GWC
Glass Wet Cu Plating

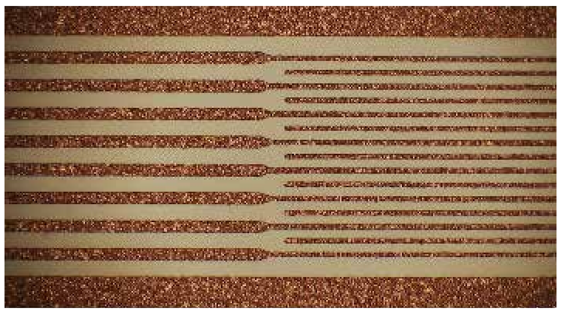
Fine patterning and Plating on TGV by GWC process

1 Product Application

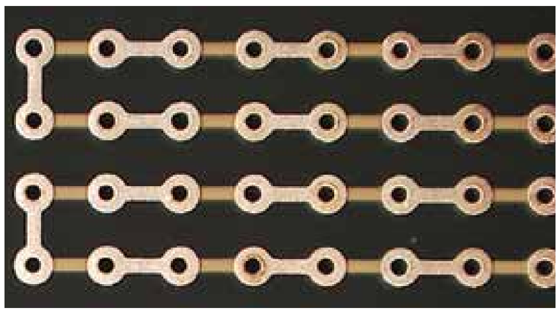
Glass substrate: Glass core interposer, 5G / 6G Antenna, Photo / Image Sensor, Touch Sensor, Photo-Electronics Convergence device, and etc.

2 Fine patterning

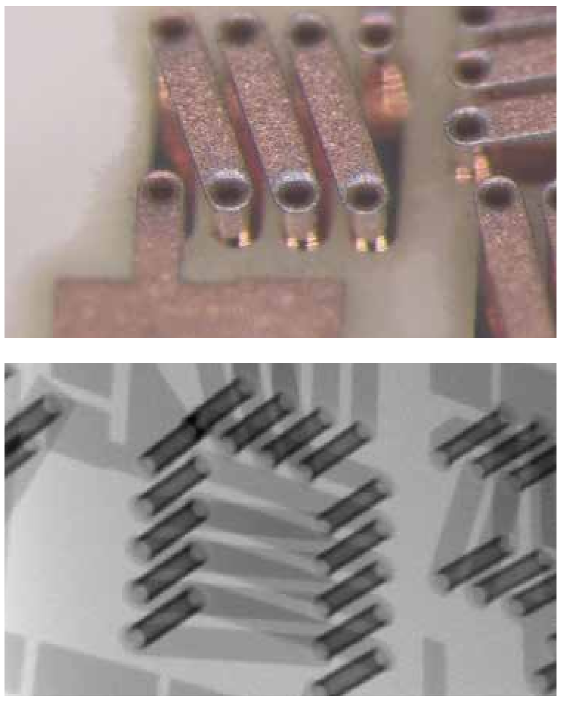
L/S = 4 µm/ 6 µm



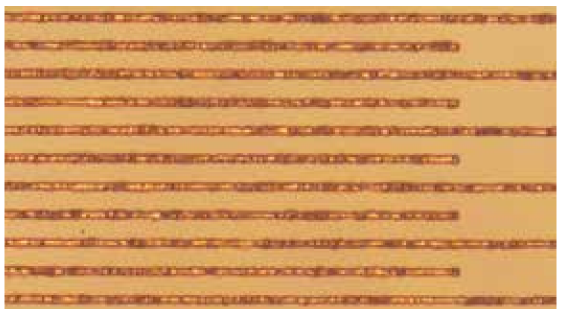
Daisy chain



3 Dimension coil



L/S = 2 µm / 4 µm

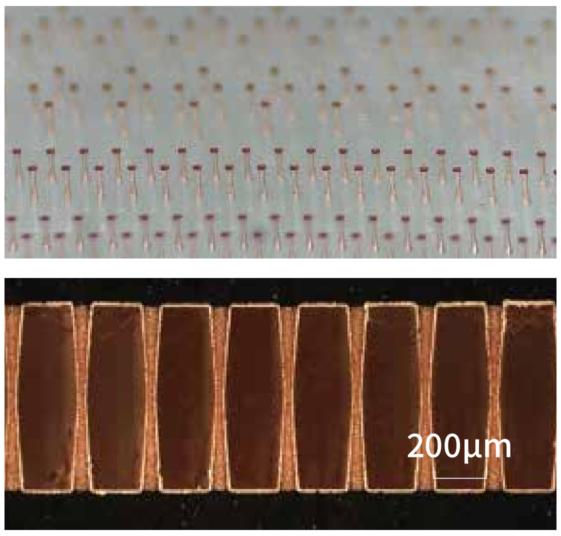


L/S = 50 µm / 50 µm

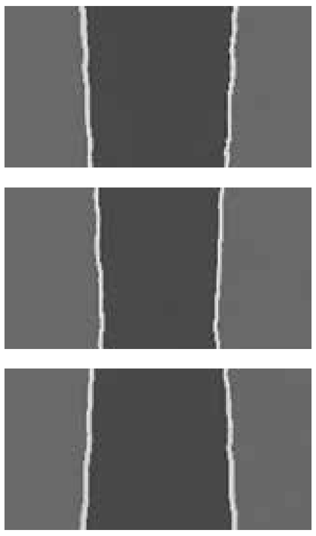
Possible to use both Subtractive process and Semi-additive process

3 Plating on Through Glass Via

Cross section image



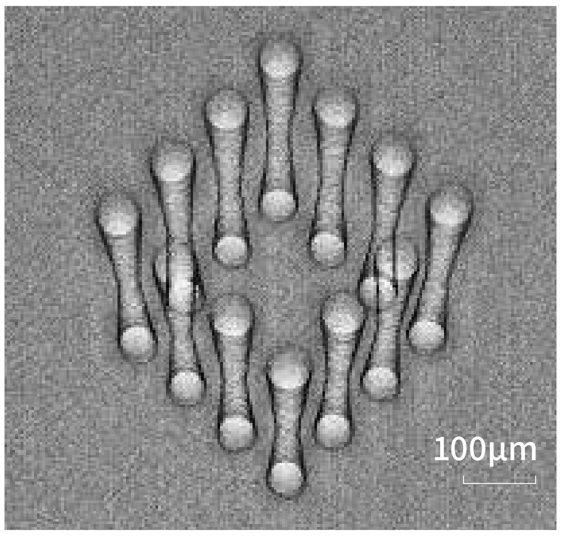
TGV : ϕ60 µm, A.R. 8



TGV: Φ130 µm, A.R. 6
(Observed by iST)

TGV
ϕ22 µm, A.R. 22

X-CT



TGV : ϕ60 µm, A.R. 11

Possible to Cu plating on High aspect TGV at A.R. 20

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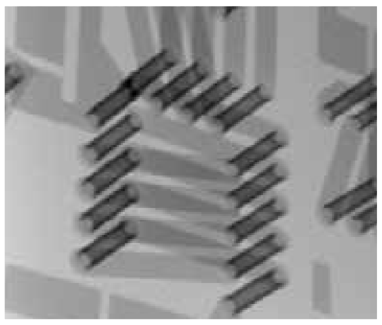
Glass substrate by GWC process

GWC
Glass Wet Cu Plating

Glass
Wet
Cu plating



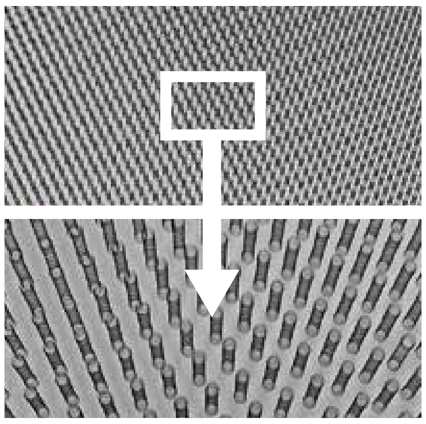
Features

All Wet Process	without Sputtering, Sol-Gel process and Courting
Direct Cu Plating on Glass	without Intermediate Layer （Ti, Cr etc.）
Smooth and Transparency	without Glass Surface Etching
Stable Adhesion Strength	Peel strength about 0.4 ~ 0.8 kN/m
Excellent Cu film Uniformity inside TGV	

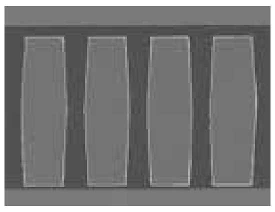
Peeling test Adhesion strength

Non Alkaline	0.8 kN/m
Borosilicate	0.5 kN/m
Quartz	0.4 kN/m

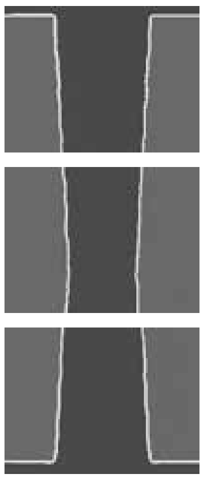
Cu uniformity inside TGV



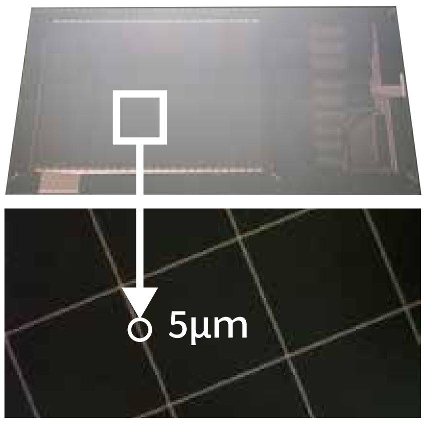
Φ60 µm TGV by X-CT



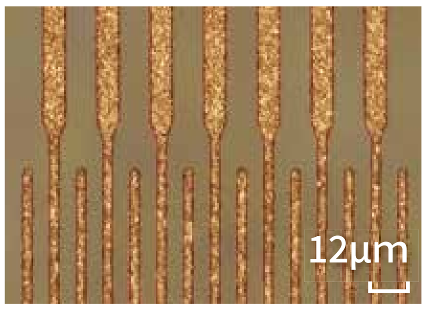
Φ130 µm TGV
Cross section
(Observed by iST)



Fine line formation



Touch sensor (L/S= 5µm/100µm)



L/S = 3.5/4.5µm

Mass product accommodate size

Glass Type	Soda, Non-Alkaline Borosilicate, Quartz	
Shape, Size	Wafer	Φ 4, 6, 8, 12 inch
	Panel	≦515 ×510 mm (available in the near future)
TGV	Size	≧ Φ 5µm (available in the near future)
	A.R.	≦20

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