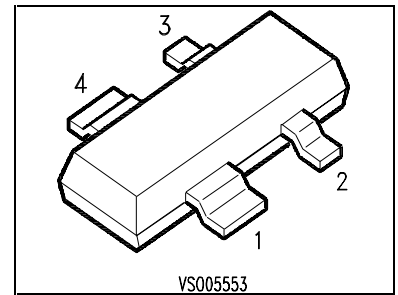


Silicon RF Switching Diode

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



Type	Marking	Ordering code (tape and reel)	Pin configuration				Package ¹⁾
			1	2	3	4	
BAR 80	AAAs	Q62702-A1084	C	A	C	A	MW-4

Maximum ratings

Parameter	Symbol	BAR 80	Unit
Reverse voltage	V_R	35	V
Forward current	I_F	100	mA
Operating temperature range	T_{op}	-55...+125	°C
Storage temperature range	T_{stg}	-55...+150	°C

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

Electrical characteristics

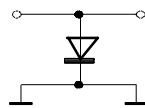
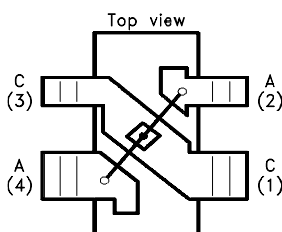
at $T_A = 25\text{ °C}$, unless otherwise specified.

Parameter	Symbol	Value			Unit
		min.	typ.	max.	
Reverse current $V_R = 20\text{ V}$	I_R	-	-	20	nA
Forward voltage $I_F = 100\text{ mA}$	V_F	-	0.92	1	V
Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 3\text{ V}, f = 1\text{ MHz}$	C_T	- 0.6	1 0.92	1.6 1.3	pF
Forward resistance $f = 100\text{ MHz}$ $I_F = 5\text{ mA}$	r_f	-	0.5	0.7	Ω
Series inductance to ground	L_s	-	0.14	-	nH

Application information

Shunt signal isolation $I_F = 10\text{ mA}, f = 2\text{ GHz}, R_G = R_L = 50\ \Omega$	-	-	23	-	dB
Shunt insertion loss $V_R = 5\text{ V}, f = 2\text{ GHz}, R_G = R_L = 50\ \Omega$	I_L	-	0.15	-	dB

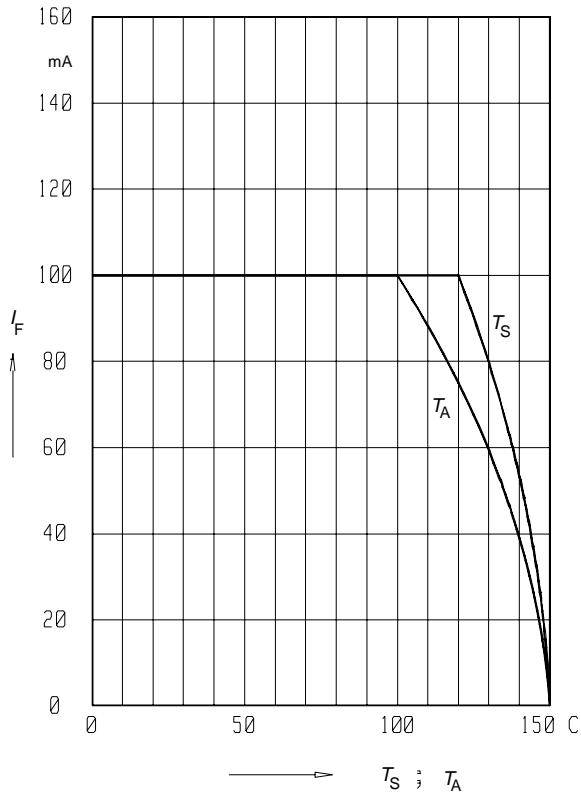
Configuration of the shunt-diode



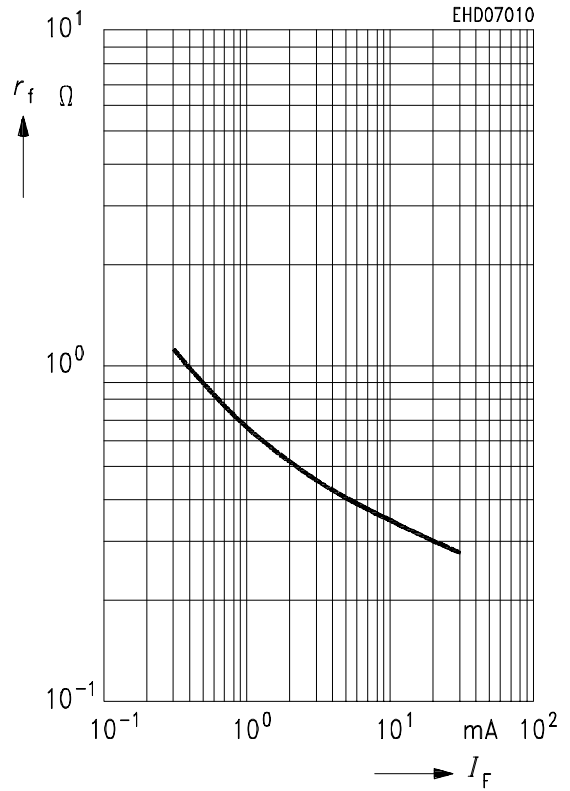
EHA07119

- A perfect ground is essential for optimum isolation
- The anode pins should be used as passage for RF

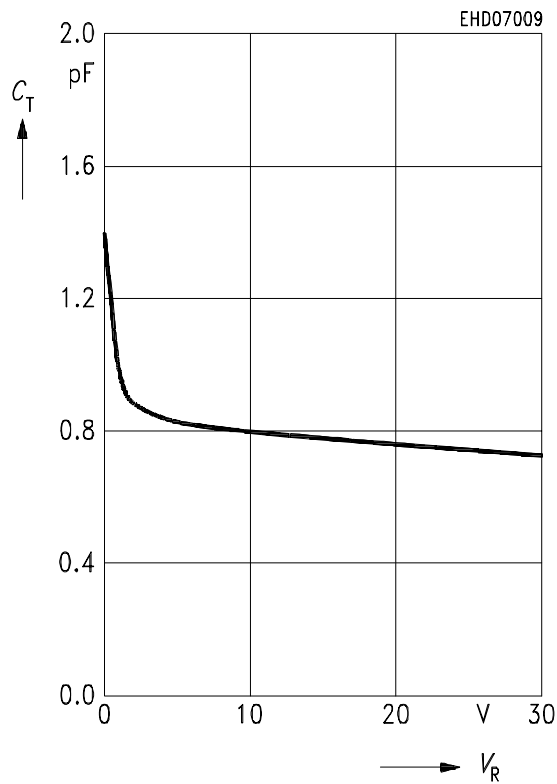
Forward current $I_F = f(T_S, T_A)$



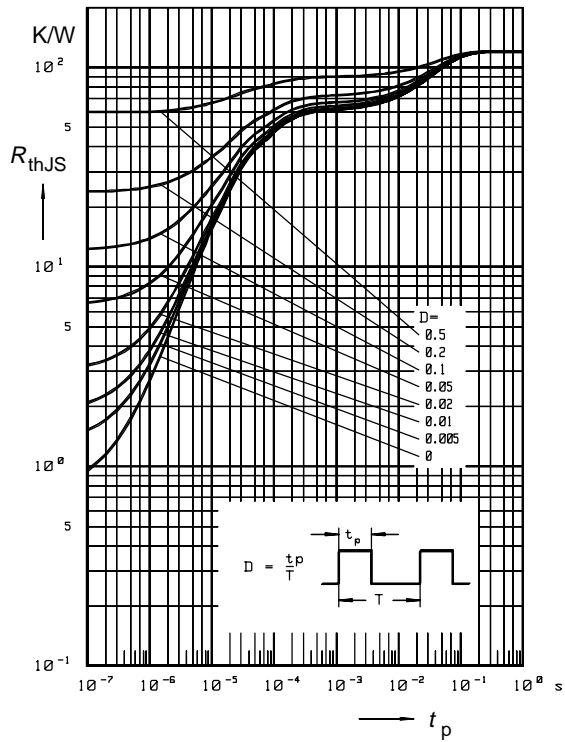
**Forward resistance $r_f = f(I_F)$
 $f = 100 \text{ MHz}$**



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



Permissible pulse load $R_{thJS} = f(t_p)$



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

