

## Flip-Chip Dual Diode

### GaAs Diode

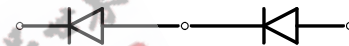
#### Description

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



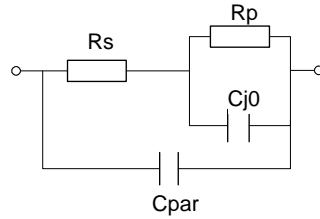
#### Main Characteristics

Tamb. = 25 $^{\circ}$ C

Symbol	Parameter	Typ	Unit
Wu	Gate Width	5	$\mu$ m
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!

## Equivalent Circuit



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

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

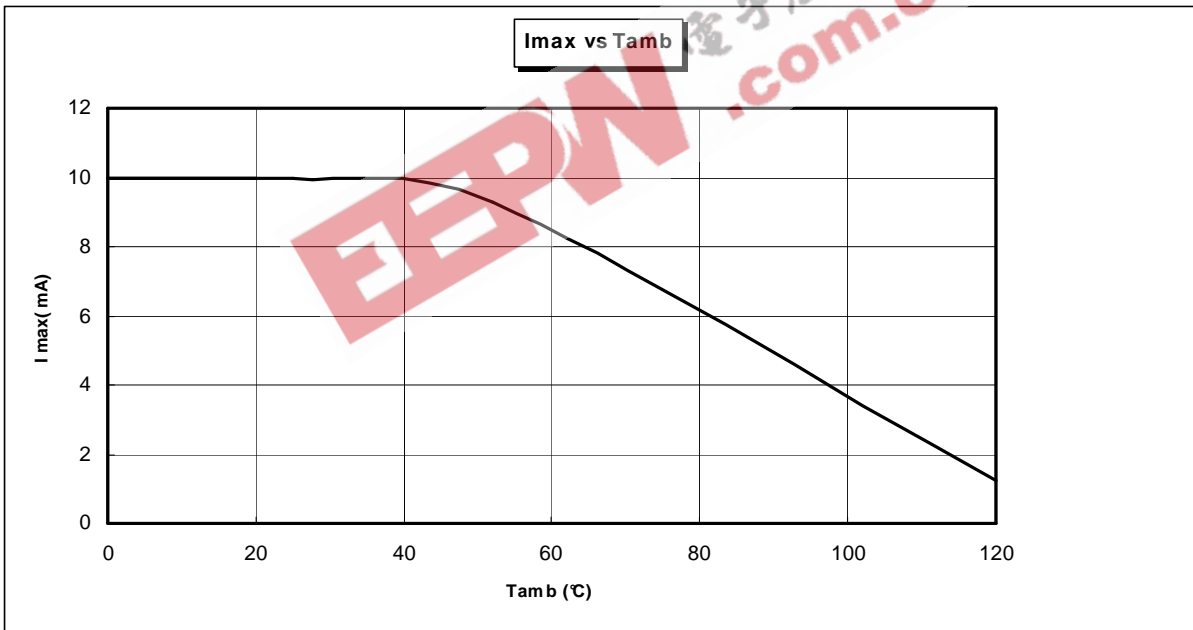
Rp can be neglected

## Absolute Maximum Ratings (1)

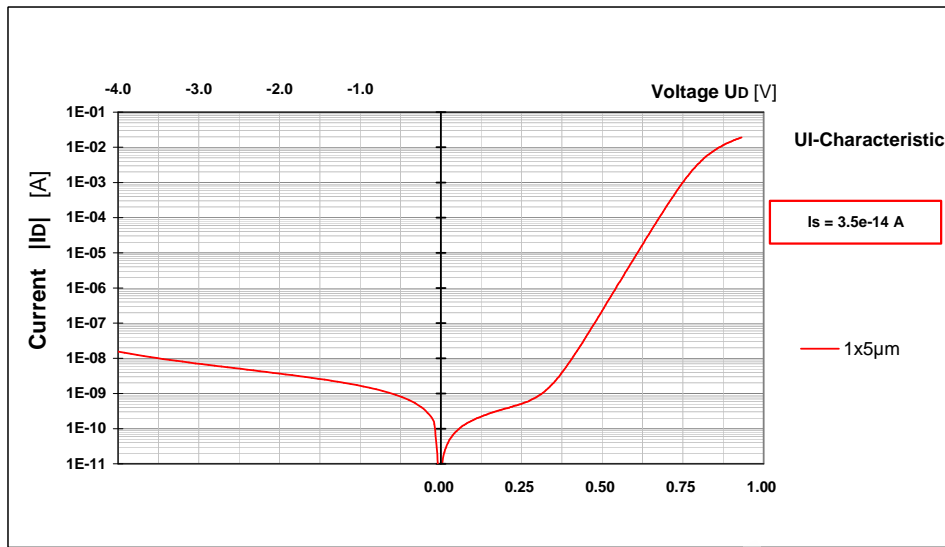
Tamb. = 25°C

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

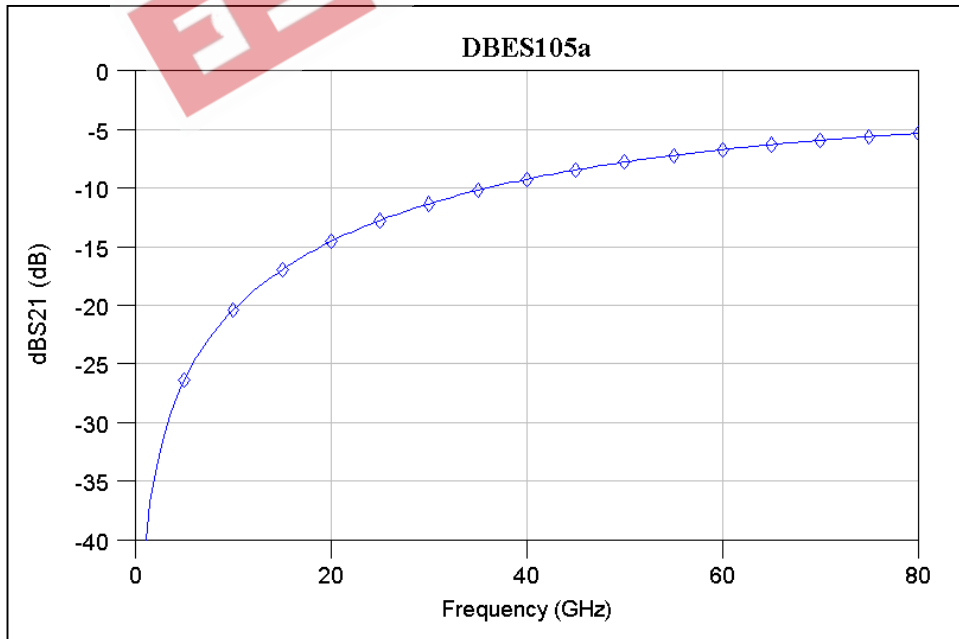
(1) Operation of this device above anyone of these parameters may cause permanent damage.



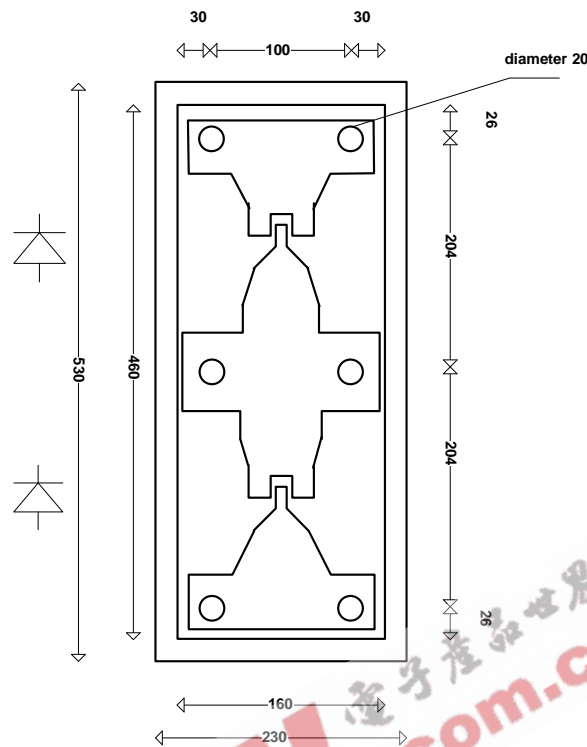
Typical DC Measurements



Typical On-Wafer Measurements  
Bias Conditions  $V_{ak} = 0V$



## Mechanical data



Dimensions in μm

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: DBES105a99F/00

Information furnished is believed to be accurate and reliable. However **United Monolithic Semiconductors S.A.S.** assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of **United Monolithic Semiconductors S.A.S.**. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. **United Monolithic Semiconductors S.A.S.** products are not authorised for use as critical components in life support devices or systems without express written approval from **United Monolithic Semiconductors S.A.S.**