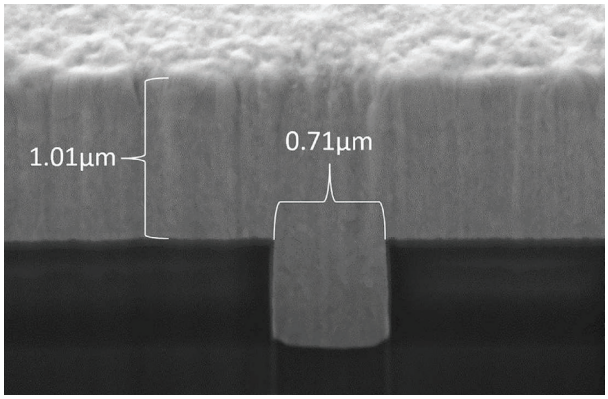
Technical Data Sheet
TDS106

Fine-Feature Gold Plating Using the Solstice GoldPro Reactor

The relatively slow diffusion rate of the gold complex ion makes high-speed plating in a gold sulfite bath sensitive to localized flow vectors . Thus, a sub-optimal electrolyte flow profile results in a non-flat plated feature shape. To overcome this issue, most immersion and fountain plating systems have to use very low plating rates

However, the proprietary Solstice® GoldPro™ reactor design is able to generate randomized fluid vectors at the diffusion layer of the wafer. This ensures that the diffusion layer is as thin as practical and also that fluid motion remains directionless.This results in a flat plated feature profile without sacrificing plating rate.



Example of fine-feature gold plating on the Solstice GoldPro reactor

Example Applications

- Bondpad fill
- VCSEL contact
- Advanced RF applications
- MicroLED high-resolution displays
- And more...

Features

- Randomized fluid vectoring
- Adjustable diffuser
- Dissolved oxygen control
- Dry-contact low-maintenance plating rotor
- Customized seal reach
- Continuously filtered chemistry loop
- Optional carbon filtration
- Levitronix pump with LeviFlow™

Benefits

- High plating rate and high uniformity
- Extremely uniform field profile
- Maximized bath life
- Seal reach aligns to existing integration
- Continuously cleaner chemistry
- Precise, consistent flow rate control

Fine-Feature Gold Plating Using the Solstice GoldPro Reactor

The proprietary design of the Solstice® GoldPro™ reactor is able to generate randomized fluid vectors at the diffusion layer of the wafer to optimize gold plating.

Technical Data

Wafer Sizes	75-200 mm	Configurable to non-standard sizes, e.g., 160 mm
Wafer Thickness	150µm to >6mm	
Wafer Materials	Silicon GaAs GaN on Si Sapphire Transparent substrates	
Flow Rate	20-60 lpm	Dependent on wafer size
Plating Rate	Up to 0.25µm/min	Dependent on chemistry and feature size
Within-Wafer Uniformity	<3% (range / 2*mean)	
Wafer-to-Wafer Uniformity	1% (mean-to-mean)	
Step Coverage	70-93%	Dependent on aspect ratio
Roughness	<2kÅ	

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