

## Flip-Chip Dual Diode

### GaAs Diode

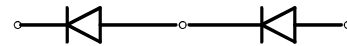
#### Description

The DBES105a is a dual Schottky diode based on a low cost 1 $\mu$ m stepper process including a bump technology. The parasitic inductances are reduced and result in a very high operating frequency.

This flip-chip dual diode has been designed for high performance mixer applications.

#### Main Features

- High cut-off frequencies : 3THz
- High breakdown voltage : < -5V  
@ 20 $\mu$ A
- Good ideality factor : 1.2
- Low parasitic inductances
- Low cost technology
- Dimensions : 0.53 x 0.23 x 0.1mm



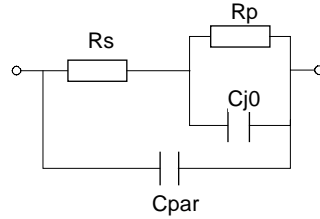
#### Main Characteristics

T<sub>amb.</sub> = 25°C

Symbol	Parameter	Typ	Unit
W <sub>u</sub>	Gate Width	5	$\mu$ m
F <sub>co</sub>	Cut-off frequency	3	THz
n	Ideality factor	1.2	
BV <sub>ak</sub>	Anode-cathode break-down voltage	< -5	V

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

## Equivalent Circuit



Rs(Ω)	Cjo(fF) (0V)	Cpar(fF)	Fco(THz)
4.4	9.5	5.8	2.4

$$Fco = 1/(2\pi Rs [Cpar + Cjo])$$

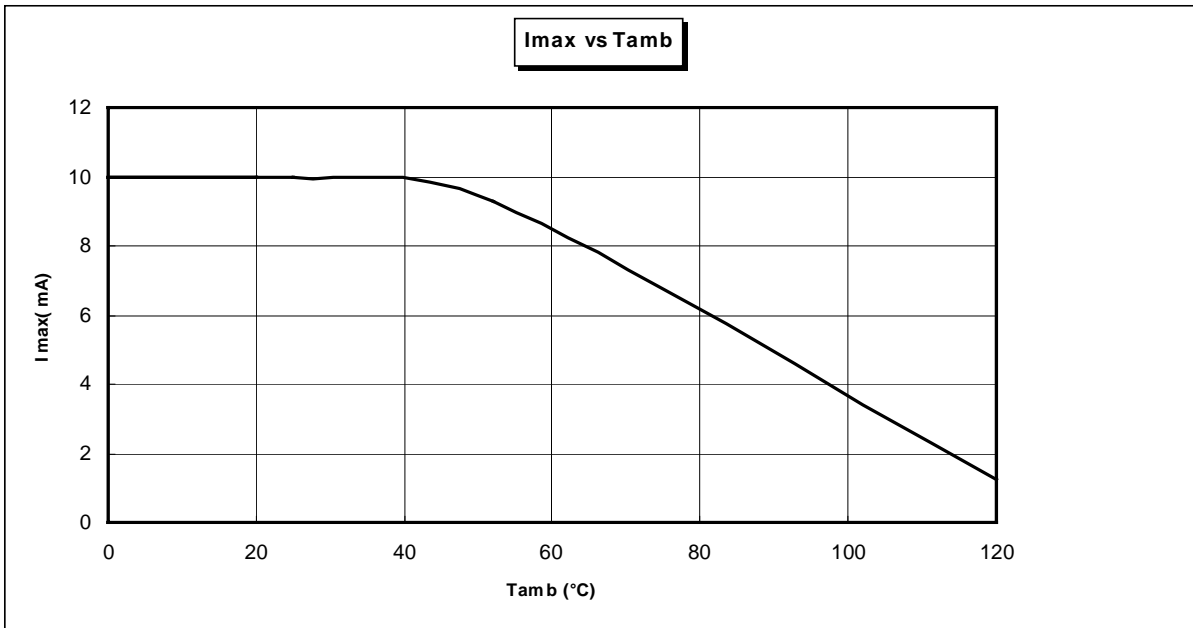
Rp can be neglected

## Absolute Maximum Ratings (1)

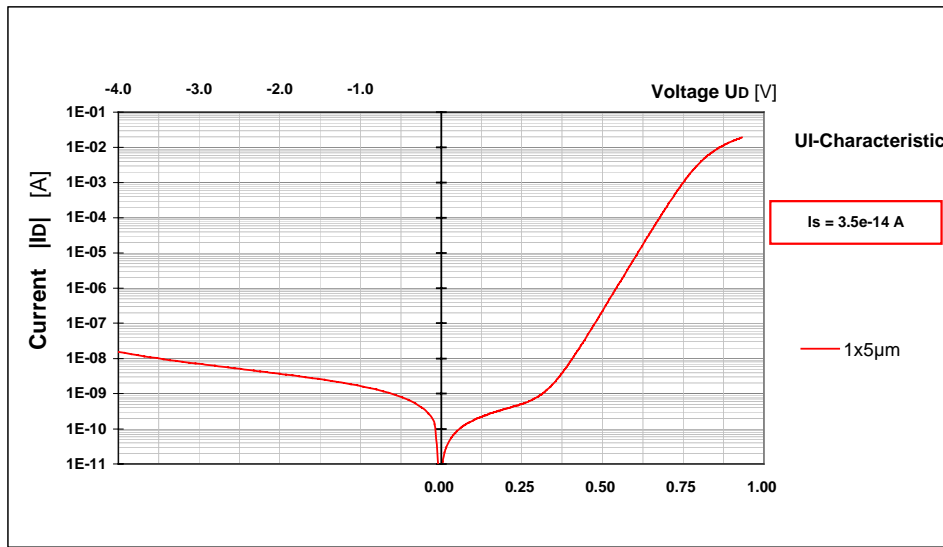
Tamb. = 25°C

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 anyone of these parameters may cause permanent damage.

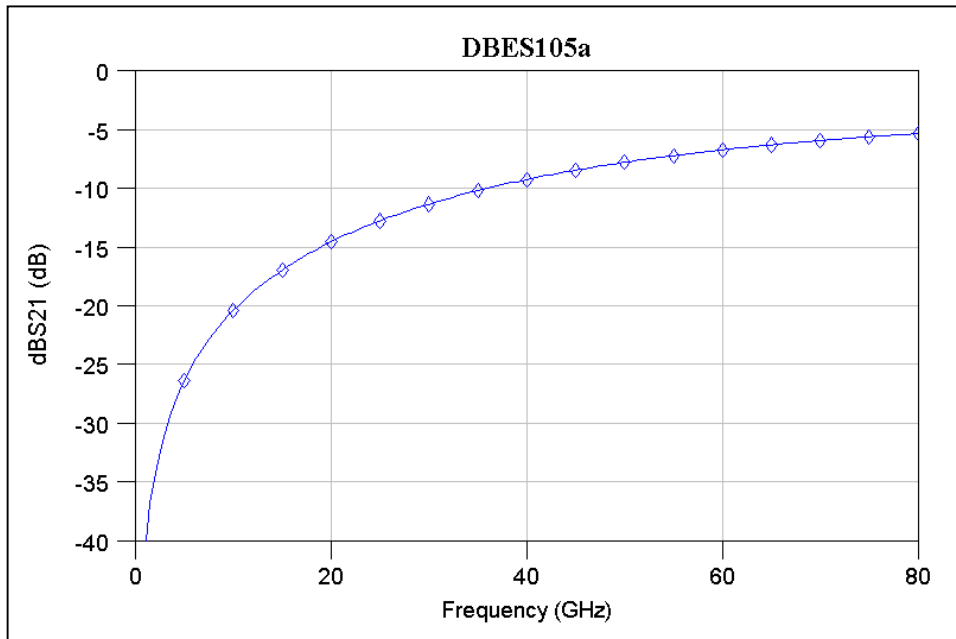


Typical DC Measurements

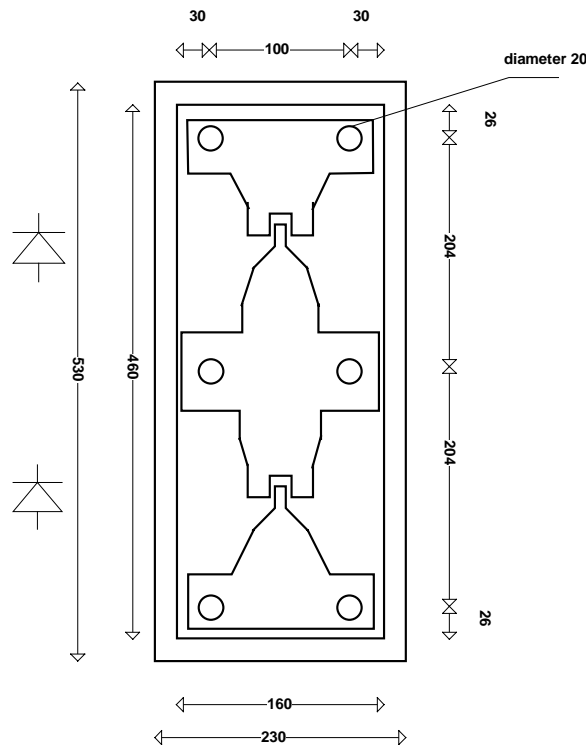


Typical On-Wafer Measurements

Bias Conditions  $V_{ak} = 0V$



## Mechanical data



Dimensions in  $\mu\text{m}$

Dimensions:  $230 \pm 35 \times 530 \pm 35 \mu\text{m}$   
 Thickness =  $100 \mu\text{m} \pm 10 \mu\text{m}$

## Ordering Information

Chip form : DBES105a-99F/00

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