ClassOne TECHNOLOGY

Technical Data Sheet
TDS106

Fine-Feature Gold Fill Using the Solstice® GoldPro™ Reactor

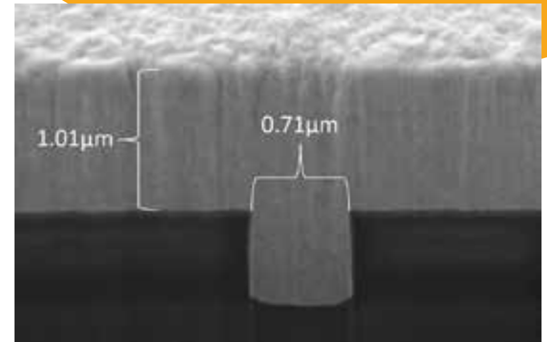
You will find high-speed plating in a gold sulfite bath is sensitive to localized flow vectors due to the relatively slow diffusion rate of gold complex ions. As a result, a sub-optimal electrolyte flow profile results in a non-flat plated feature shape. To overcome this issue, most immersion and fountain plating systems have to use very low plating rates.

Our proprietary Solstice® GoldPro™ reactor generates randomized fluid vectors at the diffusion layer of the wafer. This ensures that the diffusion layer is as thin as practical, and that fluid motion remains directionless. Ultimately, this results in a flat plated feature profile without sacrificing plating rate.

Applications

- Bond pad fill
- VCSEL contact
- Advanced RF applications
- microLED high-resolution displays
- And more...

The single-wafer processing Solstice Platform is available with 8, 4, 3 or 2 chambers in customizable configurations, depending on the applications you require.



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

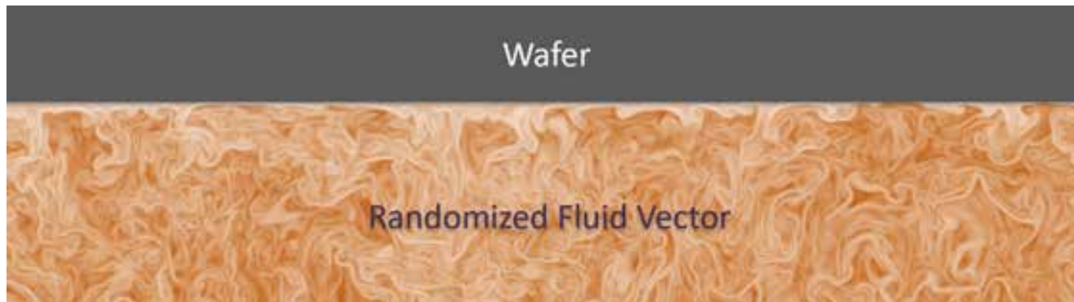
Features

- 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	75-200mm	Configurable to non-standard sizes, e.g., 160mm
Wafer Thickness	150µm to >6mm	
Wafer Materials	Silicon GaAs GaN on Si, GaN on Sapphire Sapphire Transparent substrates and more	
Flow Rate	20 - 60 lpm	Dependent on wafer size
Plating Rate	Up to 0.25µm/minute	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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