

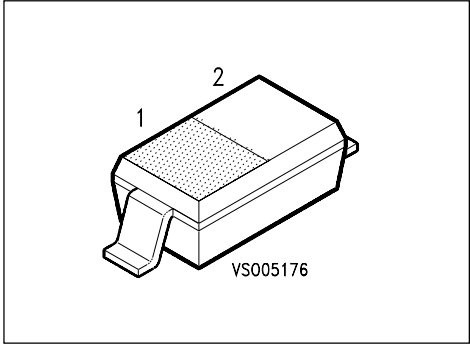
SIEMENS

Silicon Schottky Diode

BAT 15-098

Preliminary Data

- DBS mixer application to 10 GHz
- Low noise figure
- Low barrier type



ESD: Electrostatic discharge sensitive device, observe handling precautions!

Type	Marking	Ordering Code (tape and reel)	Pin Configuration	Package ¹⁾
BAT 15-098	white B	Q62702-A0062		SOD-123

Maximum Ratings

Parameter	Symbol	Values	Unit
Reverse voltage	V_R	4	V
Forward current	I_F	110	mA
Power dissipation, $T_s \leq 80^\circ\text{C}$	P_{tot}	100	mW
Storage temperature range	T_{stg}	$-55 \dots +150$	$^\circ\text{C}$
Operating temperature range	T_{op}	$-55 \dots +150$	

Thermal Resistance

Junction - ambient ²⁾	$R_{\text{th JA}}$	≤ 770	K/W
Junction - soldering point	$R_{\text{th JS}}$	≤ 690	

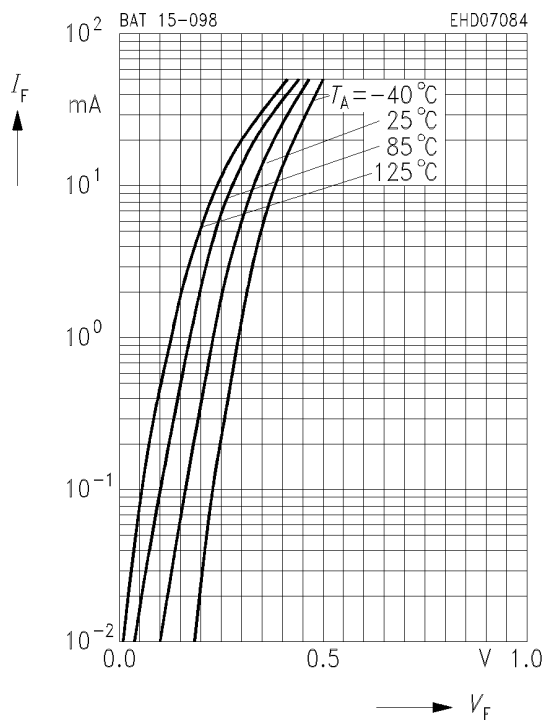
¹⁾ For detailed information see chapter Package Outlines.

²⁾ Package mounted on alumina 15 mm × 16.7 mm × 0.7 mm.

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

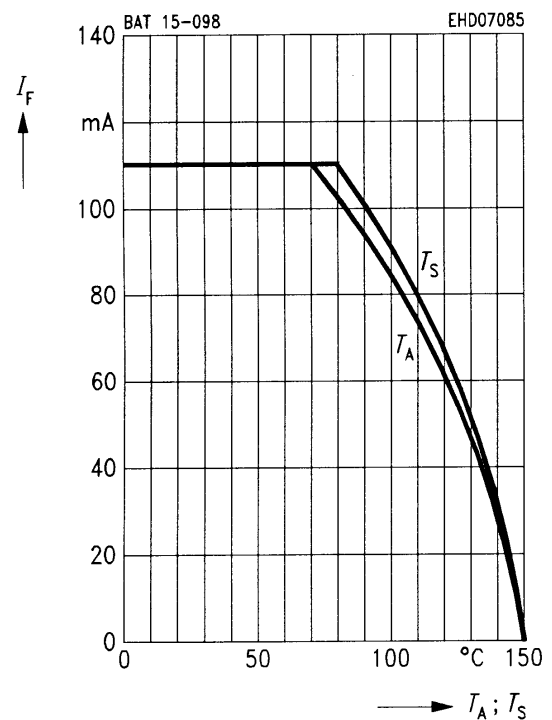
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Breakdown voltage $I_R = 5\text{ }\mu\text{A}$	$V_{(BR)}$	4	—	—	V
Forward voltage $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$	V_F	— —	0.23 0.32	— —	
Forward voltage matching $I_F = 10\text{ mA}$	ΔV_F	—	—	20	mV
Diode capacitance $V_R = 0, f = 1\text{ MHz}$	C_T	—	—	0.35	pF
Forward resistance $I_F = 10\text{ mA}/50\text{ mA}$	R_F	—	5.5	—	Ω

Forward current $I_F = f(V_F)$

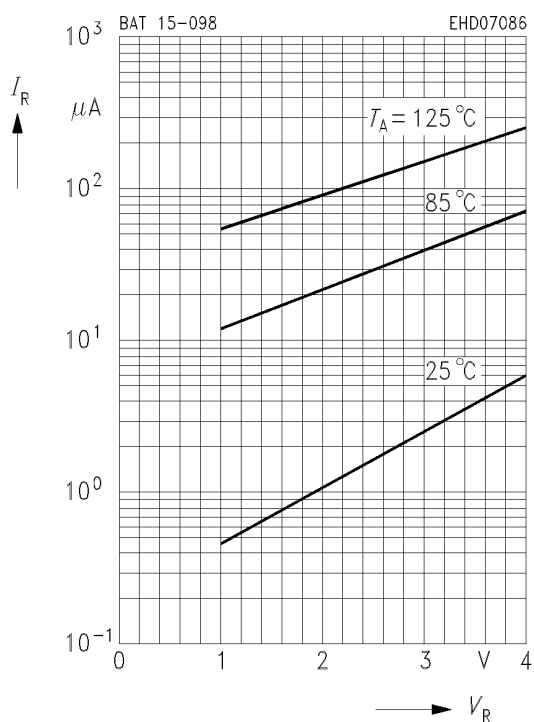


Forward current $I_F = f(T_S; T_A^*)$

*Package mounted on alumina

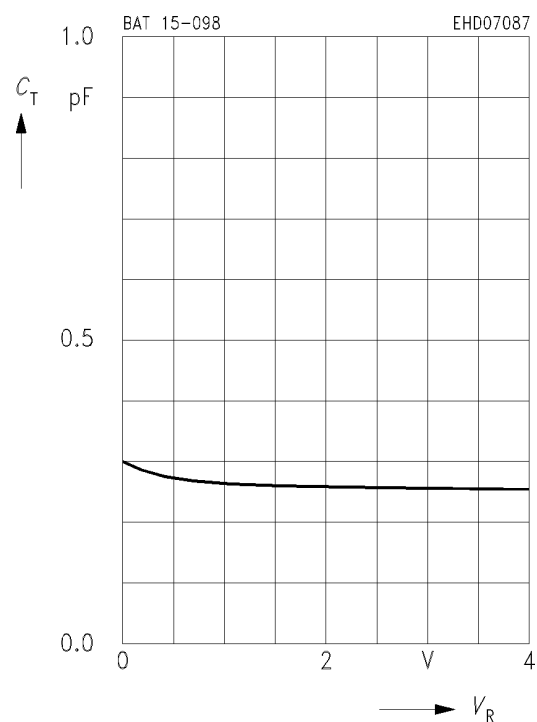


Reverse current $I_R = f(V_R)$



Diode capacitance $C_T = f(V_R)$

$f = 1 \text{ MHz}$

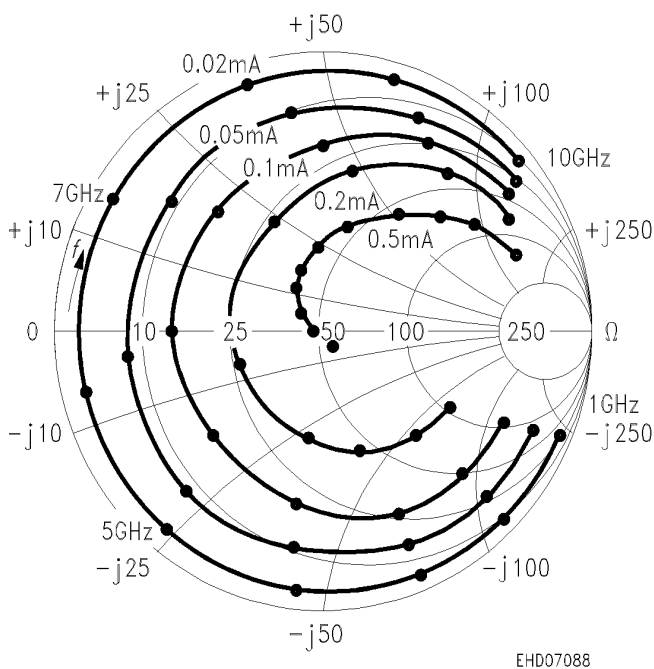


S_{11} -Parameters

Typical impedance characteristics (with external bias I and $Z_0 = \Omega$)

f	$I = 0.02 \text{ mA}$		$I = 0.05 \text{ mA}$		$I = 0.1 \text{ mA}$		$I = 0.2 \text{ mA}$		$I = 0.5 \text{ mA}$	
GHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1	0.96	- 22.19	0.83	- 24.20	0.71	- 24.59	0.71	- 24.59	0.06	- 36.11
2	0.95	- 44.30	0.82	- 46.30	0.68	- 46.70	0.68	- 46.70	0.04	- 53.72
3	0.94	- 68.60	0.80	- 71.30	0.65	- 72.30	0.65	- 72.30	0.03	- 94.30
4	0.91	- 96.40	0.76	- 100.00	0.61	- 101.50	0.61	- 101.50	0.09	122.49
5	0.88	- 127.50	0.74	- 133.50	0.57	- 138.50	0.57	- 138.50	0.18	101.50
6	0.87	- 165.30	0.72	- 174.30	0.55	- 151.30	0.55	- 151.30	0.29	81.30
7	0.86	- 150.50	0.72	141.50	0.60	133.70	0.60	133.70	0.41	65.70
8	0.89	109.60	0.78	101.70	0.68	94.70	0.68	94.70	0.52	49.50
9	0.91	75.20	0.84	68.89	0.77	63.90	0.77	63.90	0.61	33.50
10	0.93	45.10	0.88	41.10	0.83	38.40	0.83	38.40	0.71	19.49

$$S_{11} = f(f, I)$$



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