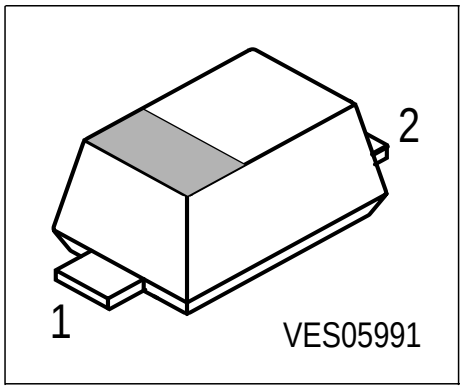
Silicon PIN Diode



- High voltage current controlled RF resistor for RF attenuator and switches
- Frequency range above 1 MHz up to 3 GHz
- Low resistance and long carrier lifetime
- Very low capacitance at zero volts reverse bias at frequencies above 1 GHz
- Very low signal distortion
- Extremely small plastic SMD package

Type	Marking	Pin Configuration		Package
BAR64-02W	M	1 = C	2 = A	SCD80

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	150	V
Forward current	I_F	100	mA
Total power dissipation, $T_S \leq 125°C$	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

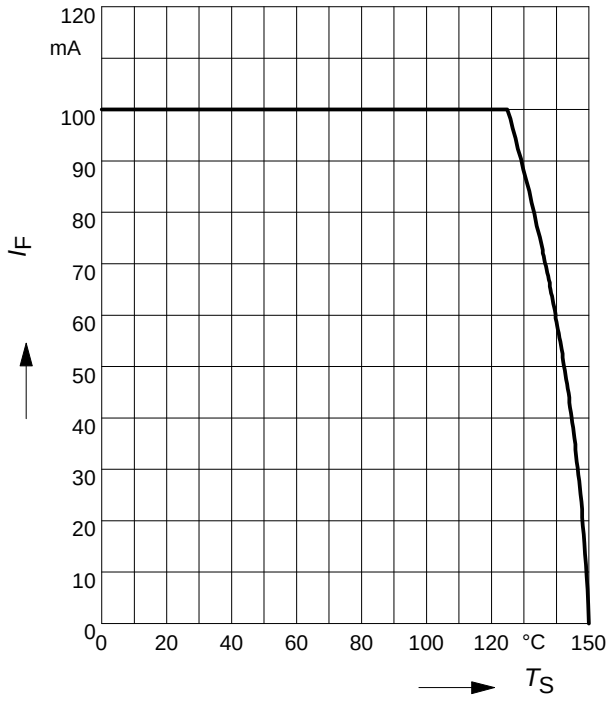
Junction - soldering point[1)]	R_{thJS}	≤ 140	K/W

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

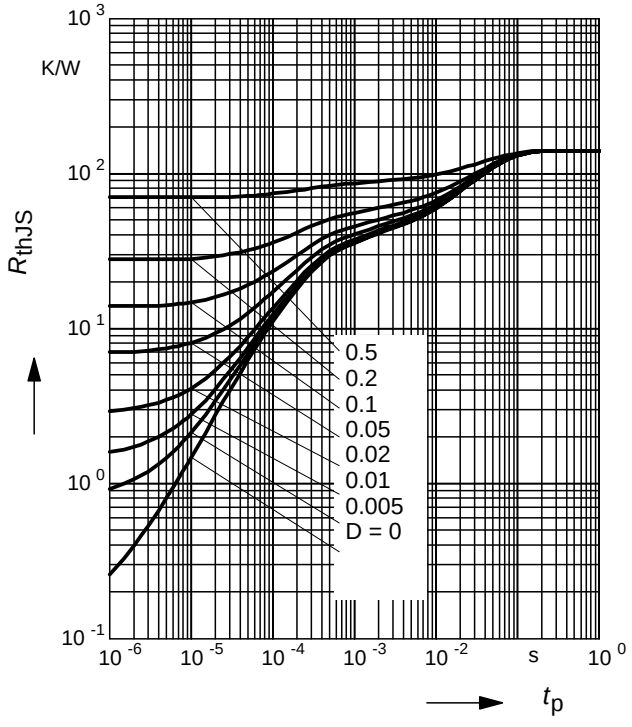
Electrical Characteristics at T_A = 25 °C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Breakdown voltage $I_{(BR)}$ = 5 µA	$V_{(BR)}$	150	-	-	V
Forward voltage I_F = 50 mA	V_F	-	-	1.1	
AC characteristics					
Diode capacitance V_R = 20 V, f = 1 MHz	C_T	-	0.23	0.35	pF
Case capacitance f = 1 MHz	C_C	-	0.09	-	
Forward resistance	r_f				Ω
I_F = 1 mA, f = 100 MHz		-	12.5	20	
I_F = 10 mA, f = 100 MHz		-	2.1	3.8	
I_F = 100 mA, f = 100 MHz		-	0.85	1.35	
Charge carrier life time I_F = 10 mA, I_R = 6 mA, I_R = 3 mA	τ_{rr}	-	1.55	-	µs
Series inductance	L_S	-	0.6	-	nH

Forward current $I_F = f(T_S)$

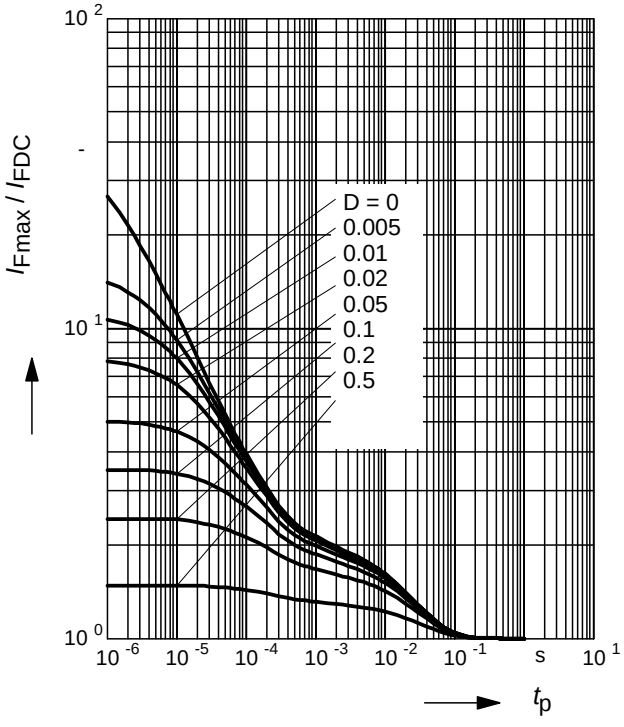


Permissible Pulse Load $R_{thJS} = f(t_p)$



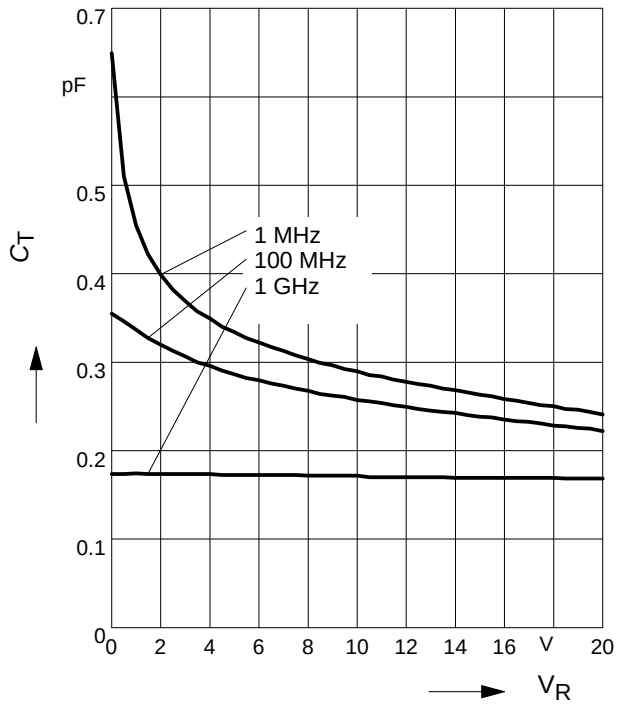
Permissible Pulse Load

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



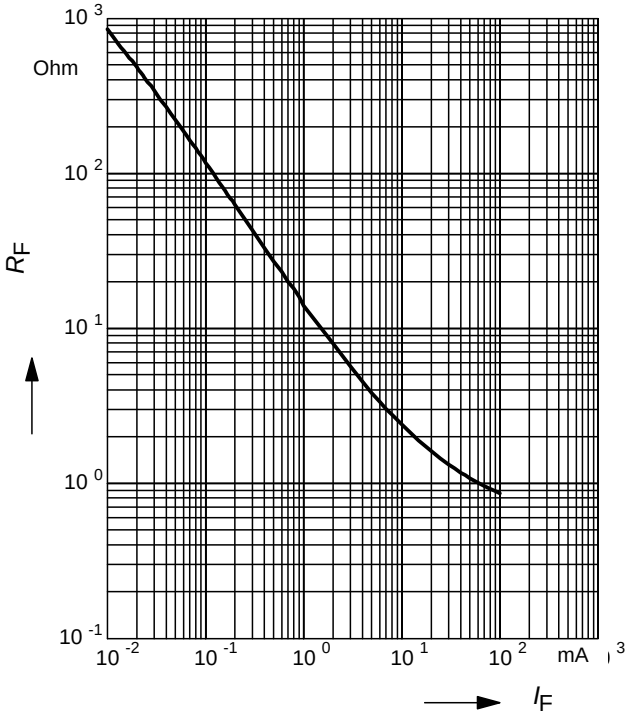
Diode capacitance $C_T = f(V_R)$

f = 1MHz



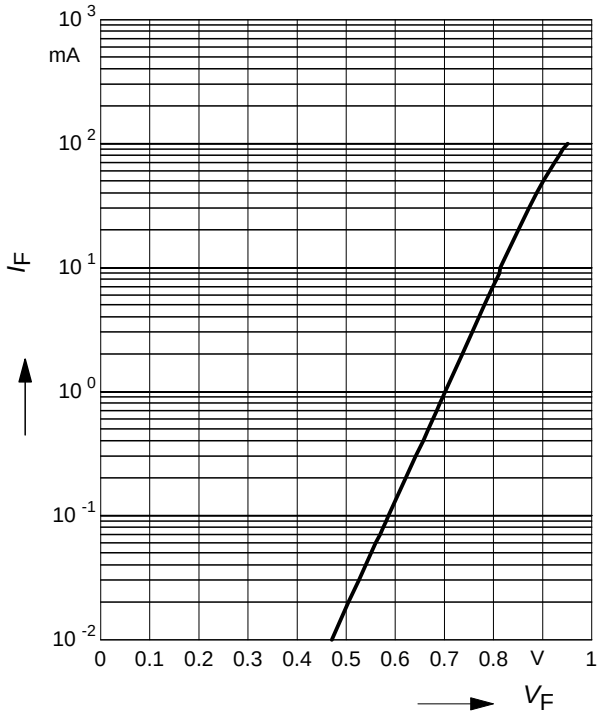
Forward resistance $r_f = f(I_F)$

f = 100MHz



Forward current $I_F = f(V_F)$

T_A = 25°C



Intermodulation intercept point

$IP_3 = f(I_F)$

f = parameter