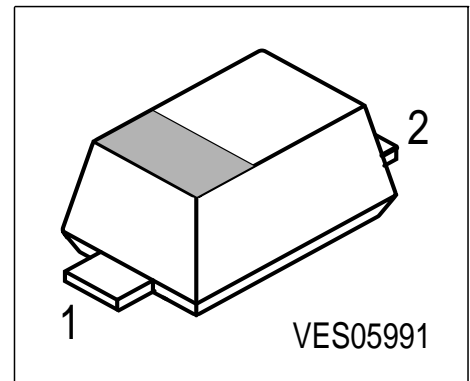# SIEMENS

Silicon PIN Diode

- High voltage current controlled
  RF resistor for RF attenuator and switches
- Frequency range above 1 MHz
- Low resistance and short carrier lifetime
- Very low inductance
- For frequencies up to 3 GHz
- Extremely small plastic SMD package

VES05991

Type	Marking	Ordering Code	Pin Configuration		Package
BAR 64-02W	M	Q62702-A1215	1 = C	2 = A	SCD-80

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	200	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

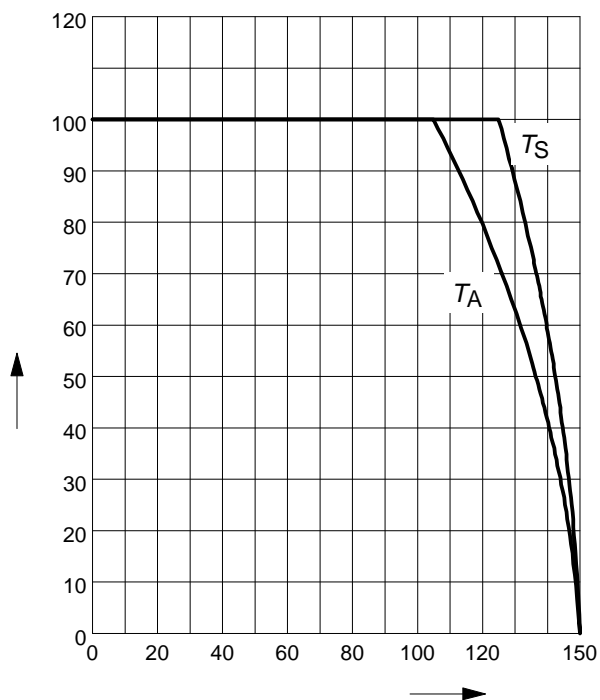|			
Junction - ambient [1]	R_{thJA}	≤ 220	K/W
Junction - soldering point	R_{thJS}	≤ 140	

[1] Package mounted on alumina 15mm x 16.7mm x 0.7mm

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

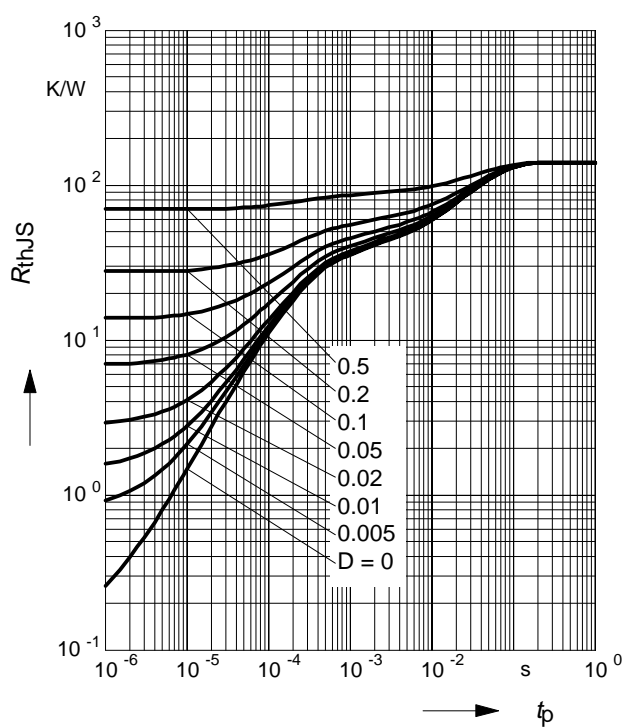| Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Breakdown voltage $I_{(BR)}$ = 5 µA	$V_{(BR)}$	200	-	-	V
Forward voltage I_F = 50 mA	V_F	-	-	1.1	mV
AC characteristics					
Diode capacitance V_R = 20 V, f = 1 MHz	C_T	-	0.23	0.35	pF
Case capacitance f = 1 MHz	C_C	-	0.09	-	
Forward resistance I_F = 1 mA, f = 100 MHz I_F = 10 mA, f = 100 MHz I_F = 100 mA, f = 100 MHz	r_f	- - -	12.5 2.1 0.85	20 3.8 1.35	Ω
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 $I_F = f(T_A^*; T_S)$

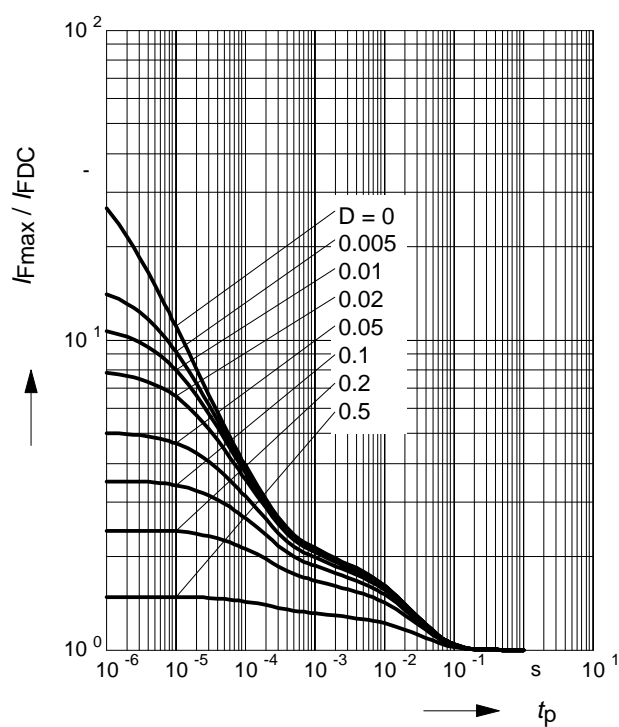*): mounted on alumina 15mm x 16.7mm x 0.7mm

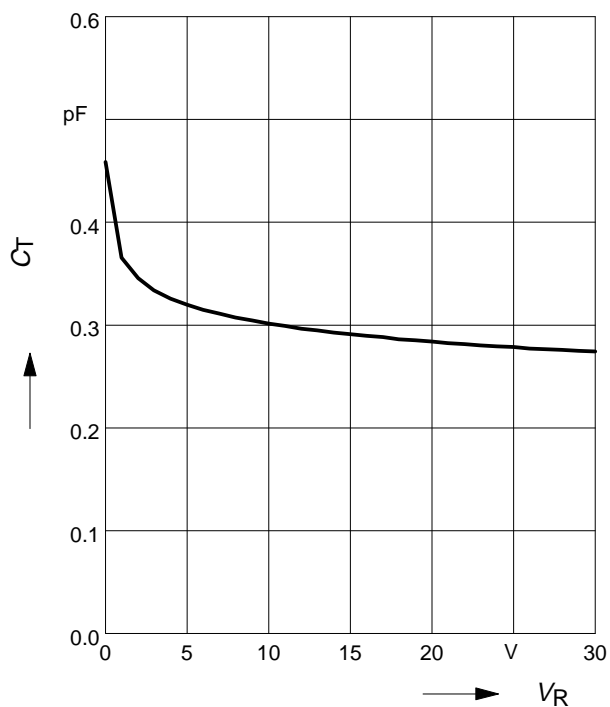## Permissible Pulse Load $R_{thJS} = f(t_p)$

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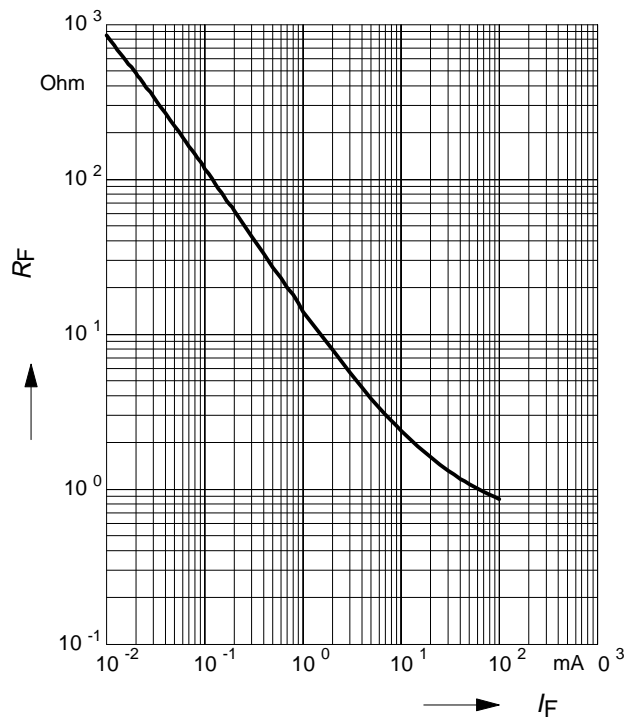$I_{Fmax} / I_{FDC} = f(t_p)$

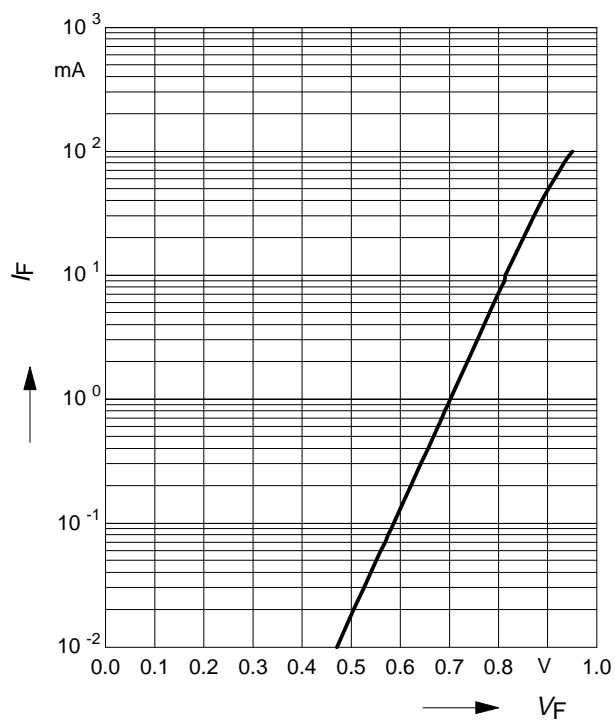**Diode capacitance** $C_T = f(V_R)$

$f = 1\text{MHz}$

Forward resistance $r_f = f(I_F)$

$f = 100\text{MHz}$

Forward current $I_F = f(V_F)$

$T_A = 25°C$

Intermodulation intersept point

$IP_3 = f(I_F)$

f = parameter