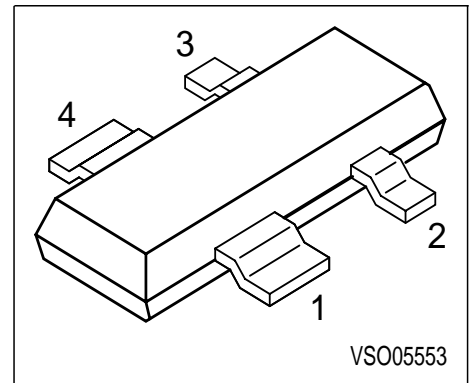


**Silicon RF Switching Diode**

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



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

**Maximum Ratings**

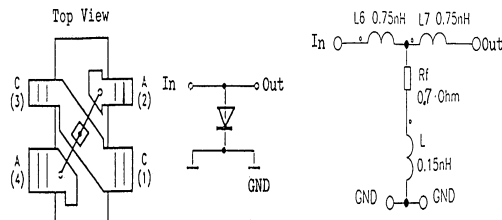
Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	35	V
Forward current	$I_F$	100	mA
Junction temperature	$T_j$	150	°C
Operating temperature range	$T_{op}$	-55 ... 125	
Storage temperature	$T_{stg}$	-55 ... 150	

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

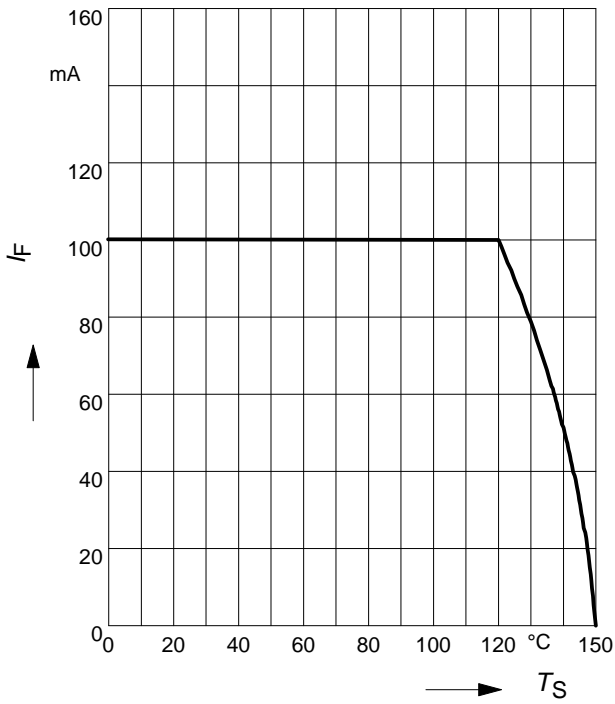
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC characteristics</b>					
Reverse current $V_R = 20\text{ V}$	$I_R$	-	-	20	nA
Forward voltage $I_F = 100\text{ mA}$	$V_F$	0.8	-	1	V
<b>AC characteristics</b>					
Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 3\text{ V}, f = 1\text{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

### Configuration of the shunt-diode

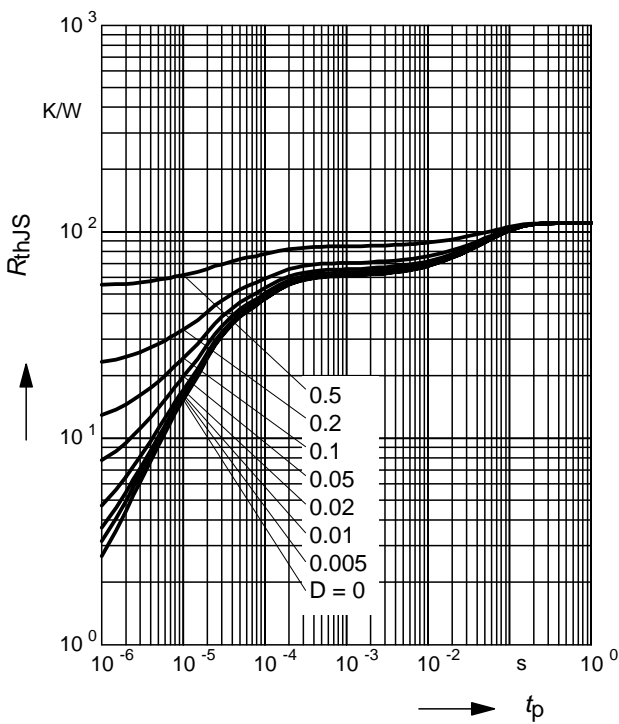
- A perfect ground is essential for optimum isolation
- The anode pins should be used as passage for RF



**Forward current  $I_F = f(T_S)$**

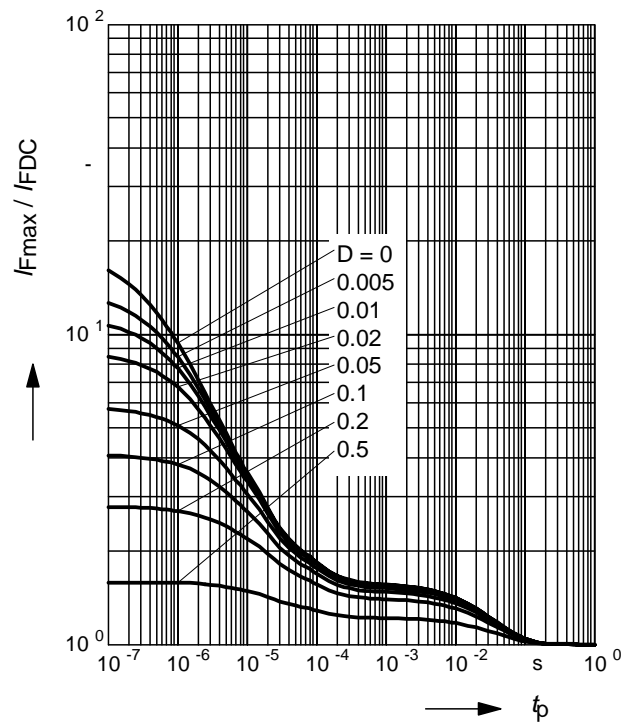


**Permissible Pulse Load  $R_{thJS} = f(t_p)$**



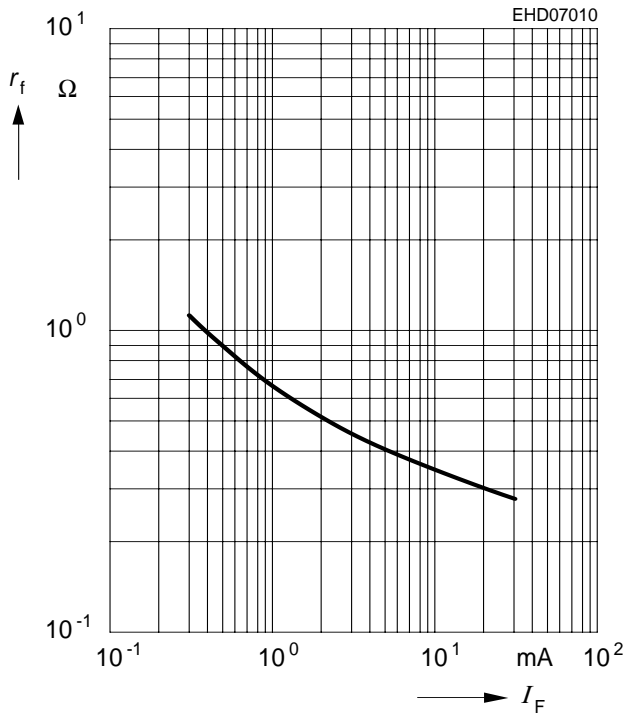
**Permissible Pulse Load**

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



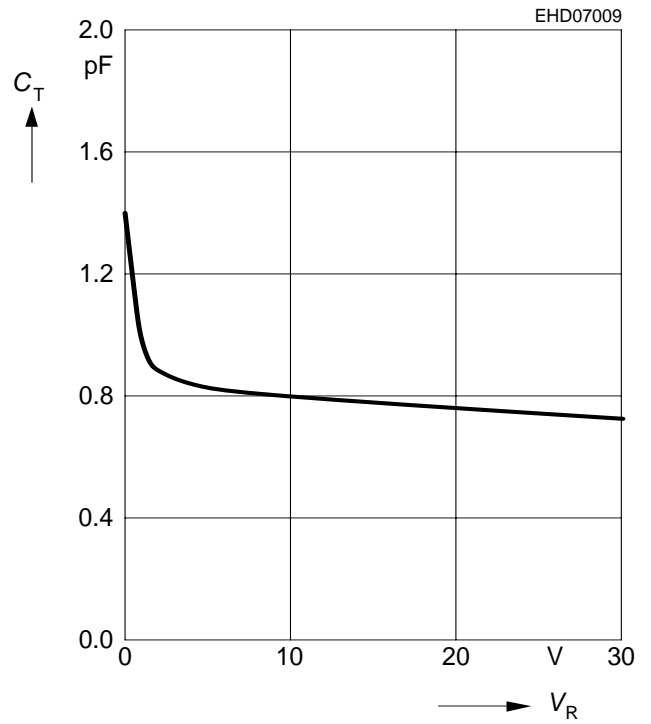
**Forward resistance  $r_f = f(I_F)$**

$f = 100\text{MHz}$



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

$f = 1\text{MHz}$



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