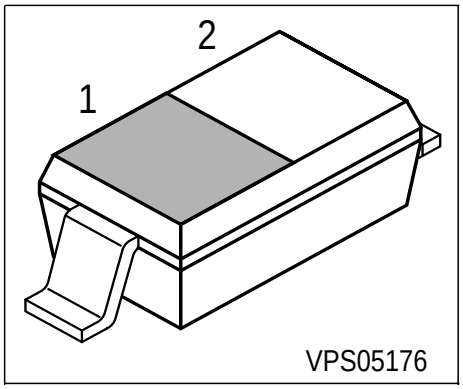
Silicon Schottky Diode



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

Type	Marking	Pin Configuration			Package
BAS170W	7	1 = C	2 = A	-	SOD323

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	70	V
Forward current	I_F	70	mA
Surge forward current, t ≤10 ms	I_{FSM}	100	
Total power dissipation T_S = 97 °C	P_{tot}	250	mW
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}	≤ 190	K/W

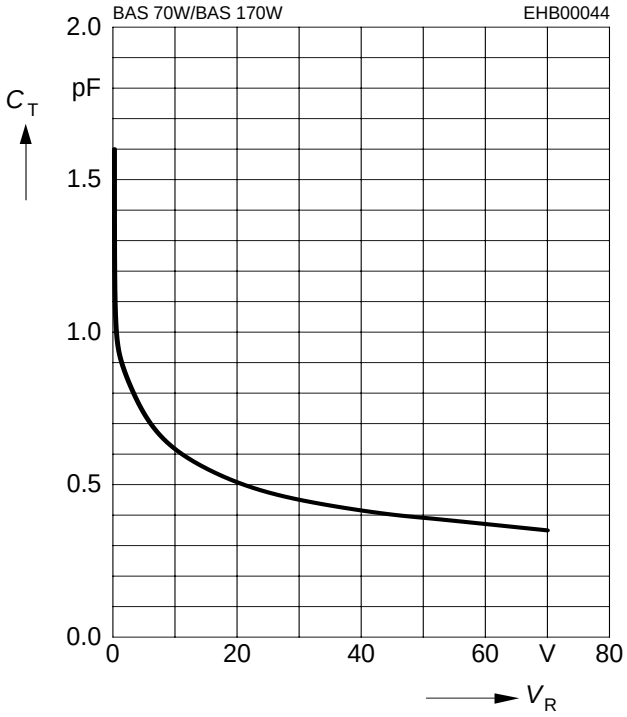
[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 10 µA	$V_{(BR)}$	70	-	-	V
Reverse current	I_R				µA
V_R = 50 V		-	-	0.1	
V_R = 70 V		-	-	10	
Forward voltage	V_F				mV
I_F = 1 mA		300	375	410	
I_F = 10 mA		600	705	750	
I_F = 15 mA		750	880	1000	
AC Characteristics					
Diode capacitance- V_R = 0 V, f = 1 MHz	C_T	-	1.5	2	pF
Differential forward resistance I_F = 5 mA, f = 10 kHz	R_F	-	34	-	Ω
Charge carrier life time I_F = 25 mA	τ_{rr}	-	-	100	ps
Series inductance	L_S	-	1.8	-	nH

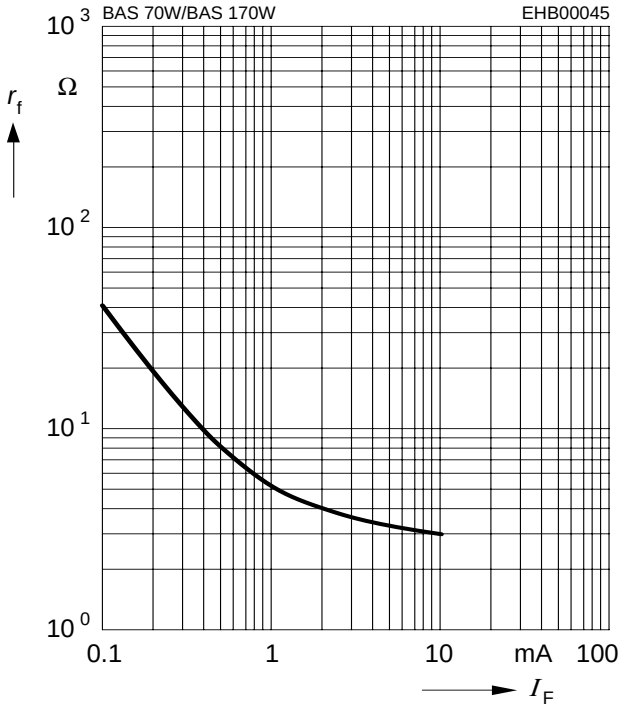
Diode capacitance $C_T = f(V_R)$

f = 1MHz



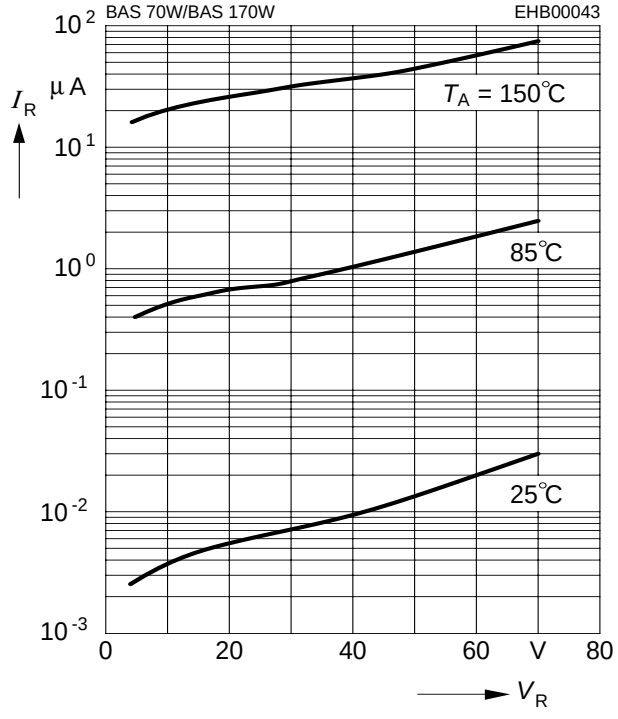
Differential forward resistance $r_f = f(I_F)$

f = 10 kHz

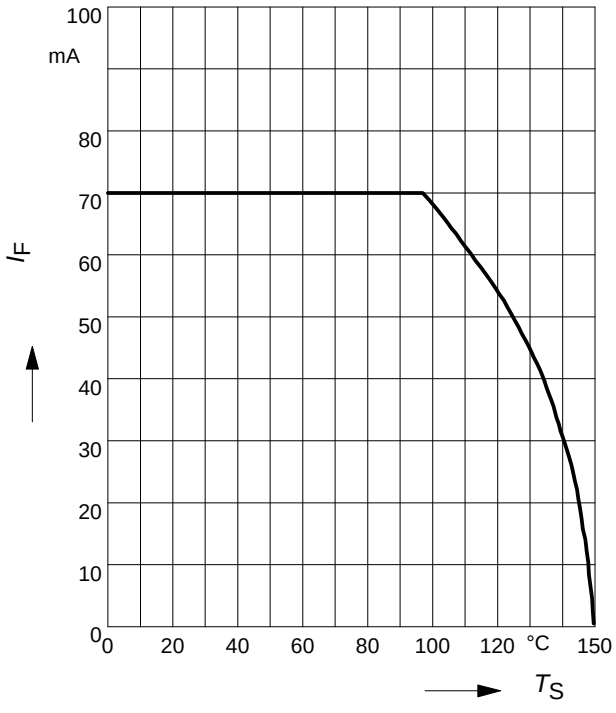


Reverse current $I_R = f(V_R)$

T_A = Parameter

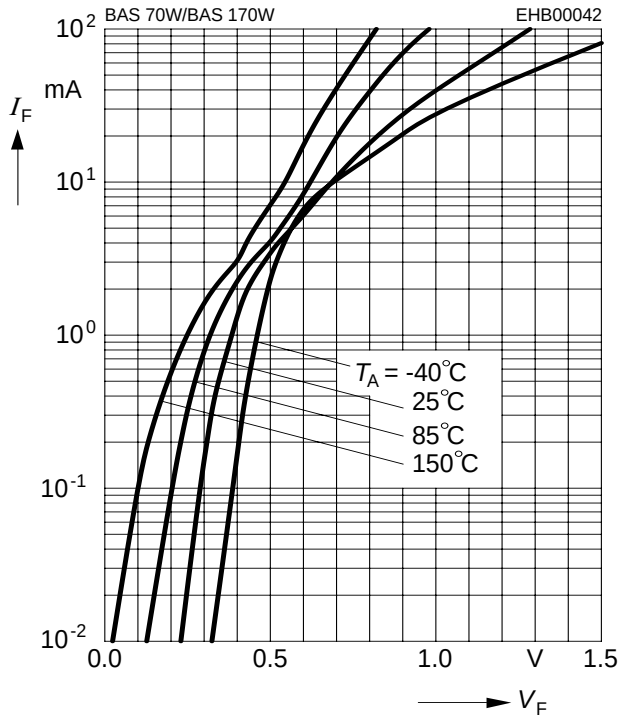


Forward current $I_F = f(T_S)$



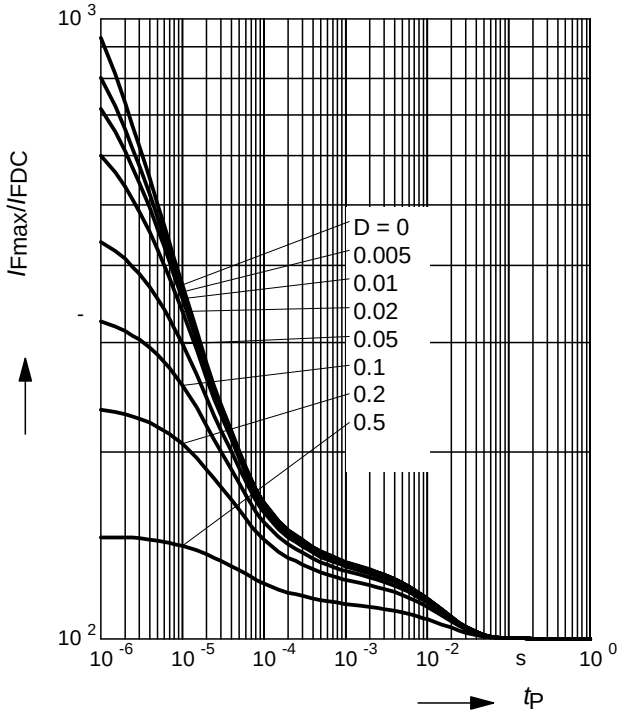
Forward current $I_F = f(V_F)$

T_A = 25 °C



Permissible Pulse Load

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



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