

Flip-Chip Dual Diode

GaAs Diode

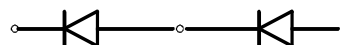
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Description

The DBES103/110 is a dual Schottky diode family based on a low cost 1 μ m stepper process including a bump technology. The parasitic inductances are reduced and result in a very high operating frequency.

Flip-chip dual diodes are available with different widths : 3, 5, 7 and 10 μ m for high performance mixer applications.

The double-diode geometry of the chip is attractive for mixers, e.g..



Main Features

- High cut-off frequencies : > 3THz
- High breakdown voltage : < -5V
@ 40 μ A/10 μ m
- Good ideality factor : < 1.2
- Low parasitic inductances
- Low cost technology
- Dimensions : 0.52 x 0.22 mm

Main Characteristics

Tamb. = 25°C

Symbol	Parameter	Typ	Unit
Fco	Cut-off frequency	> 3	THz
n	Ideality factor	1.2	
BVak	Anode-cathode break-down voltage	< -5	V

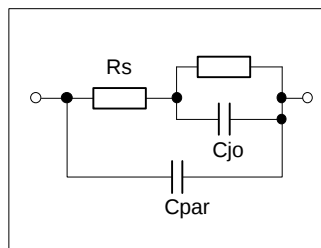
ESD Protection : Electrostatic discharge sensitive device. Observe handling precautions !

Electrical Characteristics

Tamb = +25°C

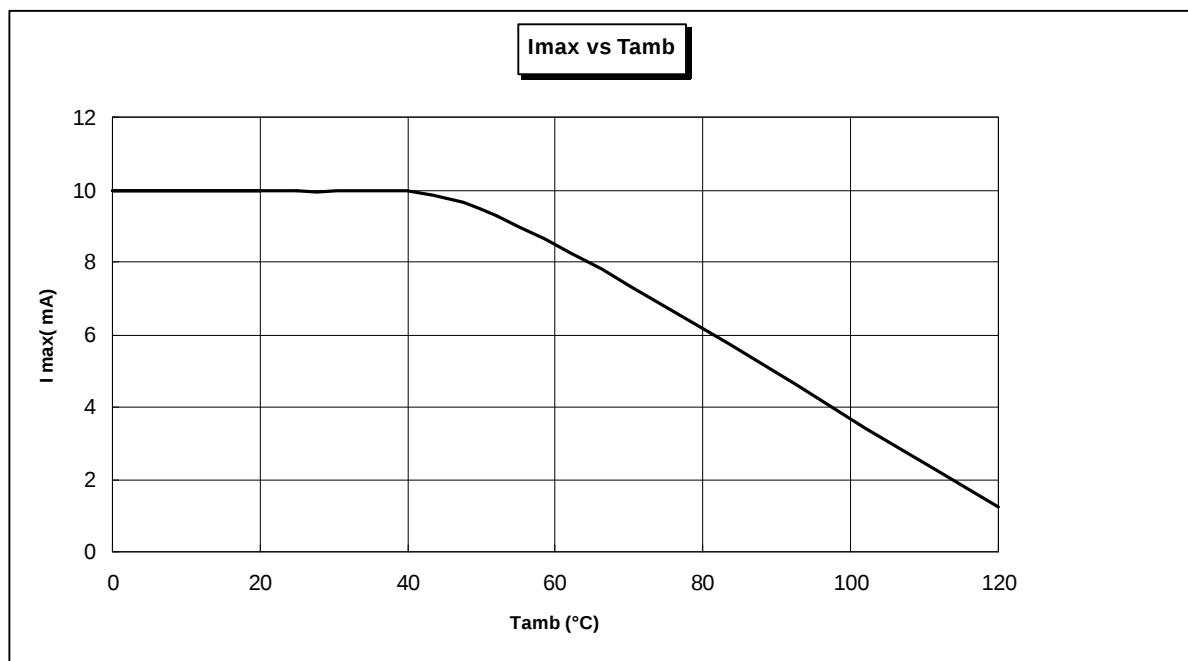
Equivalent Circuit

$$F_{co} = 1/(2\pi R_s [C_{par} + C_{jo}])$$



Device	Rs(Ω)	Cjo(fF)	Cpar(fF)	Fco(THz)
DBES103	5.2	4.6	5.4	2.8
DBES105	3.3	9.5	6.0	3.1
DBES107	2.3	14	6.2	3.4
DBES110	1.6	21	6.3	3.7

Iak (mA) vs Ta (°C) (for product DBES103/DBES105/DBES107/DBES110)



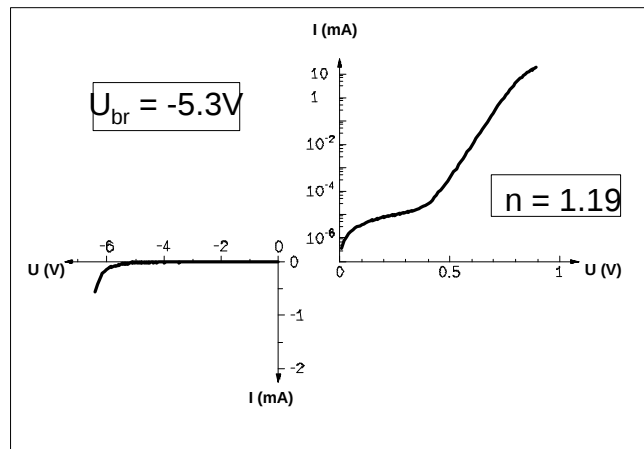
Absolute Maximum Ratings (1)

Tamb. = 25°C

Symbol	Parameter	Typ. values	Unit
Vak	Reverse anode-cathode voltage	-5	V
Iak	Forward anode-cathode current	10	mA

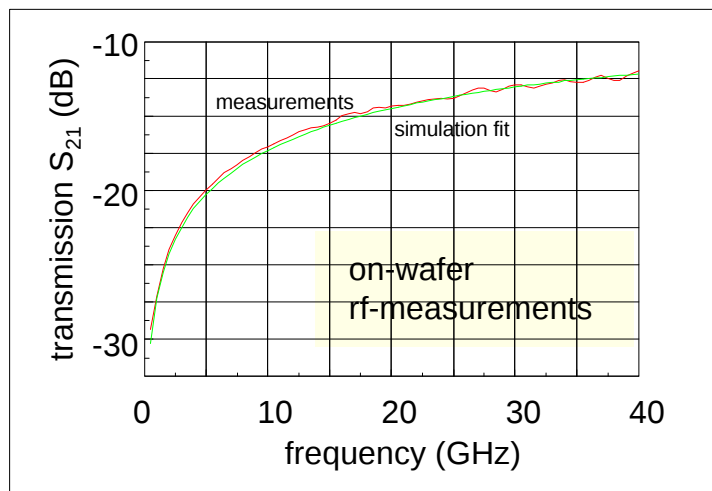
(1) Operation of this device above any one of these parameters may cause permanent damage.

Typical Static Measurement

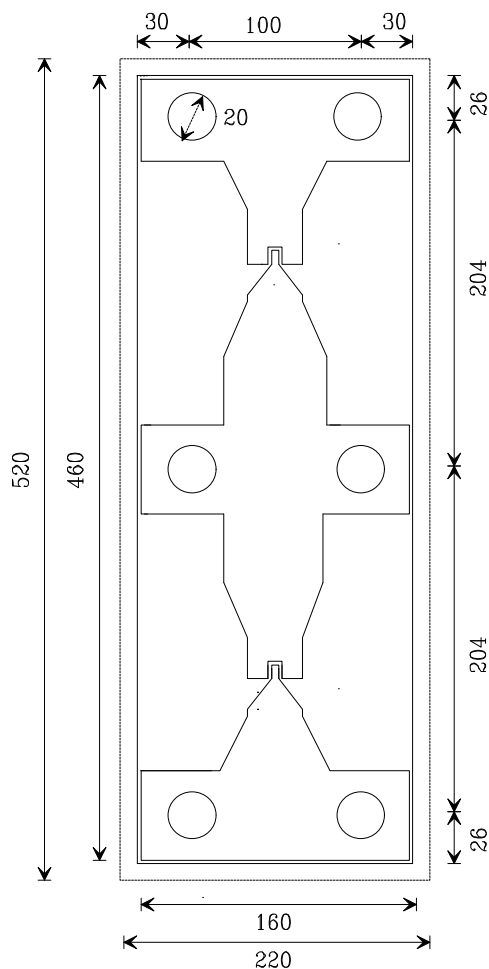


Typical On-Wafer Measurement

Bias Conditions $V_{ak} = 0V$



Mechanical data



Dimensions in μm

Dimensions: $220 \pm 20 \times 520 \pm 20 \mu\text{m}$

Thickness= $100\mu\text{m} \pm 20\mu\text{m}$

Ordering Information

Chip form : DBES103-99A/00
DBES105-99A/00
DBES107-99A/00
DBES110-99A/00

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