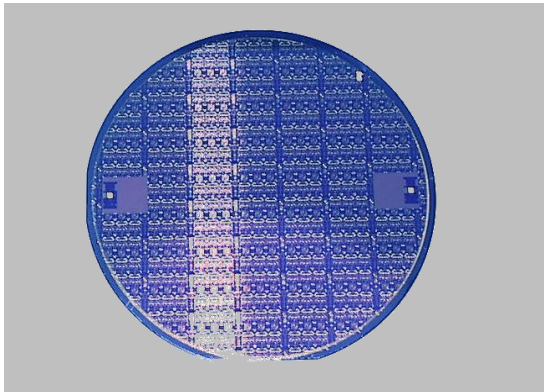


BES

Schottky Diode

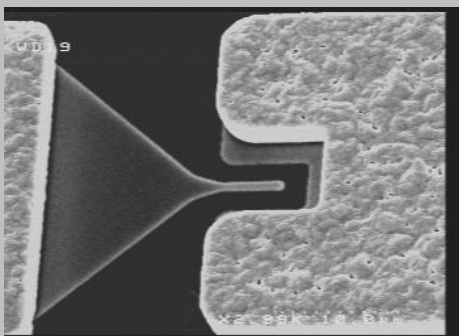
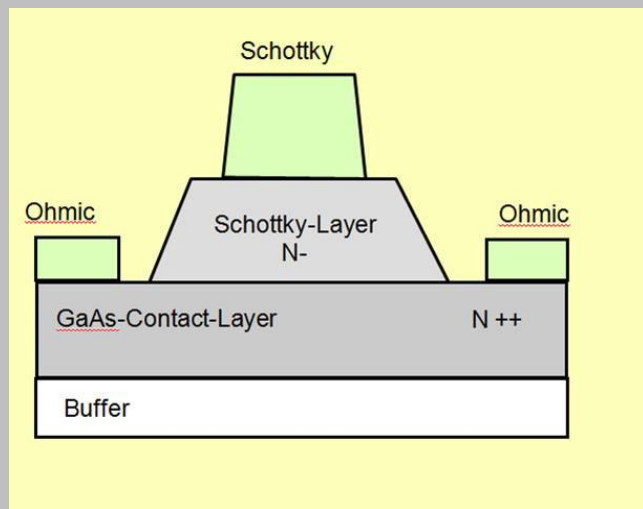


Description

The 1 μ m Schottky diode process is optimized for very high frequency mixers or switches up to several hundred of GHz. The process includes two metal interconnect layers, precision TaN resistors, high values TiWSi resistors, MIM capacitors, air-bridges and via-holes through the substrate.

Main Features

- 1.0 μ m Schottky diode
- Fully optical process
- Typical Ft: 3THz
- TaN and TiWSi resistors
- GaAs resistors
- M.I.M. capacitors
- Air bridges
- Via-holes
- Wafer thickness: 100 μ m
- Wafer diameter: 100mm
- Space evaluated process according to ESA (EPPL)



One 5 μ m finger BES Schottky diode

Design Kit Characteristics

- Available for ADS from Keysight, MwO from AWR and Nexxim from Ansoft
- Schematic entry with autolayout generation
- Scalable models for passive devices
- Scalable non-linear diode models
- Data for spread analysis

Electrical Characteristics

ELEMENT / Parameters	Min	Typ	Max	Units	Conditions
Diode (1x5μm)					
Ideality factor n	1.0	1.2	1.3	-	Vdiode = 0.55V
J0 diode	-	3e-6	1e-4	A/cm ²	
Series resistance Rs	3	5	8	Ω	Idiode = 15mA
Breakdown voltage V_bd	-10	-6.5	-5	V	Idiode = -20μA
Forward voltage V_on	-	0.65	0.8	V	Idiode = 20μA

Coplanar diode (1x5μm) equivalent circuit

Cut-off frequency		3		THz	
Intrinsic capacitance Cj		8		fF	
Parasitic capacitance Cp		6		fF	

TaN RESISTOR /

sheet resistance	26	30	34	Ω/square	
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MIM CAPACITOR /

density	290	330	370	pF/mm ²	@1MHz
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TiWSi RESISTOR /

sheet resistance	800	1000	1200	Ω/square	
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GaAs RESISTOR

Ohmic contact resistance	-	0.05	0.3	Ω.mm	
GaAs sheet resistance	7	9	11	Ω/square	

Ordering Information

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