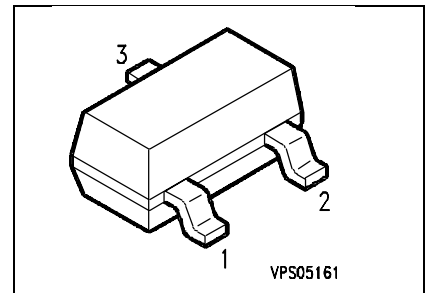


## Silicon PIN Diode

- High voltage current controlled
- RF resistor for RF attenuator and switches
- Frequency range above 1 MHz
- Low resistance and short carrier lifetime
- For frequencies up to 3 GHz



Type	Marking	Ordering code (tape and reel)	Pin configuration			Package <sup>1)</sup>
			1	2	3	
BAR 64	POs	Q62702-A1041	A	-	C	SOT-23
BAR 64-04	PPs	Q62702-A1010	A	C	C/A	
BAR 64-05	PRs	Q62702-A1042	A	A	C/C	
BAR 64-06	PSs	Q62702-A1043	C	C	A/A	

### Maximum ratings per diode

Parameter	Symbol	BAR 64	Unit
Reverse voltage	$V_R$	200	V
Forward current	$I_F$	100	mA
Total Power dissipation $T_S \leq 90^\circ\text{C}$	$P_{tot}$	250	mW
BAR64-04,-05,-06 $T_S \leq 65^\circ\text{C}$		250	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Operating temperature range	$T_{op}$	-55 +150 $^\circ\text{C}$	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55...+150 $^\circ\text{C}$	$^\circ\text{C}$

### Thermal resistance

Parameter	Symbol	Value	Unit
Junction-ambient <sup>1)</sup>	$R_{th JA}$		K/W
BAR64		$\leq 320$	
BAR64-04,-05,-06		$\leq 500$	
Junction-soldering point	$R_{th JS}$		
BAR64		$\leq 240$	
BAR64-04,-05,-06		$\leq 340$	

<sup>1)</sup>Package mounted on alumina 15mm x 16.7mm x 0.7mm

**Electrical characteristics**

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

Parameter	Symbol	Value			Unit
		min.	typ.	max.	

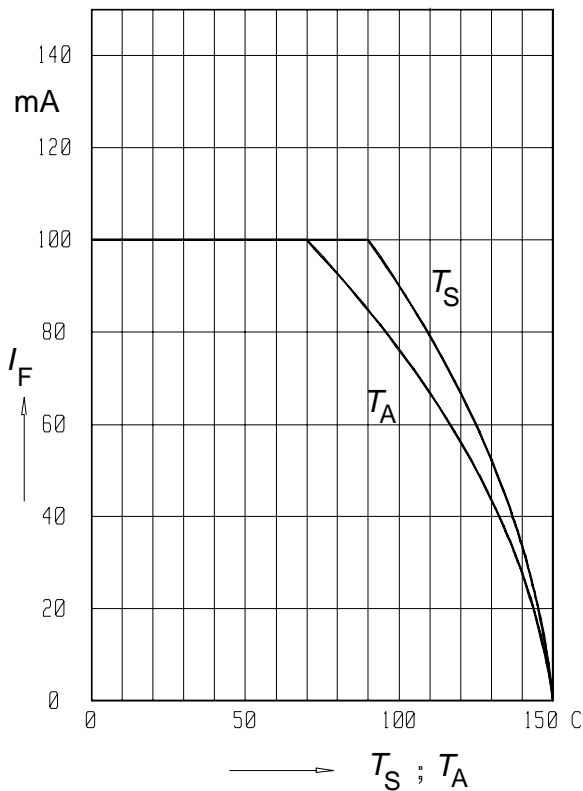
**DC characteristics per diode**

Breakdown voltage $I_R = 5\text{ }\mu\text{A}$	$V_{(BR)}$	200	-	-	V
Forward voltage $I_F = 50\text{ mA}$	$V_F$	-	-	1.1	V
Diode capacitance $V_R = 20\text{ V}, f = 1\text{ MHz}$	$C_T$	-	0.23	0.35	pF
Forward resistance $I_F = 1\text{ mA}, f = 100\text{ MHz}$ $I_F = 10\text{ mA}, f = 100\text{ MHz}$ $I_F = 100\text{ mA}, f = 100\text{ MHz}$	$r_f$	- --	12.5 2.1 0.85	20 3.8 1.35	$\Omega$
Charge carrier lifetime $I_F = 10\text{ mA}, I_R = 6\text{ mA}, I_R = 3\text{ mA}$	$\tau_L$	-	1.55	-	$\mu\text{s}$
Series inductance	$L_S$	-	1.4	-	nH

**Forward current  $r_F = f(T_S; T_A^*)$**

\* mounted on alumina

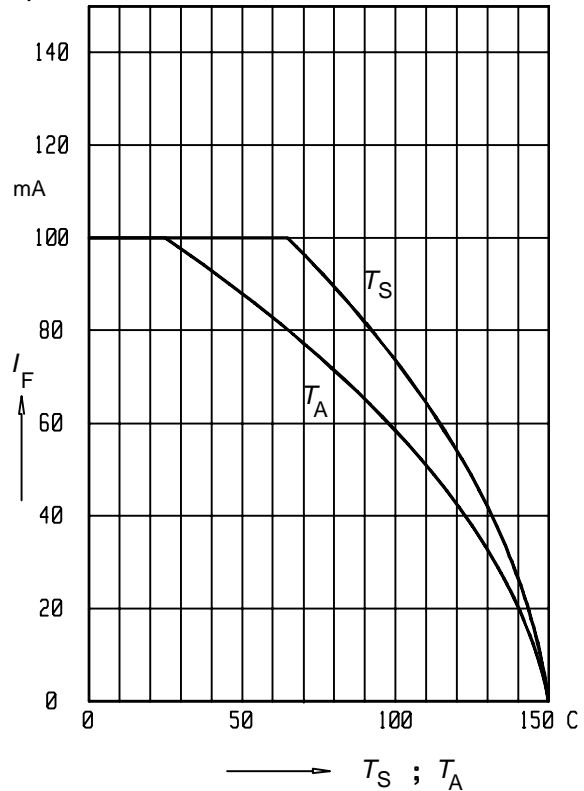
BAR64



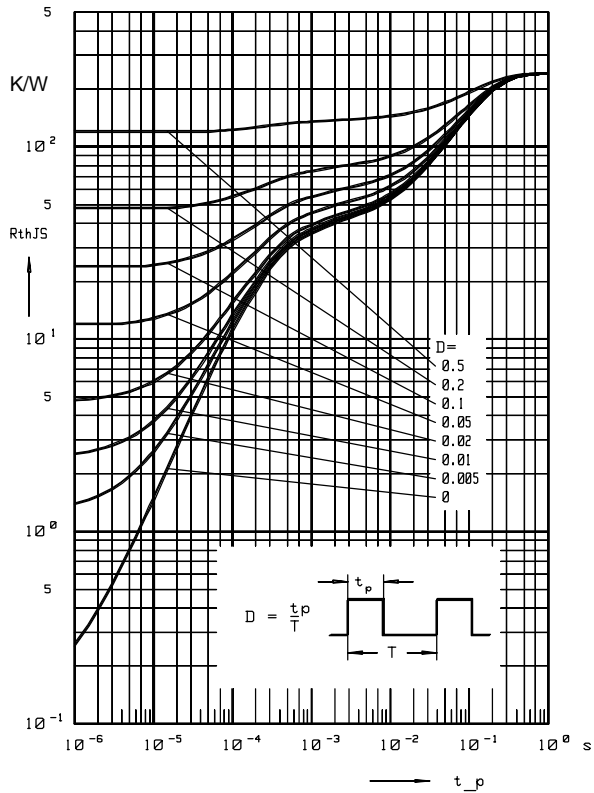
**Forward current  $r_F = f(T_S; T_A^*)$**

per each diode

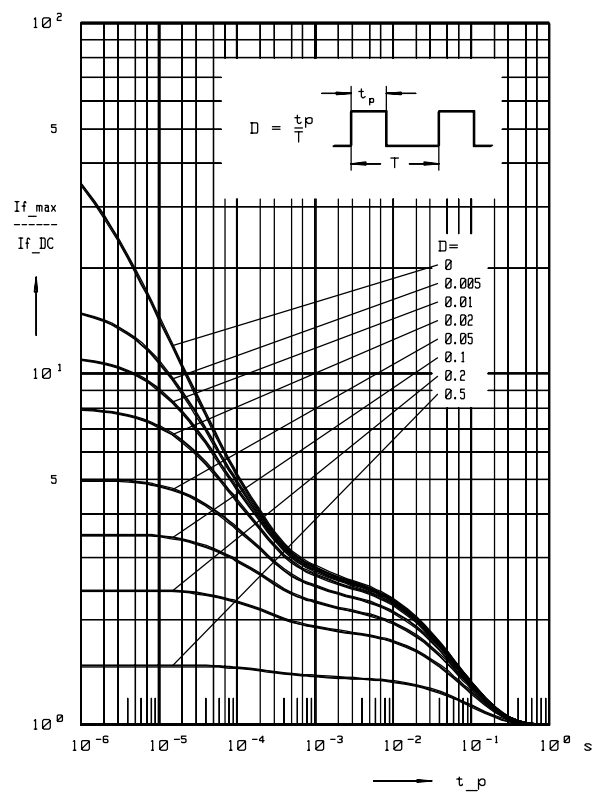
BAR64-05,-05,-06



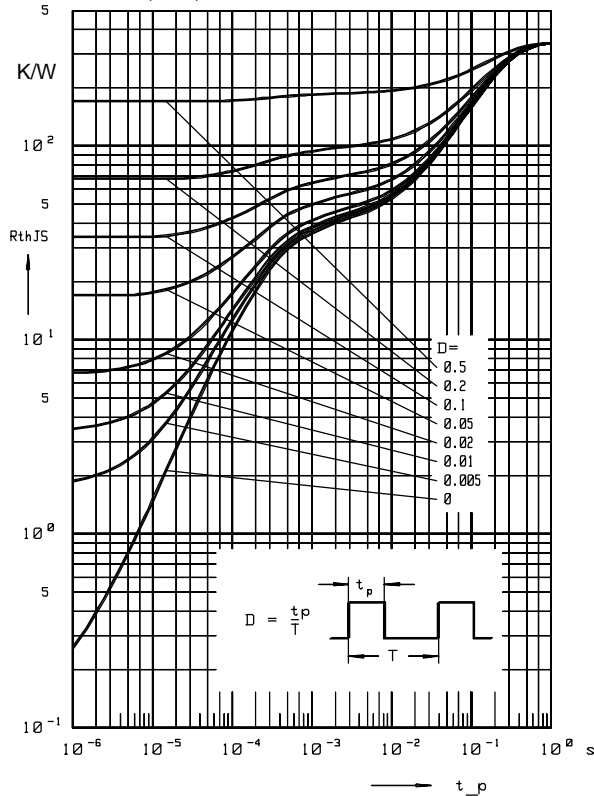
Permissible pulse load  $R_{thJS} = f(t_p)$   
BAR64



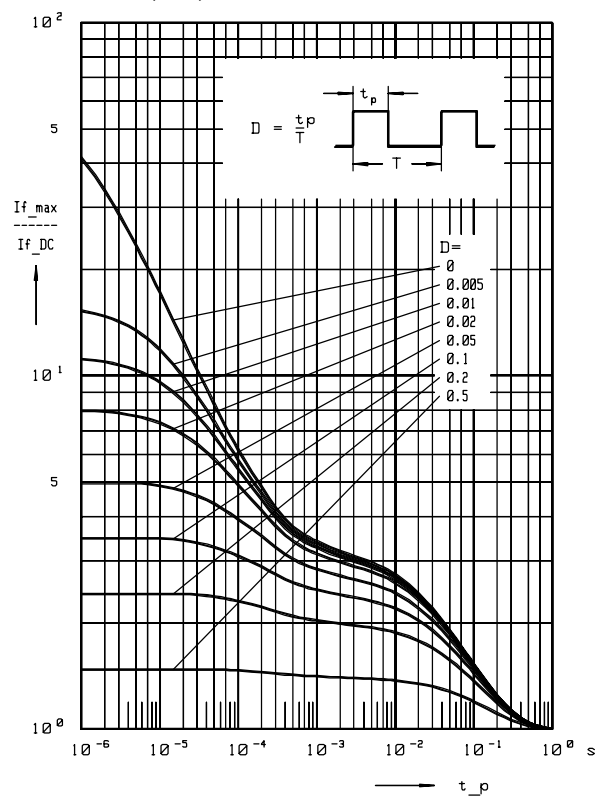
Permissible pulse load  $I_{fmax}/I_{fDC} = f(t_p)$   
BAR64



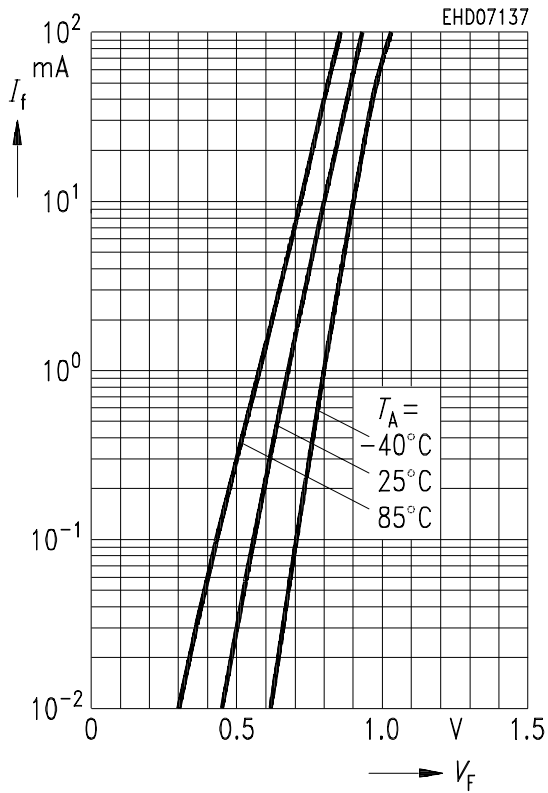
Permissible pulse load  $R_{thJS} = f(t_p)$   
BAR64-04,-05,-06



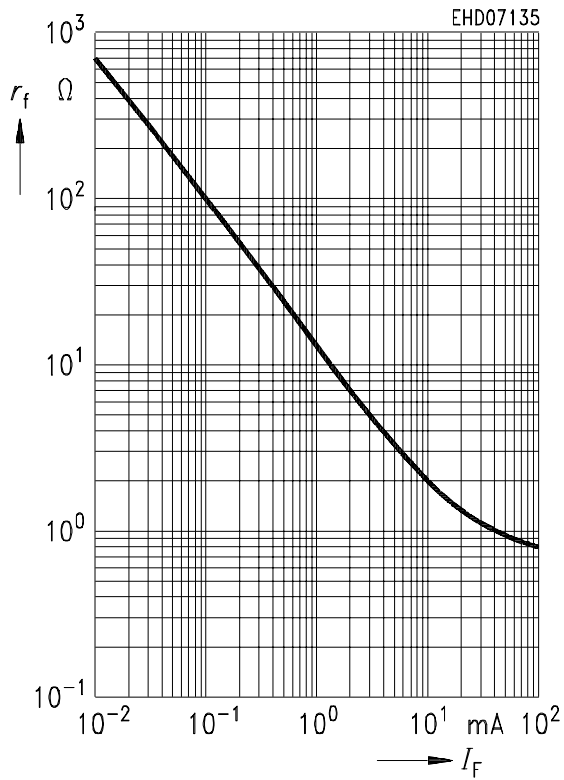
Permissible pulse load  $I_{Fmax}/I_{FDC} = f(t_p)$   
BAR64-04,-05,-06



Forward current  $I_F = f(V_F)$



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



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

