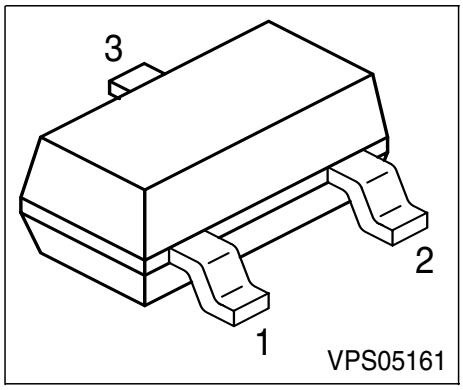
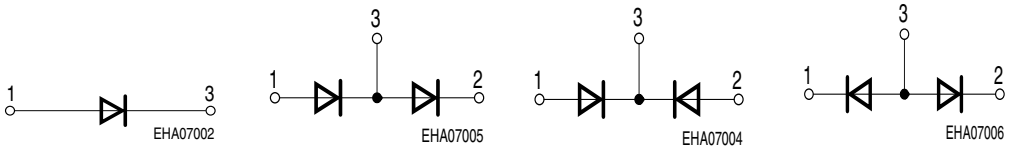
Silicon PIN Diodes

- PIN diode for high speed switching of RF signals
- Low forward resistance
- Very low capacitance
- For frequencies up to 3 GHz



BAR 63 **BAR 63-04** **BAR 63-05** **BAR 63-06**



Type	Marking	Pin Configuration			Package
BAR 63	G3s	1 = A	2 n.c.	3 = C	SOT-23
BAR 63-04	G4s	1 = A1	2 = C2	3=C1/A2	SOT-23
BAR 63-05	G5s	1 = A1	2 = A2	3=C1/C2	SOT-23
BAR 63-06	G6s	1 = C1	2 = C2	3=A1/A2	SOT-23

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	50	V
Forward current	I_F	100	mA
Total power dissipation BAR 63, $T_S \leq 80°C$	P_{tot}	250	mW
BAR 63-04, BAR 63-05, BAR 63-06, $T_S \leq 55°C$	P_{tot}	250	
Operating temperature range	T_{op}	-55 ... 150	°C
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Junction-ambient 1) BAR 63	R_{thJA}	≤ 450	K/W
Junction-ambient 1) BAR 63-04,05,06	R_{thJA}	≤ 540	
Junction-soldering point BAR 63	R_{thJS}	≤ 280	
Junction-soldering point BAR 63-04,05,06	R_{thJS}	≤ 380	

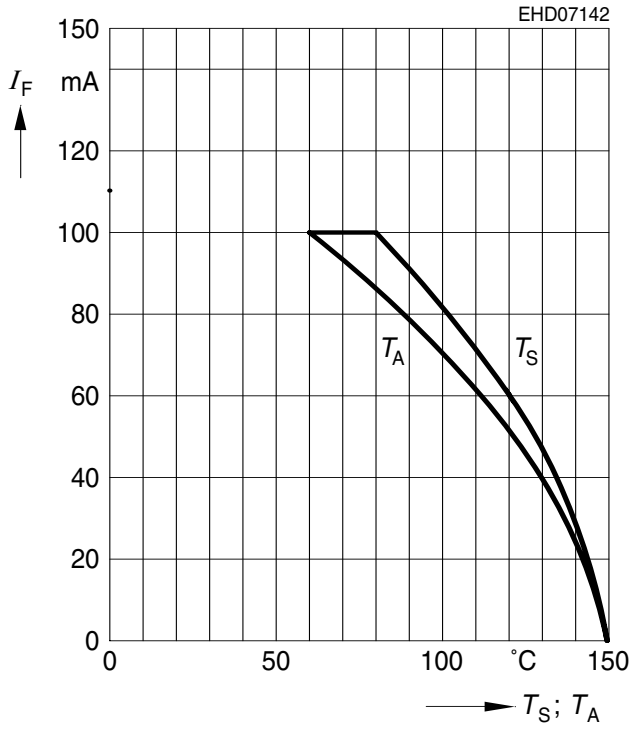
1) Package mounted on alumina 15mm x 16.7mm x 0.7mm

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Breakdown voltage $I_{(BR)}$ = 5 µA	$V_{(BR)}$	50	-	-	V
Reverse current V_R = 20 V	I_R	-	-	50	nA
Forward voltage I_F = 100 mA	V_F	-	0.95	1.2	V
AC characteristics					
Diode capacitance	C_T				pF
V_R = 0 V, f = 100 MHz		-	0.3	-	
V_R = 5 V, f = 1 MHz		-	0.21	0.3	
Forward resistance	r_f				Ω
I_F = 5 mA, f = 100 MHz		-	1.2	2	
I_F = 10 mA, f = 100 MHz		-	1	-	
Charge carrier life time I_F = 10 mA, I_R = 6 mA, I_R = 3 mA	τ_{rr}	-	75	-	ns
Series inductance	L_s	-	1.8	-	nH

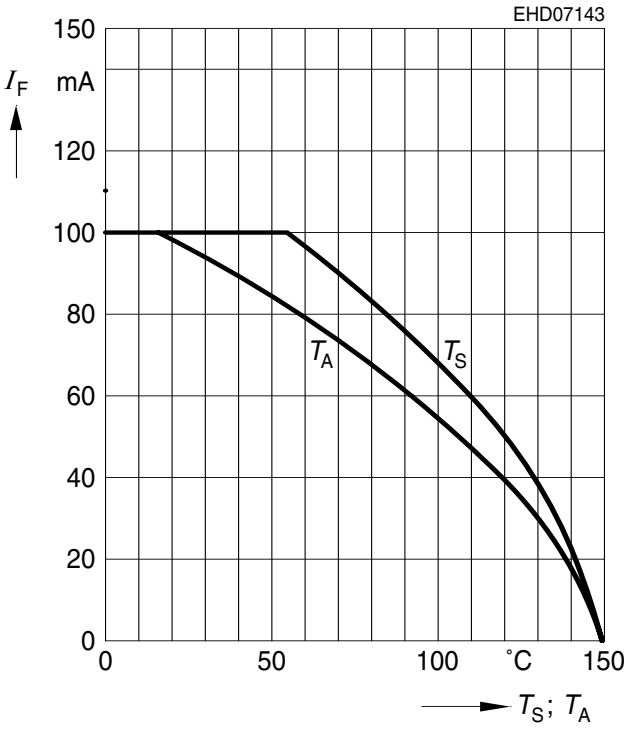
Forward current *I*F = *f* (T_A;T_S)

BAR 63

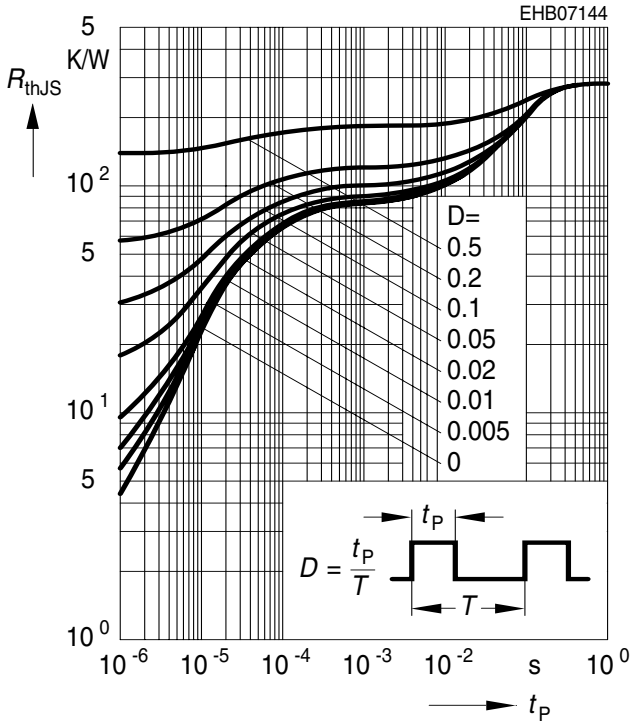


Forward current I_F = *f* (T_A;T_S)

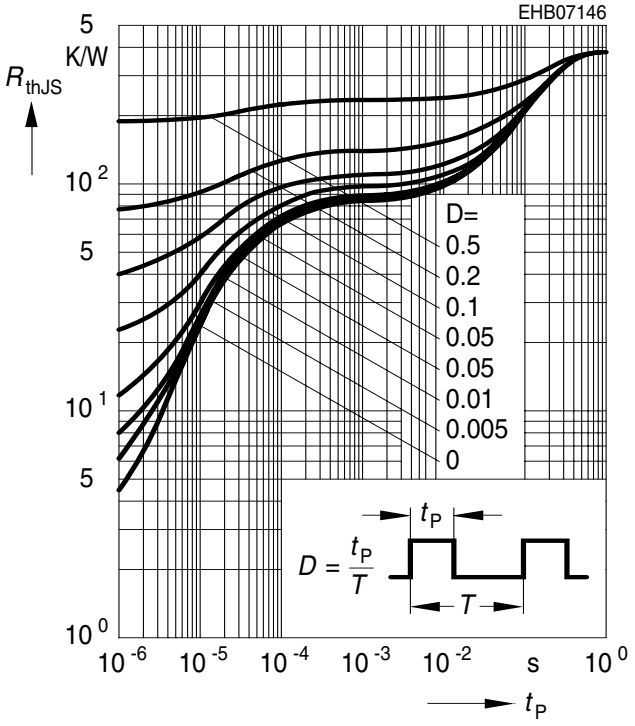
BAR 63-04, -05, -06



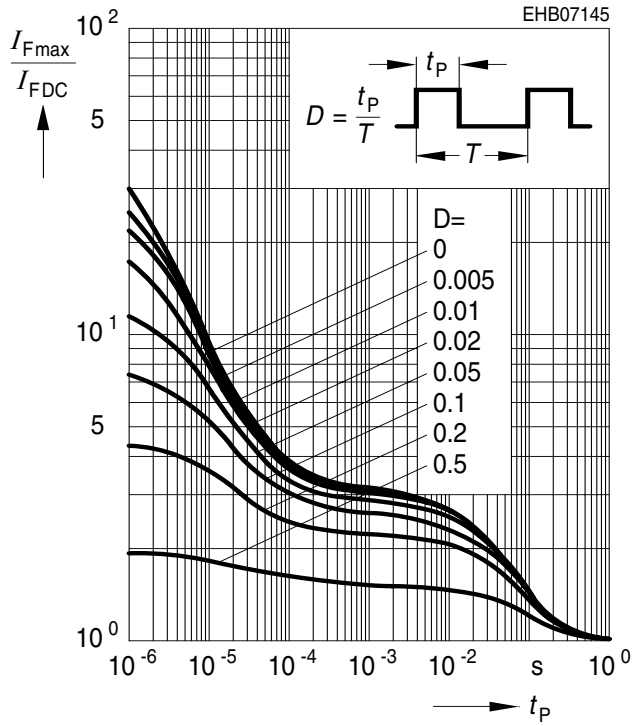
Permissible pulse load $R_{thJS} = f(t_p)$
BAR 63



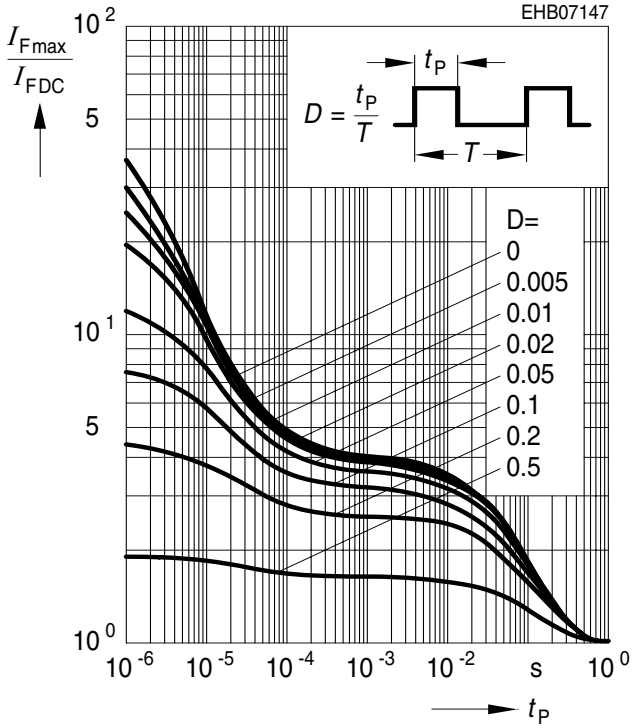
Permissible pulse load $R_{thJS} = f(t_p)$
BAR 63-04, -05, -06



Permissible pulse load $I_{Fmax} / I_{FDC} = f(t_p)$
BAR 63

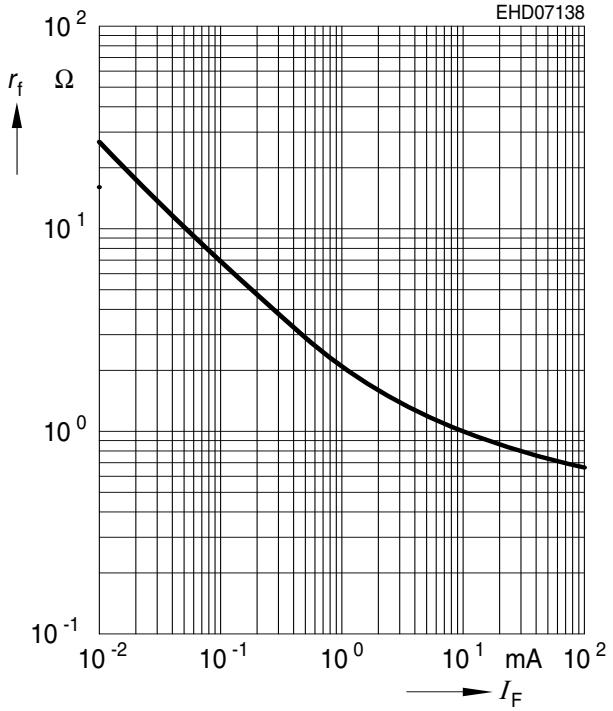


Permissible pulse load $I_{Fmax} / I_{FDC} = f(t_p)$
BAR 63-04, -05, -06



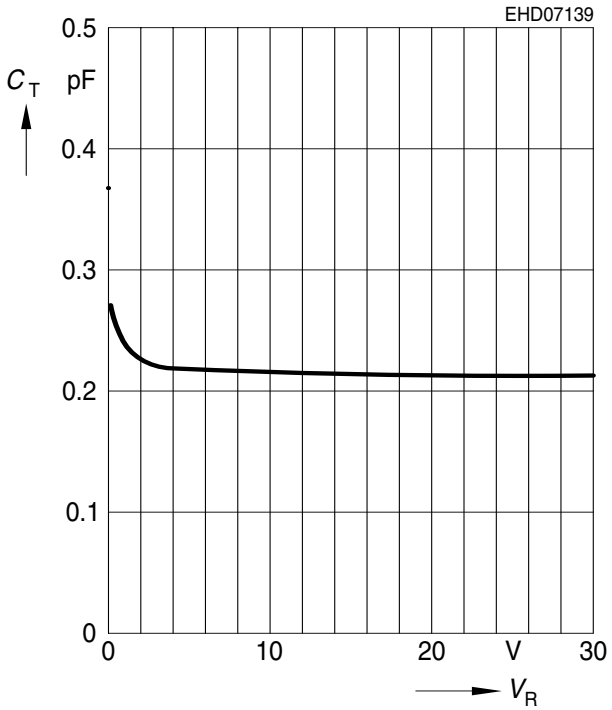
Forward resistance $r_f = f(I_F)$

f = 100MHz



Diode capacitance $C_T = f(V_R)$

f = 1MHz



Forward current $I_F = f(V_F)$

T_A = Parameter