ClassOne TECHNOLOGY

Technical Data Sheet
TDS101

High-Step-Coverage, High-Rate Gold TWV Plating Using the Solstice® GoldPro™ Reactor

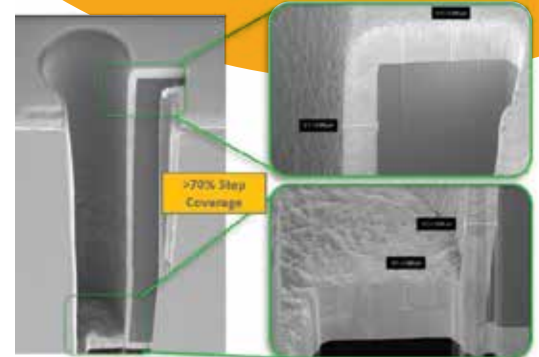
High-speed plating in a gold sulfite bath is sensitive to localized flow vectors due to the relatively slow diffusion rate of gold complex ions. As a result, you may find that sub-optimal electrolyte flow profile can lead to non-uniform deposition rates across the wafer. In immersion platers, and most fountain plater systems, a very low plating rate must be used to overcome this issue.

Our proprietary Solstice® GoldPro™ reactor design generates randomized fluid vectors at the diffusion layer of the wafer and uses the physics of a rotating disc electrode to provide you optimal conditions. This supports both high plating rates and high step coverage and ensures the diffusion layer is as thin as is practical. It also helps ensure that fluid motion remains directionless. The result is higher throughput without sacrificing coverage.

Example Applications

- Backside via liner
- TWV (through-wafer via) liner for electrical or thermal ground
- Backside contact
- Bond pad fill
- 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 a high-step-coverage gold through-wafer via (TWV) plating application

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

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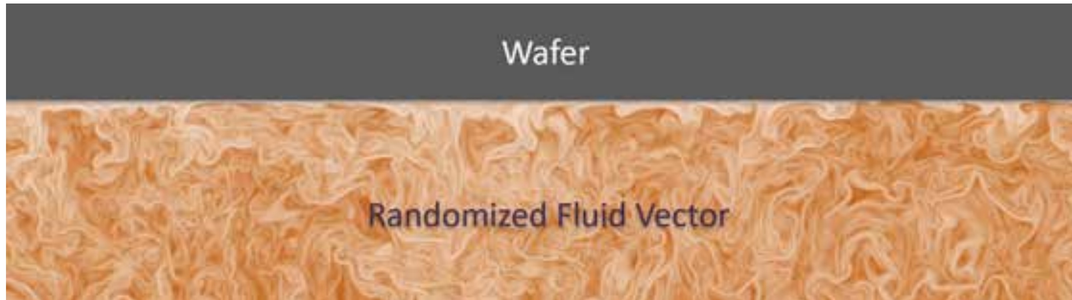

The proprietary design of the Solstice GoldPro reactor is able to generate randomized fluid vectors at the diffusion layer of the wafer to optimize gold plating.

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	10-60 lpm	Dependent on wafer size
Plating Rate	Up to 150µm/minute	Dependent on chemistry
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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