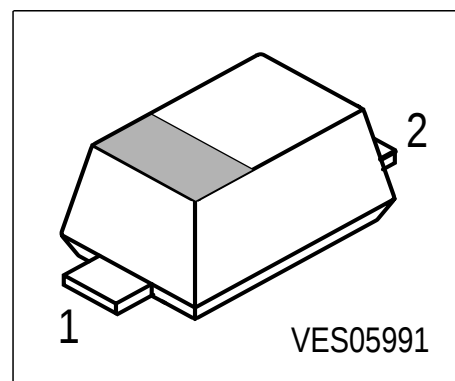


Silicon PIN Diode

- 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
BAR63-02W	G	1 = C	2 = A	SCD80

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	50	V
Forward current	I_F	100	mA
Total power dissipation, $T_S = 115\text{ °C}$	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

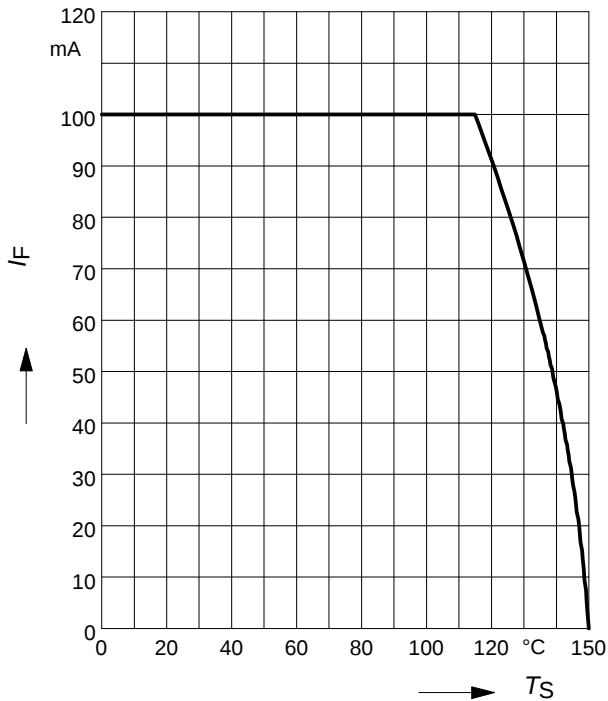
Junction - soldering point ¹⁾	R_{thJS}	≤ 140	K/W
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¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

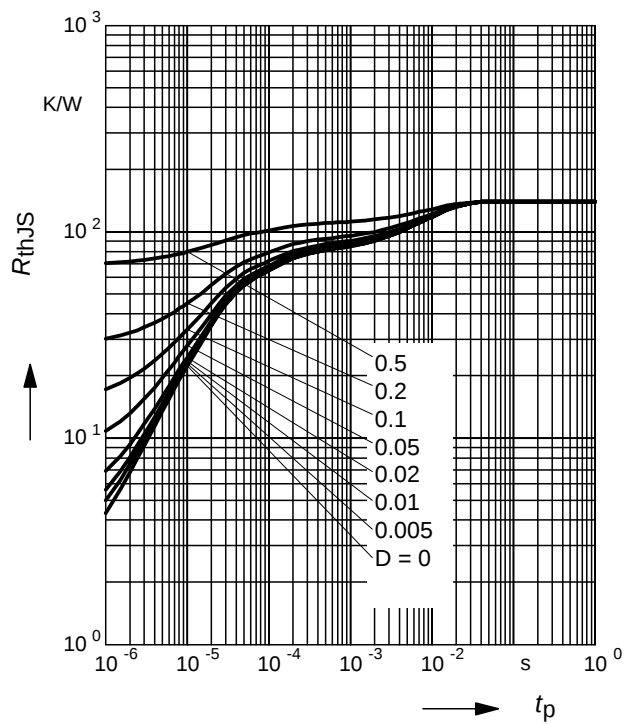
Electrical Characteristics at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified.

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

Forward current $I_F = f(T_S)$

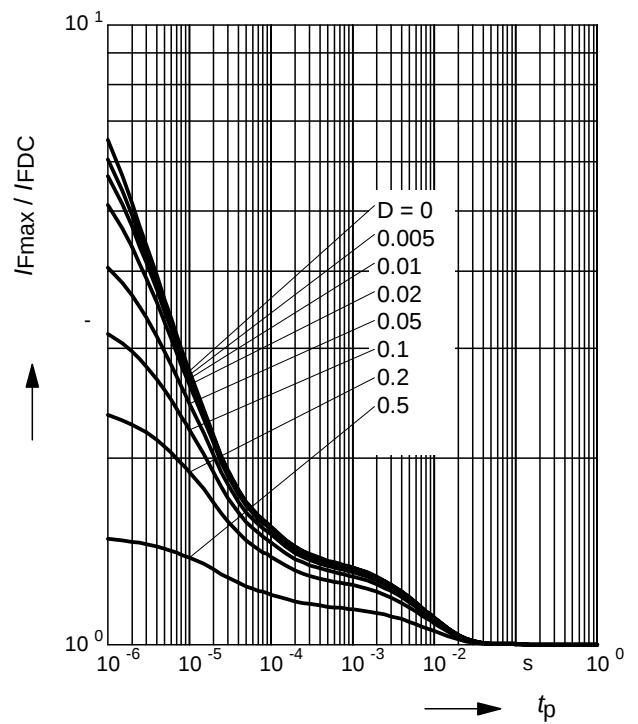


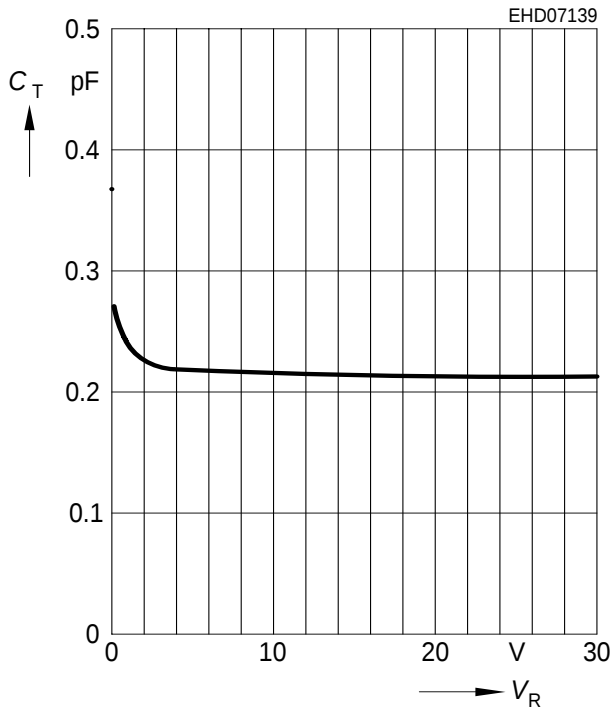
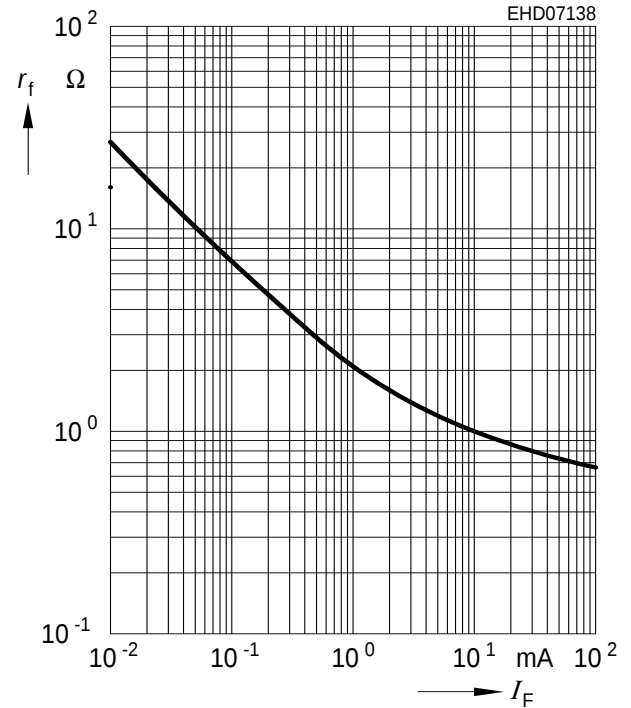
Permissible Pulse Load $R_{thJS} = f(t_p)$



Permissible Pulse Load

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



Diode capacitance $C_T = f(V_R)$
 $f = 1\text{MHz}$

Forward resistance $r_f = f(I_F)$
 $f = 100\text{MHz}$

Forward current $I_F = f(V_F)$
 $T_A = 25^\circ\text{C}$
