

## Schottky Diode Type 5VA40-13

### Product Description

Type 5VAX family of structures are fabricated by ACST planar process on thinned s.i. GaAs substrate. Air-bridge interconnected mesas provide for a low parasitic capacitance and are fully passivated against harsh environment.

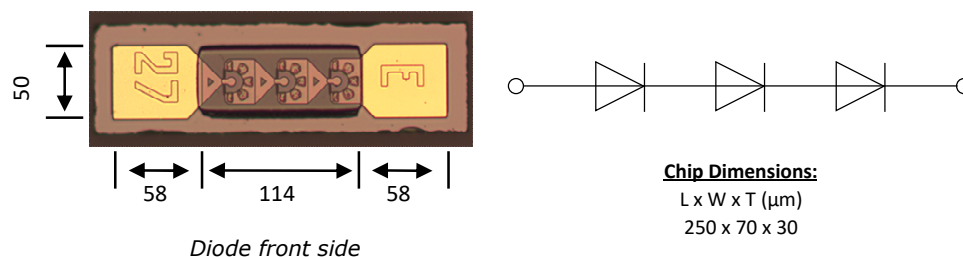


Fig. 1: Optical view of the product

The 5VAX structure represents three anodes connected in series, optimised for operation in varactor mode. The ACST Varactor Process provides nearly-ideal electrical characteristics, which allow for low losses (high efficiency) and high power-handling capability.

#### Application Areas

- High-Power frequency multipliers
- High-Power up-convertors/mixers
- High-Frequency/High-Power current rectifiers

#### Product features

- Extremely low reverse current
- High breakdown voltage (close to theoretical limit)
- Low shunt (pad-to-pad) capacitance
- Suitable for flip-chip mounting approach
- The structure is optimized for highly-reliable operation at MM-Waves

Tab. 1: Electrical parameters at room temperature

Parameter	Symbol	Specified Range		
		Minimum	Nom.	Maximum
Chip length [ $\mu\text{m}$ ]	L	240	250	270
Chip width [ $\mu\text{m}$ ]	W	60	70	80
Chip thickness [ $\mu\text{m}$ ]	T	20	30	40
Total capacitance [fF]	$C_{\text{tot}}$	13	14.5	16
Junction capacitance [fF]	$C_{j0}$	36	40	44
Series resistance per chip (3 anodes in series) [ $\Omega$ ]	$R_s$	10	14	21
Ideality factor per anode	$\eta$	1.08	1.12	1.18
Breakdown voltage per chip (3 anodes in series) [V]	$V_{\text{bd}}$	39	41.4	42
Forward voltage at a current level of $1\mu\text{A}$ per chip (3 anodes in series) [V]	$V_f@1\mu\text{A}$	1.90	1.94	1.98

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