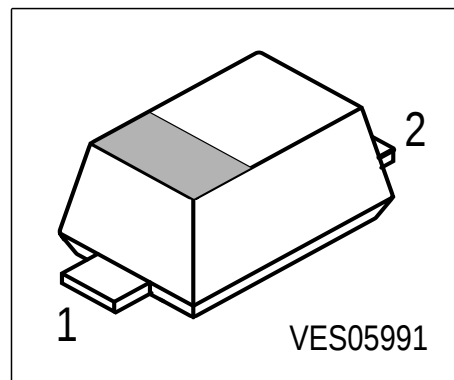


Silicon PIN Diode

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



Type	Marking	Ordering Code	Pin Configuration		Package
BAR 63-02W	G	Q62702-A1211	1 = C	2 = A	SCD-80

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 - ambient ¹⁾	R_{thJA}	≤ 220	K/W
Junction - soldering point	R_{thJS}	≤ 140	

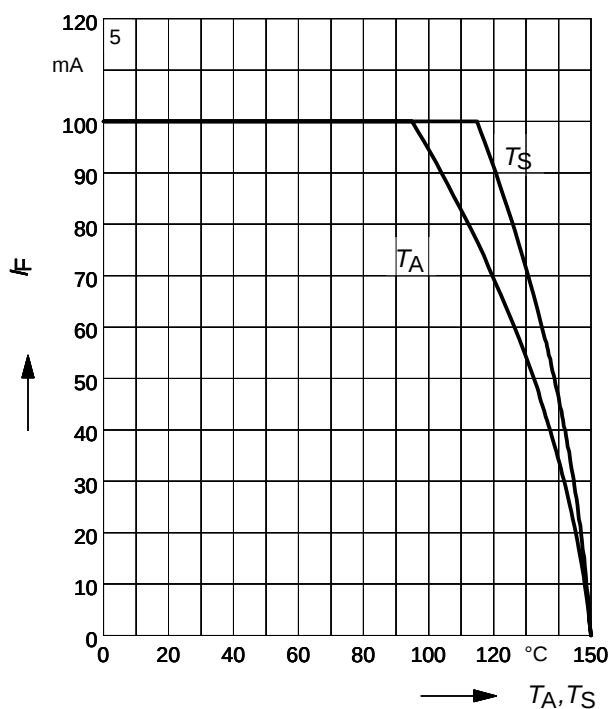
1) Package mounted on alumina 15mm x 16.7mm x 0.7mm

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

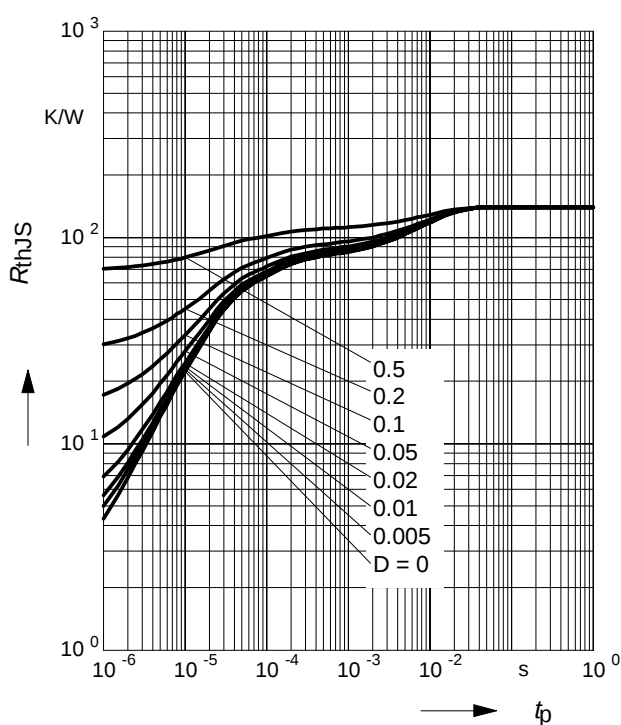
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Breakdown voltage $I_{(BR)} = 5\ \mu\text{A}$	$V_{(BR)}$	50	-	-	V
Reverse current $V_R = 35\ \text{V}$	I_R	-	-	10	μA
Forward voltage $I_F = 100\ \text{mA}$	V_F	-	0.95	1.2	V
AC characteristics					
Diode capacitance $V_R = 0\ \text{V}, f = 100\ \text{MHz}$ $V_R = 5\ \text{V}, f = 1\ \text{MHz}$	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	-	μs
Series inductance	L_S	-	0.6	-	nH

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

*) : mounted on alumina 15mm x 16.7mm x 0.7mm

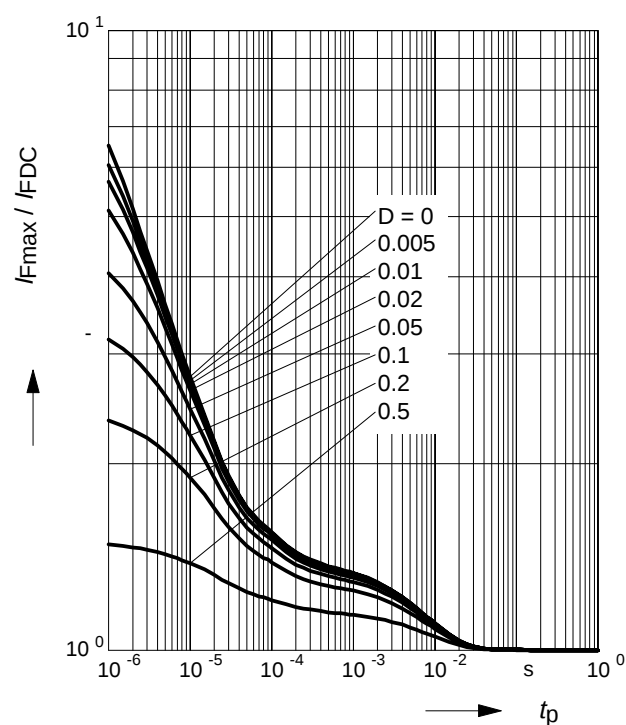


Permissible Pulse Load $R_{thJS} = f(t_p)$



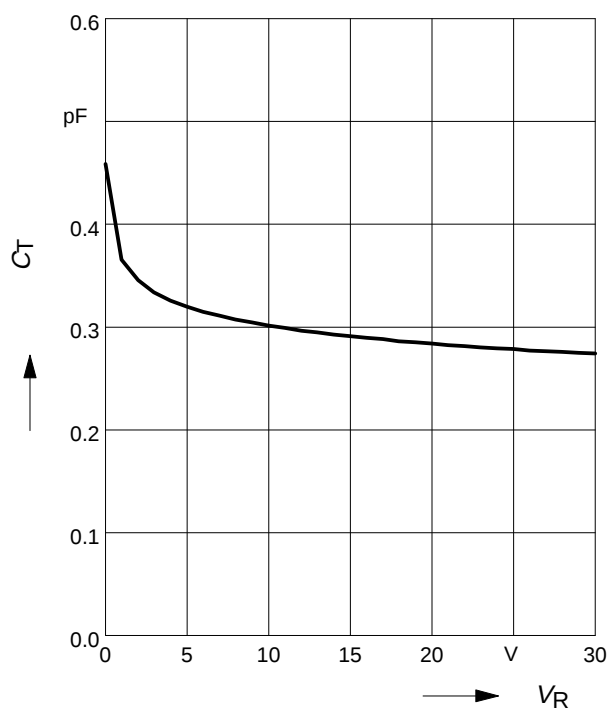
Permissible Pulse Load

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



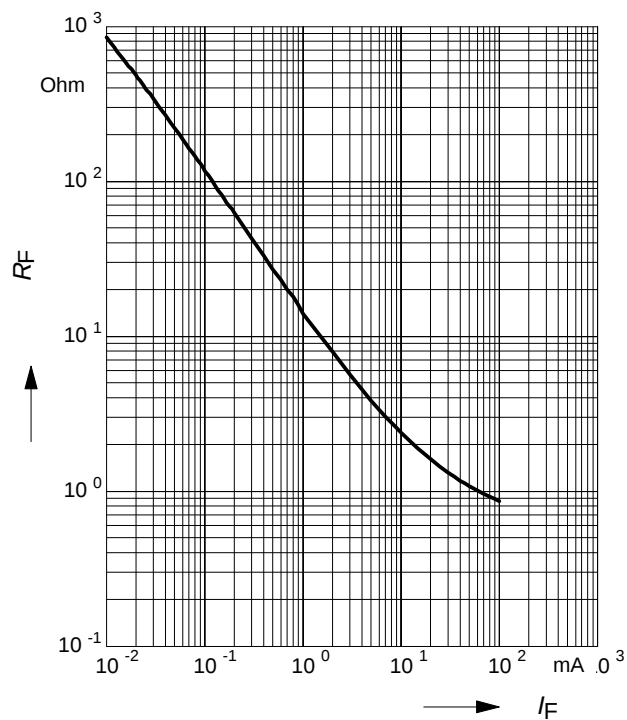
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



Forward resistance $r_f = f(I_F)$

$f = 100\text{MHz}$



Forward current $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$

