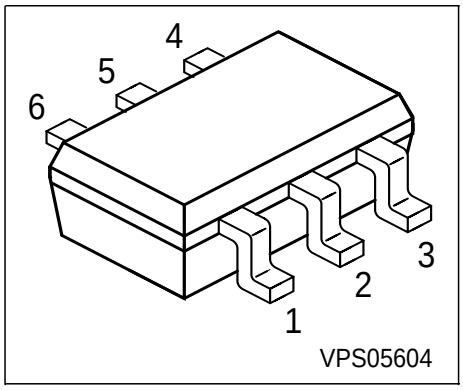
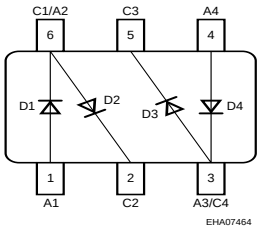
Silicon PIN Diode

Preliminary data

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





Type	Marking	Pin Configuration						Package
BAR63-04S	G4s	1=A1	2=C2	3=A3/C4	4=A4	5=C3	6=C1/A2	SOT363

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	50	V
Forward current	I_F	100	mA
Total power dissipation, T_S = 115 °C	P_{tot}	250	mW
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 150	°C
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

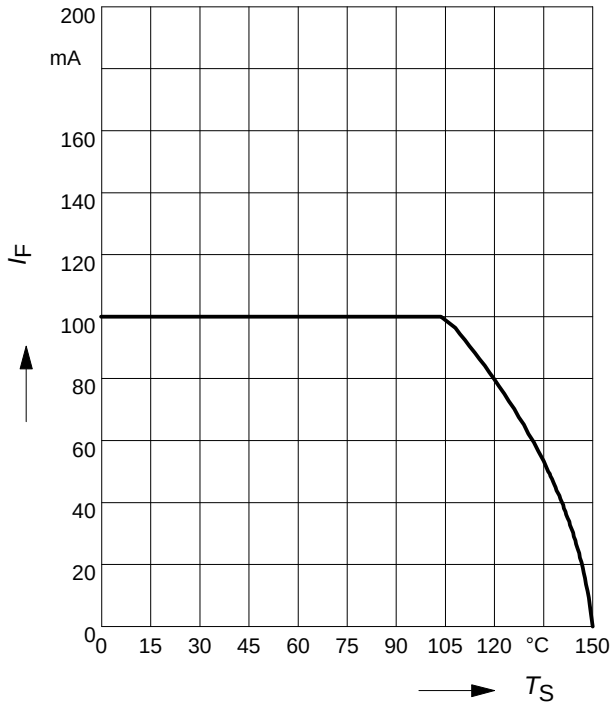
Junction - soldering point[1)]	R_{thJS}	≤ 180	K/W

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

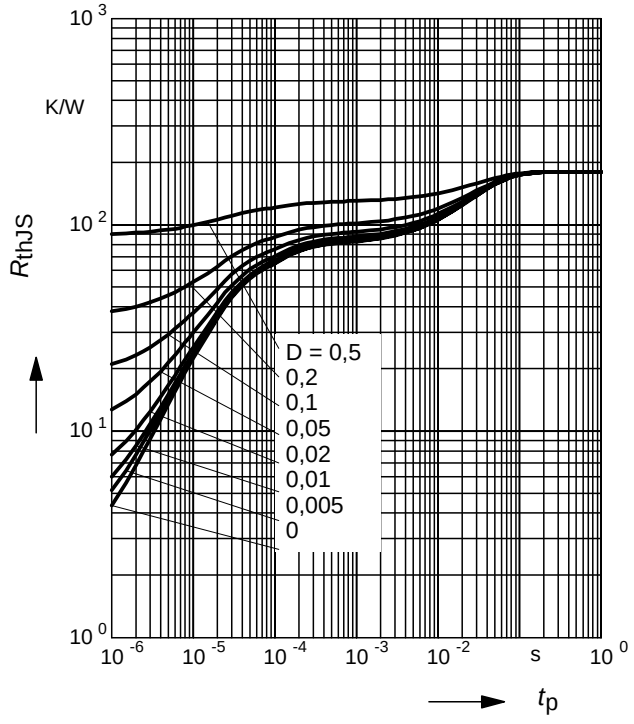
Electrical Characteristics at T_A = 25 =C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Breakdown voltage $I_{(BR)}$ = 5 µA	$V_{(BR)}$	50	-	-	V
Reverse current V_R = 35 V	I_R	-	-	10	nA
Forward voltage I_F = 100 mA	V_F	-	0.95	1.2	V
AC characteristics					
Diode capacitance V_R = 0 V, f = 100 MHz V_R = 5 V, f = 1 MHz	C_T	 - -	 0.3 0.21	 - 0.3	pF
Case capacitance f = 1 MHz	C_C	-	0.09	-	
Forward resistance I_F = 5 mA, f = 100 MHz I_F = 10 mA, f = 100 MHz	r_f	 - -	 1.2 1	 2 -	Ω
Charge carrier life time I_F = 10 mA, I_R = 6 mA, I_R = 3 mA	τ_{rr}	-	75	-	ns
Series inductance	L_S	-	0.6	-	nH

Forward current $I_F = f(T_S)$

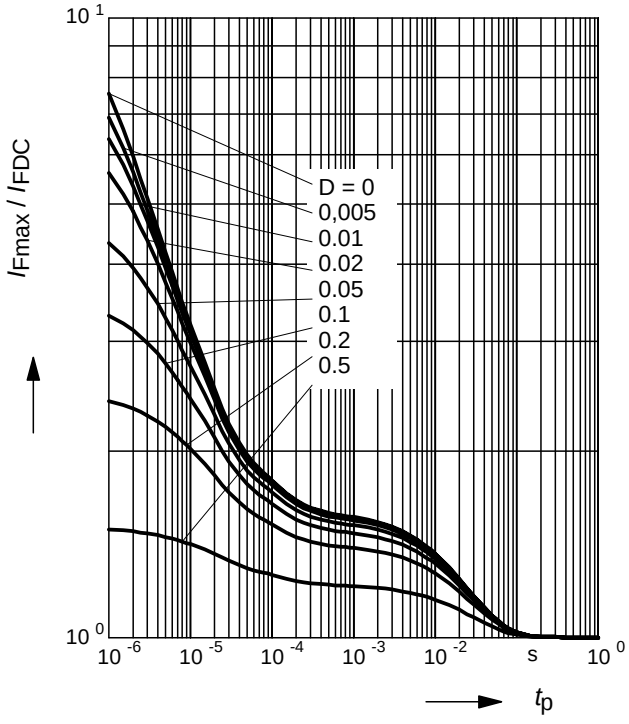


Permissible Pulse Load $R_{thJS} = f(t_p)$



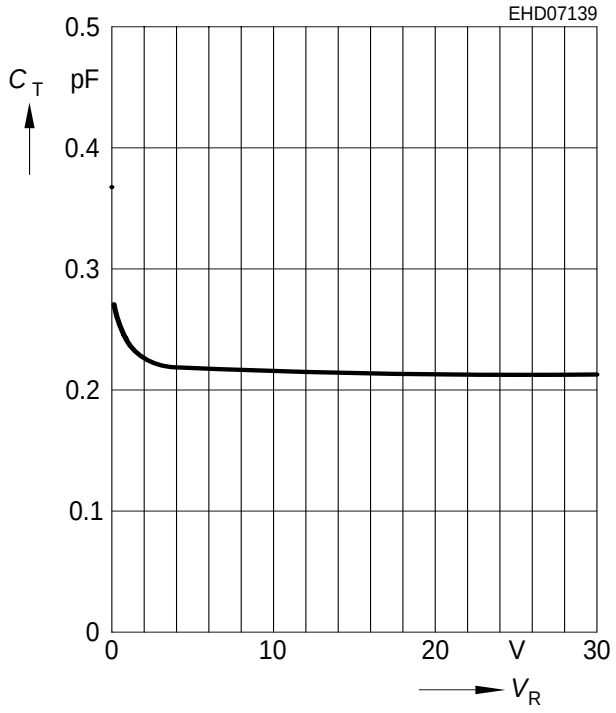
Permissible Pulse Load

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



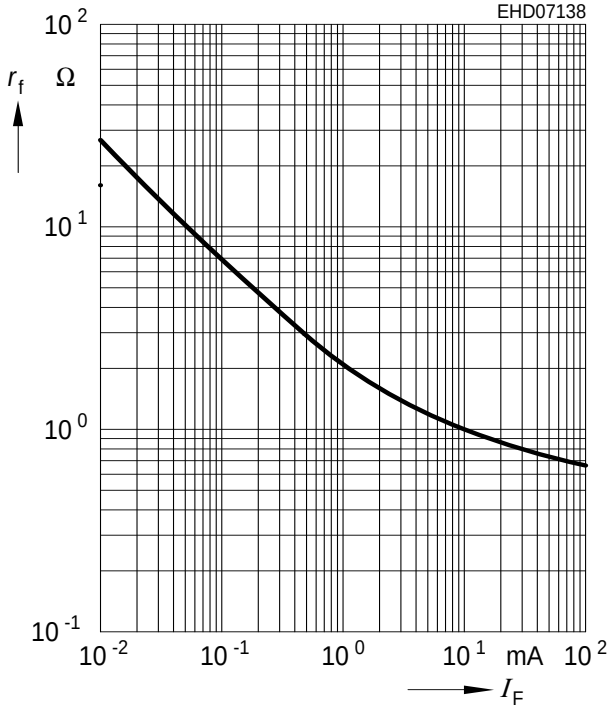
Diode capacitance $C_T = f(V_R)$

f = 1MHz



Forward resistance $r_f = f(I_F)$

f = 100MHz



Forward current $I_F = f(V_F)$

T_A = 25°C