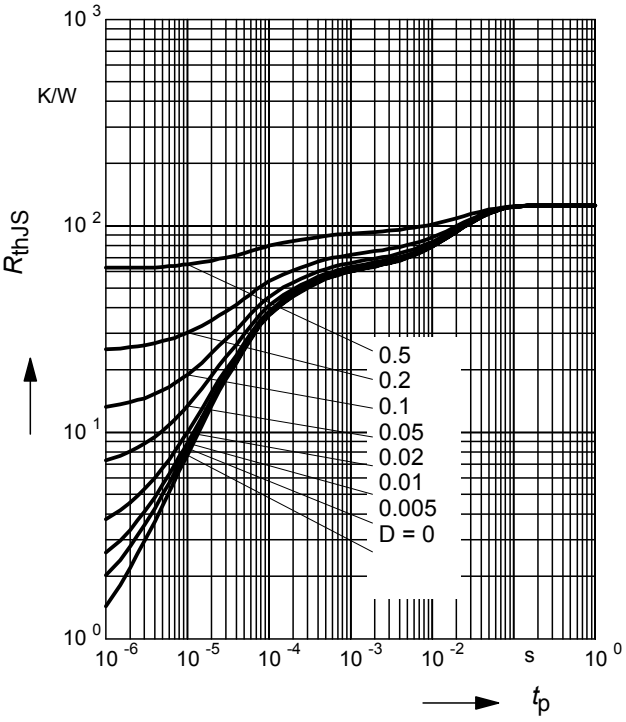
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAS16U



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

BAS16W



Permissible Pulse Load

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

BAS16W