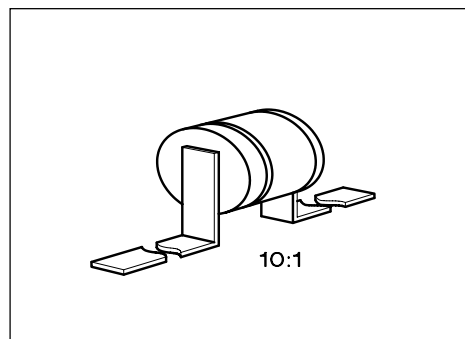


## Silicon Schottky Diodes

BAT 14- ... 4

- Medium barrier diodes for detector and mixer applications
- Hermetical ceramic package
- For frequencies up to 40 GHz



**ESD:** Electrostatic discharge sensitive device, observe handling precautions!

Type	Frequency band (GHz)	Ordering Code	Pin Configuration	Package <sup>1)</sup>
BAT 14-014 BAT 14-034	... 4 (S)	Q62702-D1005 Q62702-D1019		T1
BAT 14-044 BAT 14-064	... 8 (C)	Q62702-D1026 Q62702-D1036		
BAT 14-074 BAT 14-094	... 12 (X)	Q62702-D1041 Q62702-D1051		
BAT 14-104 BAT 14-114	... 18 (Ku)	Q62702-D1056 Q62702-D1061		
BAT 14-124	... 40 (Ka)	Q62702-D1066		

### Maximum Ratings

Parameter	Symbol	Values	Unit
Reverse voltage	$V_R$	3	V
Forward current	$I_F$	BAT 14-014 ... BAT 14-064: 100 BAT 14-074 ... BAT 74-124: 50	mA
Junction temperature	$T_j$	175	°C
Storage temperature range	$T_{stg}$	- 65 ... + 150	
Operating temperature range	$T_{op}$	- 65 ... + 150	

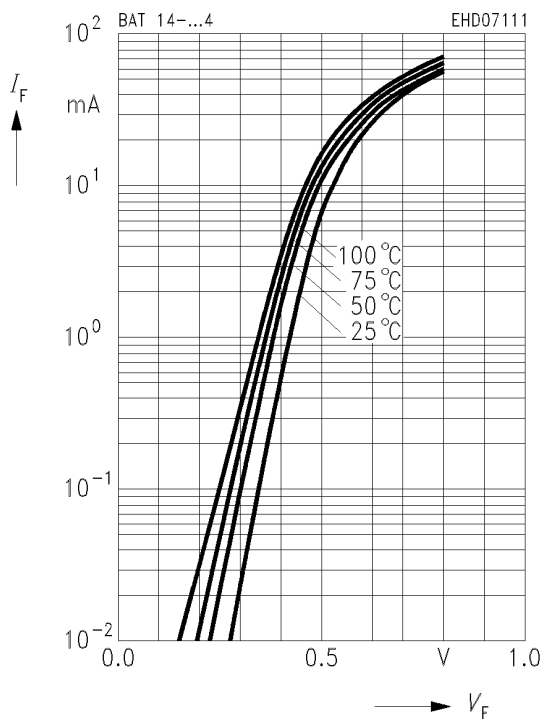
<sup>1)</sup> For detailed information see chapter Package Outlines.

## Electrical Characteristics

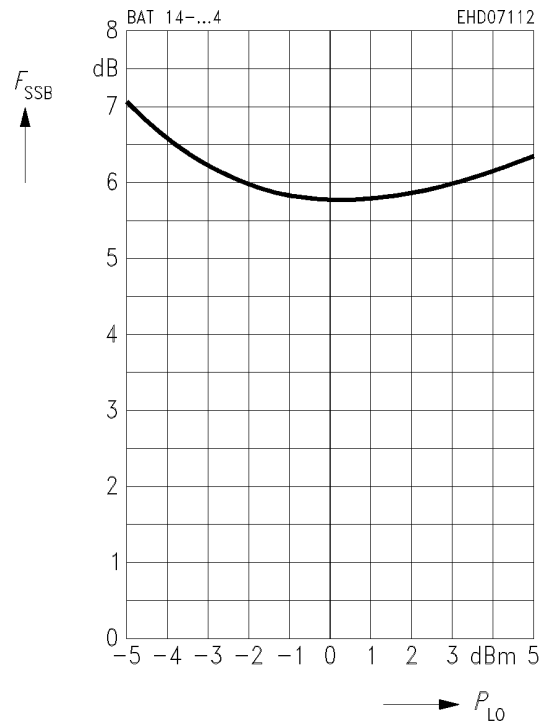
at  $T_A = 25\text{ °C}$ , unless otherwise specified.

Parameter	Symbol	Values			Unit	
		min.	typ.	max.		
Breakdown voltage $I_R = 10\text{ }\mu\text{A}$	$V_{(BR)}$	3	–	–	V	
Forward voltage $I_F = 1\text{ mA}$	$V_F$	BAT 14-014/-034	–	0.42	–	pF
		BAT 14-044/-064	–	0.43	–	
		BAT 14-074/-094	–	0.44	–	
		BAT 14-104/-114	–	0.46	–	
		BAT 14-124	–	0.47	–	
$I_F = 10\text{ mA}$	BAT 14-014/-034	–	0.5	–		
	BAT 14-044/-064	–	0.53	–		
	BAT 14-074/-094	–	0.55	–		
	BAT 14-104/-114	–	0.58	–		
	BAT 14-124	–	0.63	–		
Diode capacitance $f = 1\text{ MHz}$ , $V_R = 0$	$C_T$	BAT 14-014/-034	–	0.25	0.35	
		BAT 14-044/-064	–	0.2	0.25	
		BAT 14-074/-094	–	0.17	0.2	
		BAT 14-104/-114	–	0.13	0.15	
		BAT 14-124	–	0.1	0.12	
Case capacitance	$C_C$	–	0.1	–		
Noise figure (single sideband) IF amplifier noise $F_{IF} = 1.5\text{ dB}$ , $P_{LO} = 3\text{ dBm}$ , $f_{IF} = 10.7\text{ MHz}$	$F_{SSB}$				dB	
$f = 3\text{ GHz}$		BAT 14-014	–	5.5		–
		BAT 14-034	–	6.5		–
$f = 6\text{ GHz}$		BAT 14-044	–	5.5		–
		BAT 14-064	–	6.5		–
$f = 9.3\text{ GHz}$		BAT 14-074	–	5.5		–
		BAT 14-094	–	6.5		–
$f = 16\text{ GHz}$		BAT 14-104	–	6.0		–
		BAT 14-114	–	7.0		–
		BAT 14-124	–	9.0		–
Differential forward resistance $I_F = 10/50\text{ mA}$	$r_f$	BAT 14-014	–	3	–	$\Omega$
		BAT 14-034	–	4	–	
		BAT 14-044	–	3.5	–	
		BAT 14-064	–	4.5	–	
		BAT 14-074	–	4.5	–	
		BAT 14-094	–	5.5	–	
		BAT 14-104	–	5.5	–	
		BAT 14-114	–	7	–	
	BAT 14-124	–	8	–		

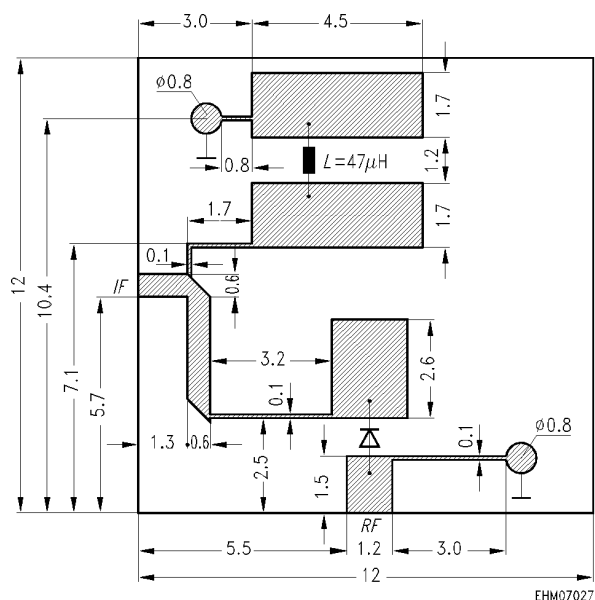
### Forward current $I_F = f(V_F)$ of BAT 14-094



### Single sideband noise $F_{SSB} = f(P_{Lo})$ $f_{Lo} = 9.375$ GHz, $f_{IF} = 10.7$ MHz at $F_{IF} = 1.5$ dB



### Measuring circuit for IF amplifier noise



Ceramic p. c. board for noise measurement  
at 9.375 GHz (material = alumina;  $E_R = 9.94$ ; thickness  
= 0.635 mm)

Dimensions in mm