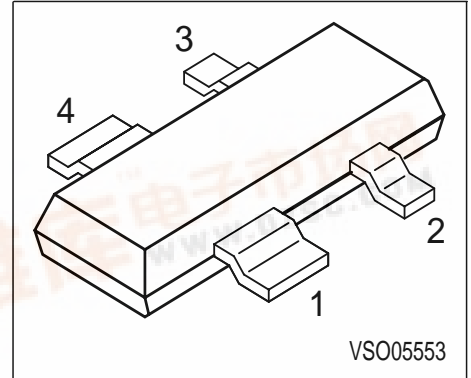# Infineon technologies

BAR80

Silicon RF Switching Diode

- Design for use in shunt configuration
- High shunt signal isolation
- Low shunt insertion loss

VSO05553

| Type	Marking	Pin Configuration				Package
BAR80	AAs	1 = C	2 = A	3 = C	4 = A	MW-4

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	35	V
Forward current	I_F	100	mA
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

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

| Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Reverse current $V_R = 20$ V	I_R	-	-	20	nA
Forward voltage $I_F = 100$ mA	V_F	0.8	-	1	V
AC characteristics					
Diode capacitance $V_R = 1$ V, $f = 1$ MHz $V_R = 3$ V, $f = 1$ MHz	C_T	- 0.6	1 0.92	1.6 1.3	pF
Forward resistance $I_F = 5$ mA, $f = 100$ MHz	r_f	-	0.5	0.7	Ω
Series inductance chip to ground	L_S	-	0.14	-	nH
Application information					
Shunt signal isolation $I_F = 10$ mA, $f = 2$ GHz, $R_G = R_L = 50\Omega$	S_I	-	23	-	dB
Shunt insertion loss $V_R = 5$ V, $f = 2$ GHz, $R_G = R_L = 50\Omega$	I_L	-	0.15	-	

Configuration of the shunt-diode
- A perfect ground is essential for optimum isolation
- The anode pins should be used as passage for RF
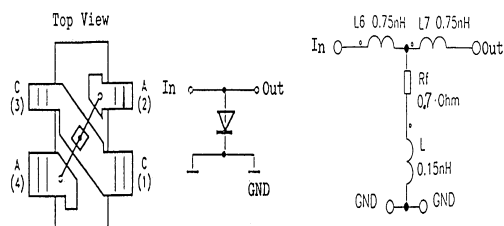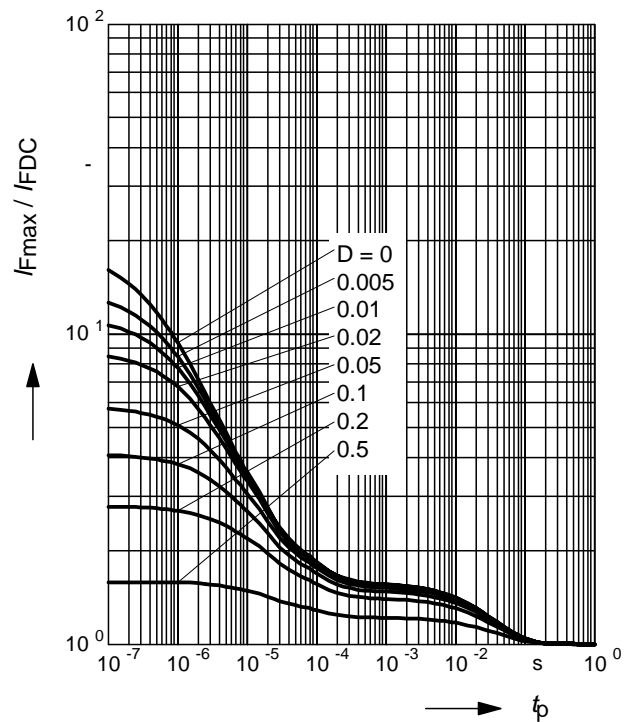
Forward current $I_F = f(T_S)$
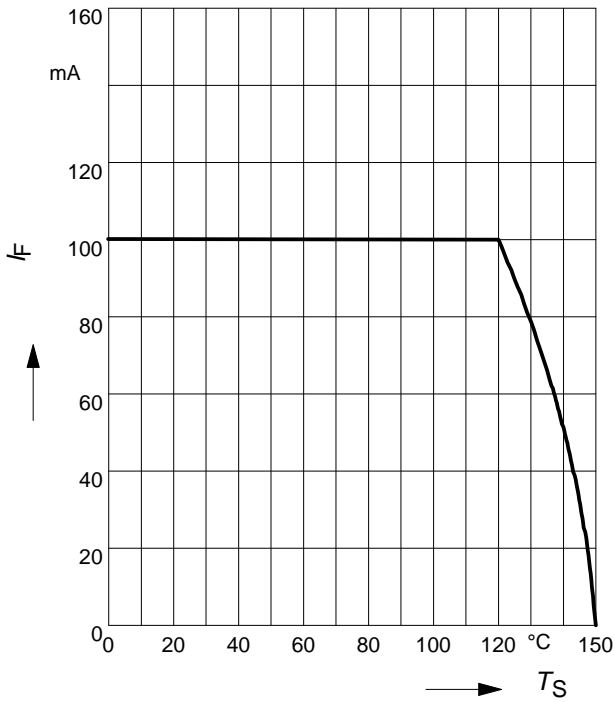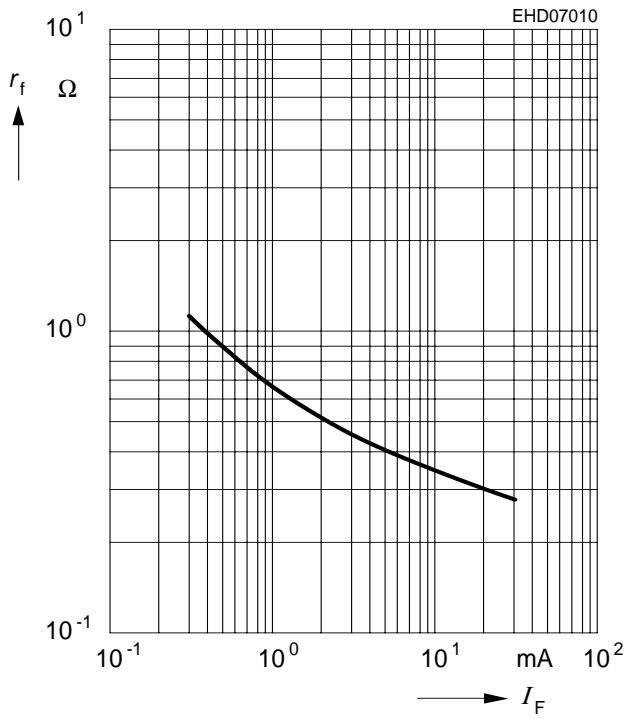

Permissible Pulse Load $R_{thJS} = f(t_p)$
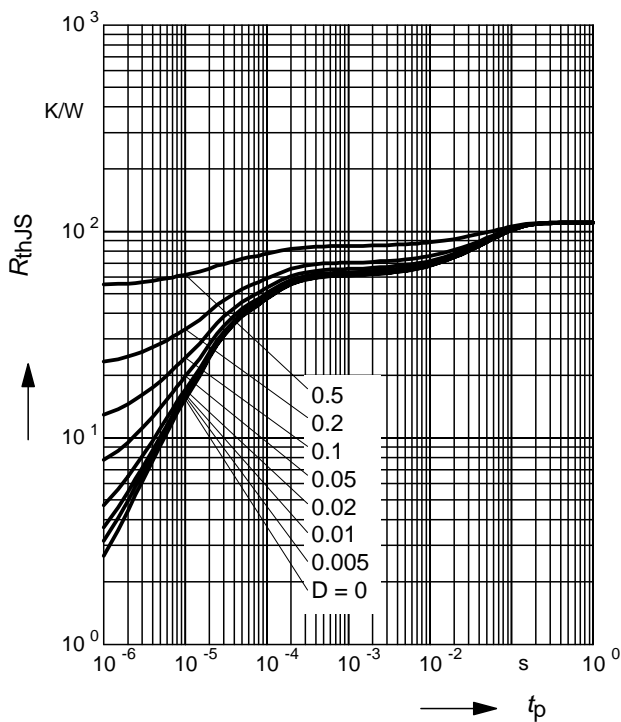
Permissible Pulse Load

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

Forward resistance $r_f = f(I_F)$

$f = 100\text{MHz}$

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$