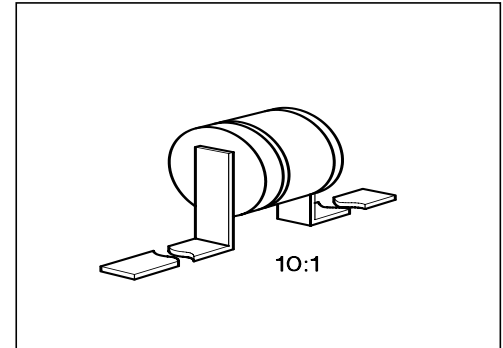


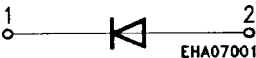
Silicon Schottky Diodes

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 ¹⁾
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 BAT 14-014 ... BAT 14-064 BAT 14-074 ... BAT 74-124	I_F	100 50	mA
Junction temperature	T_j	175	°C
Storage temperature range	T_{stg}	– 65 ... + 150	
Operating temperature range	T_{op}	– 65 ... + 150	

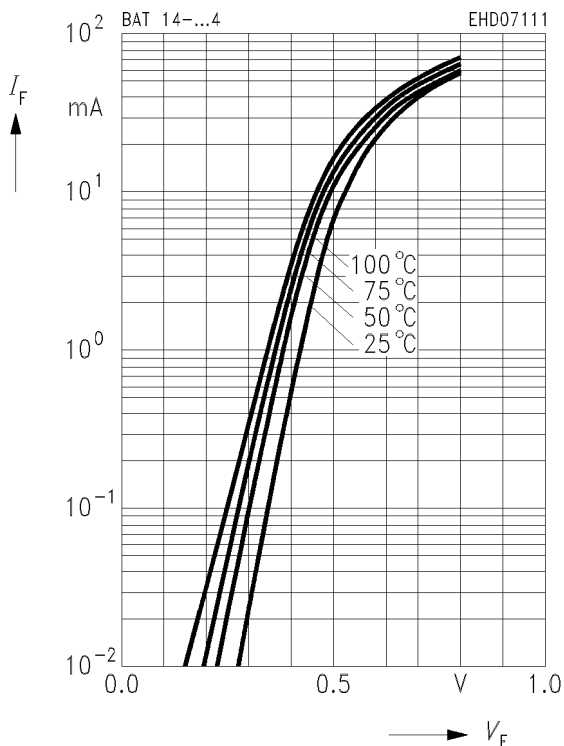
¹⁾ For detailed information see chapter Package Outlines.

Electrical Characteristics

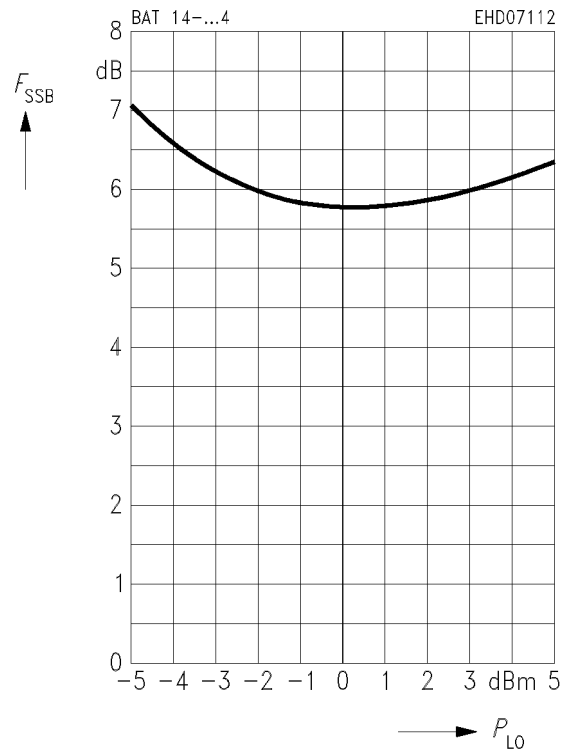
at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified.

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	—	0.42	—	
BAT 14-014/-034		—	0.43	—	
BAT 14-044/-064		—	0.44	—	
BAT 14-074/-094		—	0.46	—	
BAT 14-104/-114		—	0.47	—	
BAT 14-124		—	0.5	—	
$I_F = 10\text{ mA}$		—	0.53	—	
BAT 14-014/-034		—	0.55	—	
BAT 14-044/-064		—	0.58	—	
BAT 14-074/-094		—	0.63	—	
Diode capacitance $f = 1\text{ MHz}$, $V_R = 0$	C_T	—	0.25	0.35	pF
BAT 14-014/-034		—	0.2	0.25	
BAT 14-044/-064		—	0.17	0.2	
BAT 14-074/-094		—	0.13	0.15	
BAT 14-104/-114		—	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
$f = 3\text{ GHz}$		—	5.5	—	
BAT 14-014		—	6.5	—	
BAT 14-034		—	5.5	—	
$f = 6\text{ GHz}$		—	6.5	—	
BAT 14-044		—	5.5	—	
BAT 14-064		—	6.5	—	
$f = 9.3\text{ GHz}$		—	5.5	—	
BAT 14-074		—	6.5	—	
BAT 14-094		—	6.0	—	
$f = 16\text{ GHz}$		—	7.0	—	
BAT 14-104		—	9.0	—	
BAT 14-114					
BAT 14-124					
Differential forward resistance $I_F = 10/50\text{ mA}$	r_f	—	3	—	Ω
BAT 14-014		—	4	—	
BAT 14-034		—	3.5	—	
BAT 14-044		—	4.5	—	
BAT 14-064		—	4.5	—	
BAT 14-074		—	5.5	—	
BAT 14-094		—	5.5	—	
BAT 14-104		—	7	—	
BAT 14-114		—	8	—	
BAT 14-124					

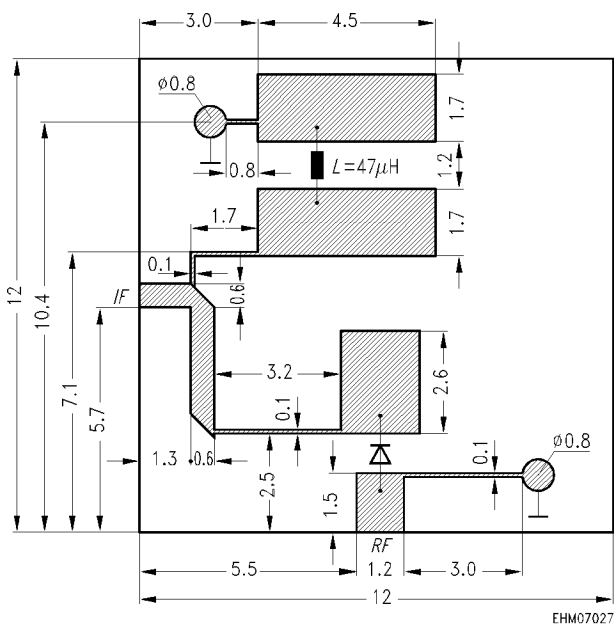
Forward current $I_F = f(V_F)$ of BAT 14-094



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



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