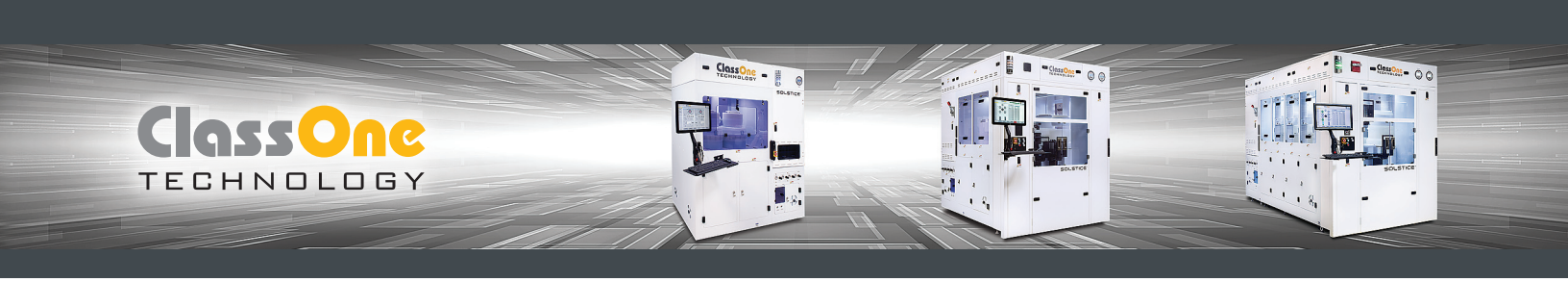
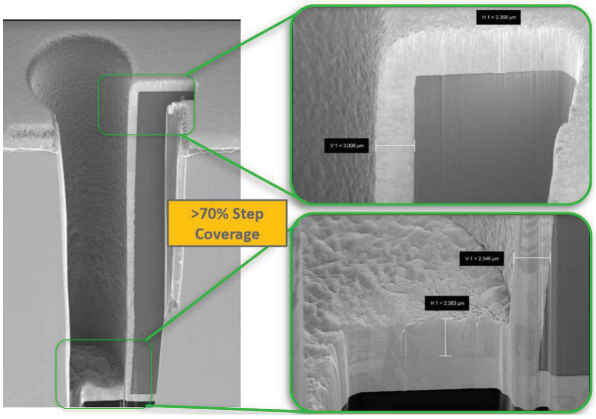


Technical Data Sheet
TDS101

High-Step-Coverage, High-Rate Gold TWV 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 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.

The 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 optimal conditions supporting both high plating rates and high step coverage. This ensures not only that the diffusion layer is as thin as practical, but that fluid motion remains directionless. The result is a higher throughput without sacrificing coverage.



Example of a high-step-coverage gold Through Wafer Via plating application

Example Applications

- Backside via liner
- TWV (Through-Wafer Via) liner for electrical or thermal ground
- Backside contact
- Bondpad fill – 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

High-Step-Coverage, High-Rate Gold TWV 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, GaN on Sapphire Sapphire Transparent substrates	
Flow Rate	10-60 lpm	Dependent on wafer size
Plating Rate	Up to 150 nm/min	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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