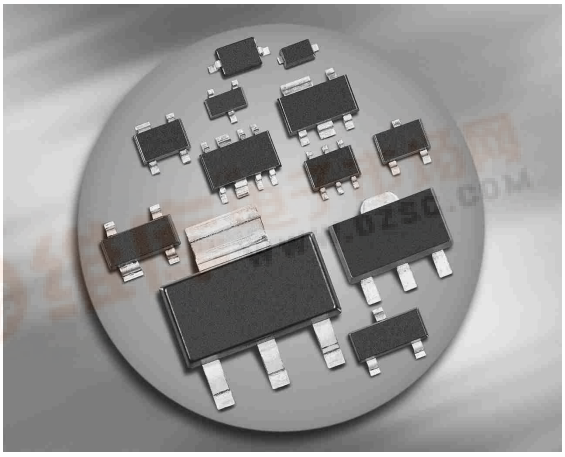
Silicon PIN Diode

- For low loss RF switches and attenuators
- Very low capacitance at zero volt reverse bias at frequencies above 1 GHz (typ. 0.25 pF)
- Low forward resistance (typ. 1.5 Ω @ 5mA)
- Low harmonics



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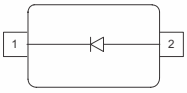


Type	Package	Configuration	L_S(nH)	Marking
BAR67-02V	SC79	single	0.6	T

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	150	V
Forward current	I_F	200	mA
Total power dissipation $T_S \leq 118$°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)], BAR67-02V	R_{thJS}	≤ 115	K/W

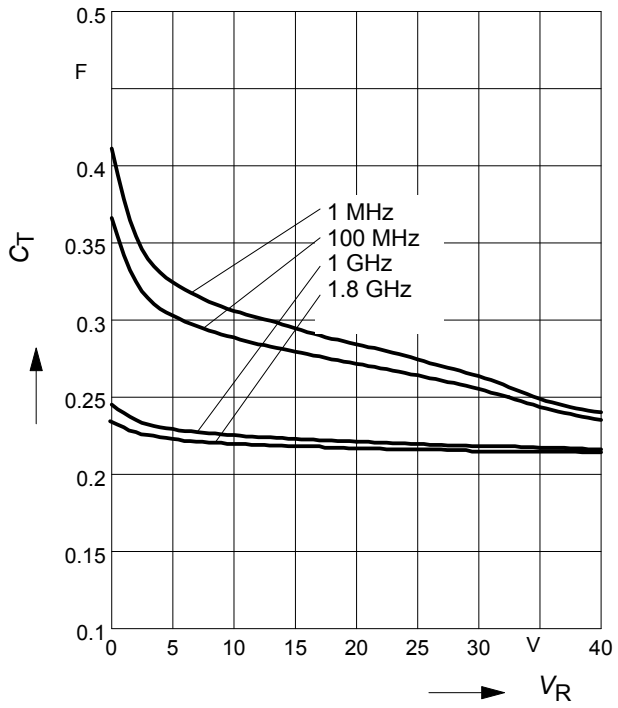
[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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	$V_{(BR)}$	150	-	-	V
Reverse current V_R = 100 V	I_R	-	-	20	nA
Forward voltage I_F = 50 mA	V_F	-	0.95	1.2	V
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 5 V, f = 1 MHz		-	0.35	0.55	
V_R = 0 V, f = 100 MHz		-	0.35	0.9	
V_R = 0 V, f = 1 GHz		-	0.25	-	
V_R = 0 V, f = 1.8 GHz		-	0.23	-	
Reverse parallel resistance	R_P				kΩ
V_R = 0 V, f = 100 MHz		-	25	-	
V_R = 0 V, f = 1 GHz		-	4	-	
V_R = 0 V, f = 1.8 GHz		-	2.5	-	
Forward resistance	r_f				Ω
I_F = 5 mA, f = 100 MHz		-	1.5	1.8	
I_F = 10 mA, f = 100 MHz		-	1	-	
Charge carrier life time I_F = 10 mA, I_R = 6 mA, measured at I_R = 3 mA, R_L = 100 Ω	τ_{rr}	-	700	-	ns
I-region width	W_I	-	13	-	µm

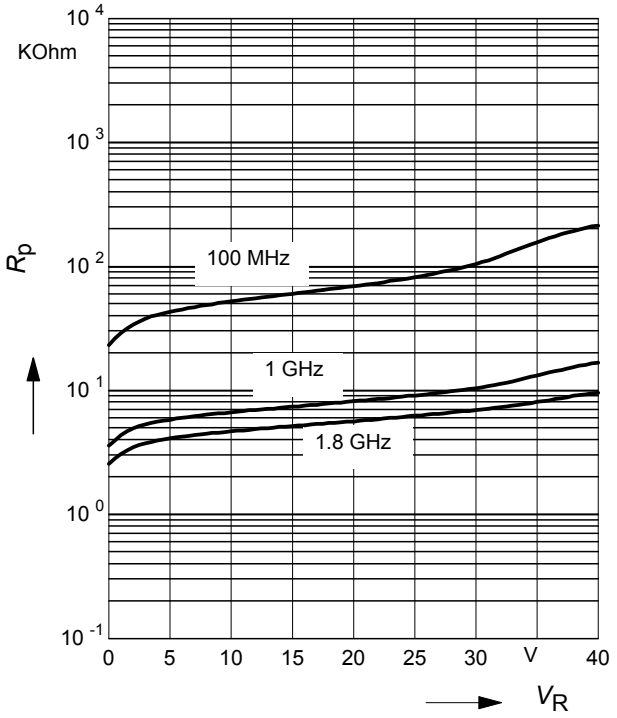
Diode capacitance $C_T = f(V_R)$

f = Parameter



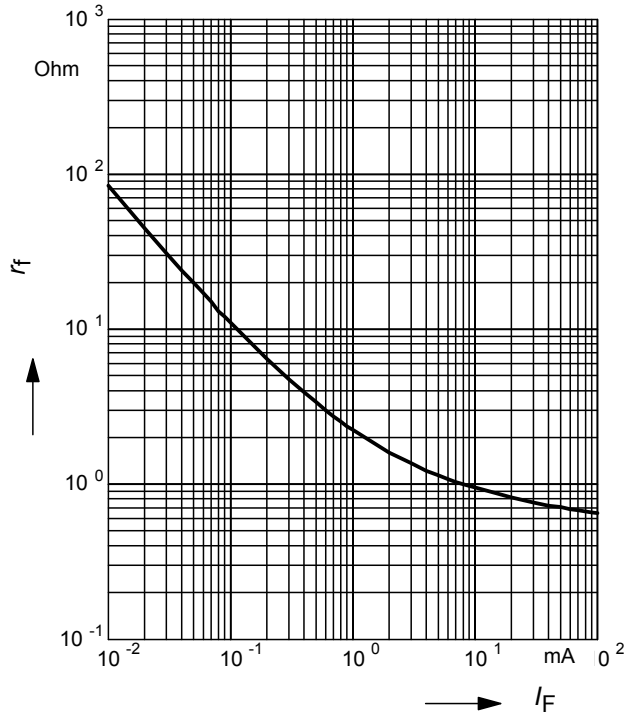
Reverse parallel resistance $R_P = f(V_R)$

f = Parameter



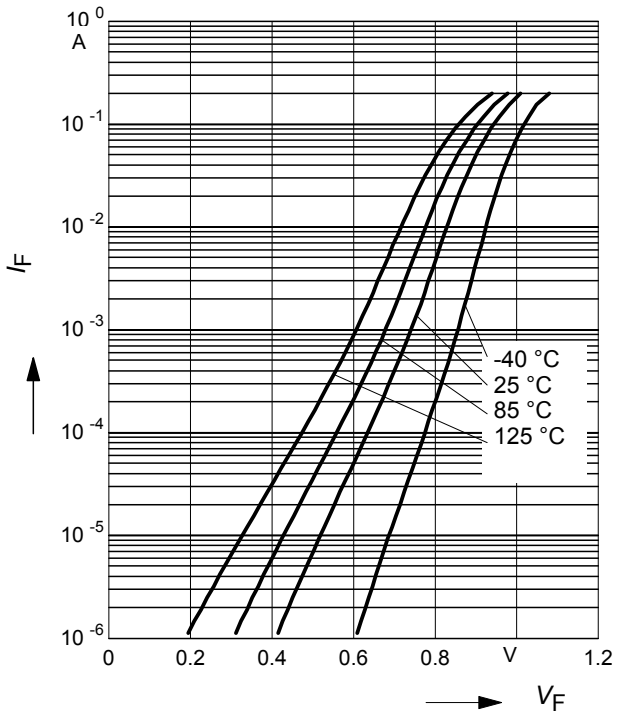
Forward resistance $r_f = f(I_F)$

f = 100MHz



Forward current $I_F = f(V_F)$

T_A = Parameter



Forward current $I_F = f(T_S)$

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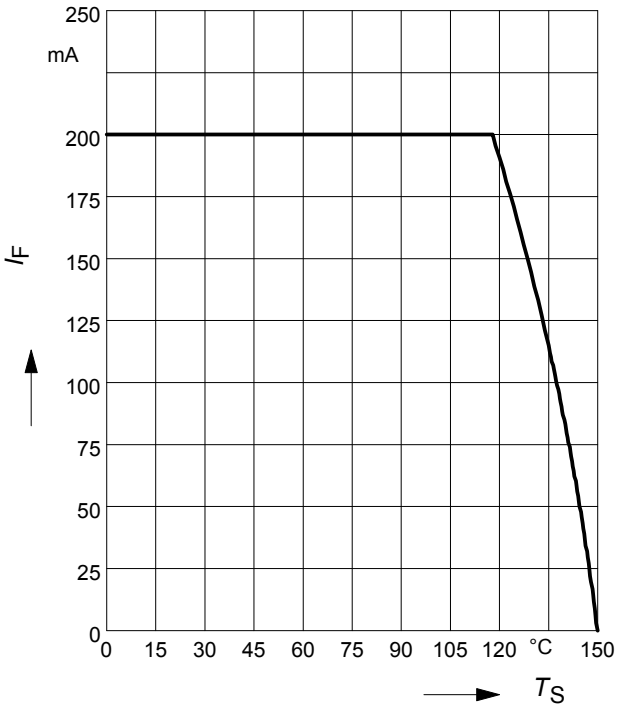

Permissible Puls Load $R_{thJS} = f(t_p)$

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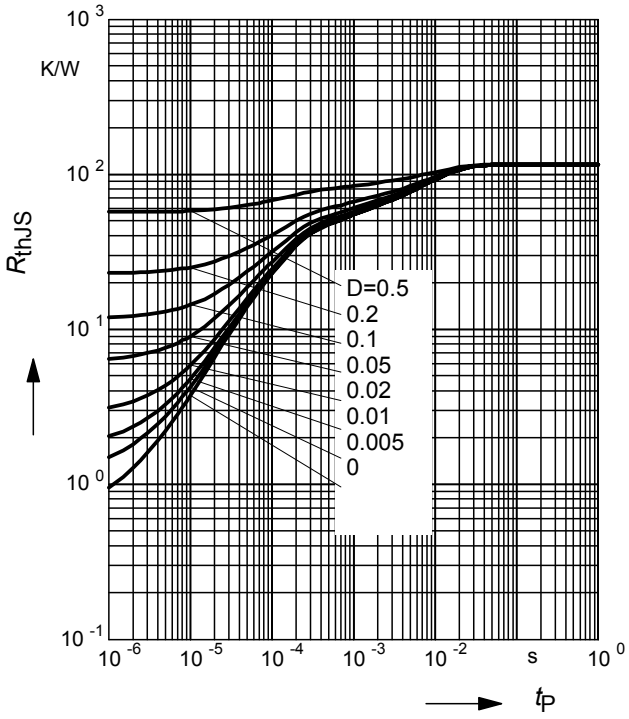

Permissible Pulse Load

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

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