

# ABLEPRINT

# Void Free & Cost Saving Solution Provider

## **VFS vs VTS**



# **VFS Applications and Brief Spec.**

- The world leader of De-Void Solution for process improvement and cost reduction
- Global sales performance of Semiconductor, PCB, MEMS and Optoelectronics
- Mass production de-void experiment of DAF, DAP, UF, FOW, NCP, NCF...etc.
- APT unique non-coupling design can guaranty longer motor life time
- Broaden process window and strengthen reliability through assistance of void free solution
- SECS/GEM interface for integration with factory production monitoring and logging systems





Power	220V/380V 3P 50/60 Hz			
Temperature Range	RT~200C Max. 200°C			
Temp. Uniformity	$\pm$ 3°C @ 5 ~ 8 kg/cm <sup>2</sup> (without loading)			
Temp. Controller	PID Auto temp. controller. + SCR			
Pressure	Max. 8 kg/cm <sup>2</sup>			
Pressure Uniformity	±0.1kg/cm²			
Operation Interface	PLC+PC Base			
Recorder	Digital Recorder			
Software Support	SECS/GEM or PLC Link			
Chamber Certification	Taiwan / China / USA / Japan / Korea / EU			
quipment Certification	Semi-S2 / CE / UL			
Cofety Design	Multiple protective sensors for pressure &			
Safety Design	temperature			
PM & Calibration	Temperature / Pressure Reading Ports			

Best machine



# **VTS Applications and Brief Spec.**

- The world leader of De-Void Solution for process improvement and cost reduction
- Global sales performance of Semiconductor, PCB, MEMS and Optoelectronics
- Enhance higher UPH in TCCUF & FCCUF with void free guarantee
- Dedicate to support fine pitch & gap chip demand of 3DIC and 2.5D package structure
- Better controllability in stress concern(low-k wafer) and bleeding & creeping control
- Fast temperature ramp up speed with APT unique design
- Fast temperature cooling down with APT unique design
- Build in De-outgassing module with APT unique design





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Safety Design	Multiple protective sensors for pressure & temperature		
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pecial De-void Function	Yes		
De-outgas Module	Yes		
2 Auto Control Function	Yes		
Fast Heating & Cooling	Yes		



### **Temperature Controllability**

### VTS provides wide range T. ramp-up and cool-down setting



# **Huge Void Elimination Capability**





		Material Applications	VFS Void Free System	VTS Void Terminrator System	
		FOW	0	0	
	<b>"Huge Void"</b> Elimination Capability	DAP	0	0	alution
		DAF	0	0	ionalition.
		TIM	0	0	
		CUF	Δ	000	
		NCP(slow cure)	0	0	
		NCF(slow cure)	X	0	
		Polymide	— X —	Х	
		Soldering	X	Х	DT
or	fidential		5	Vei	d Free Solution Provider

# **VFS Profile Character**

• VFS Photo :

• Curing profile :









## **SAT Result and Finding**



#### **Engineering comment:**

- **1.** Serious void issue on normal oven condition.
- 2. VTS is powerful than VFS to terminate the big and central void.



