

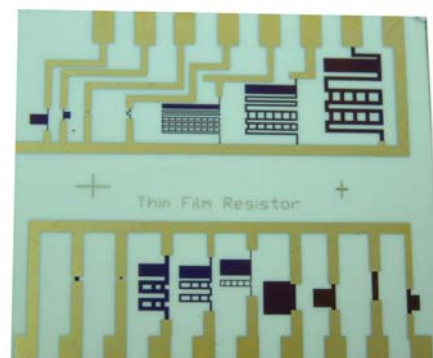
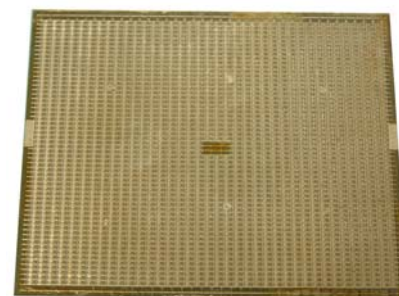
THIN FILM TECHNOLOGY for CERAMIC SUBSTRATES

VIKING have refined on the thin film technology to provide customer special requirement on ceramic substrates. We bring a standard specification to thin film technology products to meet every individual requirement for the customers. Custom metalized and patterned substrates are offered to address a broad spectrum of deposition and hybrid circuit fabrication requirements

- Ceramic Substrates** ■ Al₂O₃ substrate
 ■ SIZES : Standard 49.5*60mm(max.85*85 mm);5" & 6" wafer form

Thin-Film Process (standard ; other requirement is acceptable)

■ Sputter material	Thickness(um)	Rs(ohm/sq.)
Ta	0.1 ~ 0.6	-
TaN	-	20 ~ 50
TaAl	-	20 ~ 50
NiCr	-	1~500
NiCrSi	-	100~1k
Ta ₂ O ₅	0.05 ~ 0.25	-
Al Alloy	0.1 ~ 1.0	-
Ti	0.05 ~ 0.3	-
TiW	0.05 ~ 0.3	-
Au	0.1 ~1.0	-
Cu	0.1 ~ 0.5	-



Lithography process

■ Equipment	Resolution
Aligner	Less than 3.0 μm

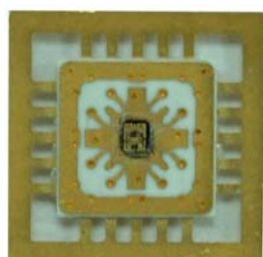
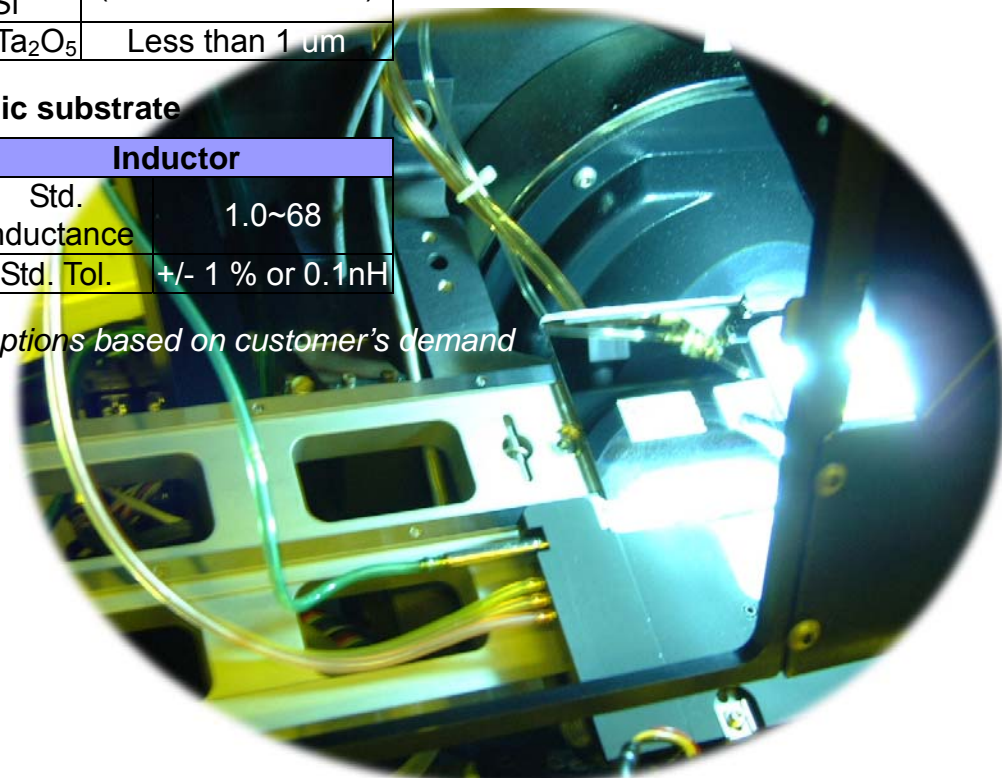
Etching Process

■ Method	material	CD loss (um)
Wet Etch	Ti、TiW、Cu、Au、 TaN、Ta、TaAl NiCr、NiCrSi	Less than 1.5 um (Au less than 6 um)
Dry Etch	Ta、TaN、TaAl、Ta ₂ O ₅	Less than 1 um

Capability of R、L on ceramic substrate

Resistor		Inductor	
Resistance	10~1M Ω	Std.	1.0~68
Std. TCR	+/- 25 ppm/°C	Inductance	
Std. Tol.	+/- 0.1 %	Std. Tol.	+/- 1 % or 0.1nH

Viking is capable of supplying options based on customer's demand



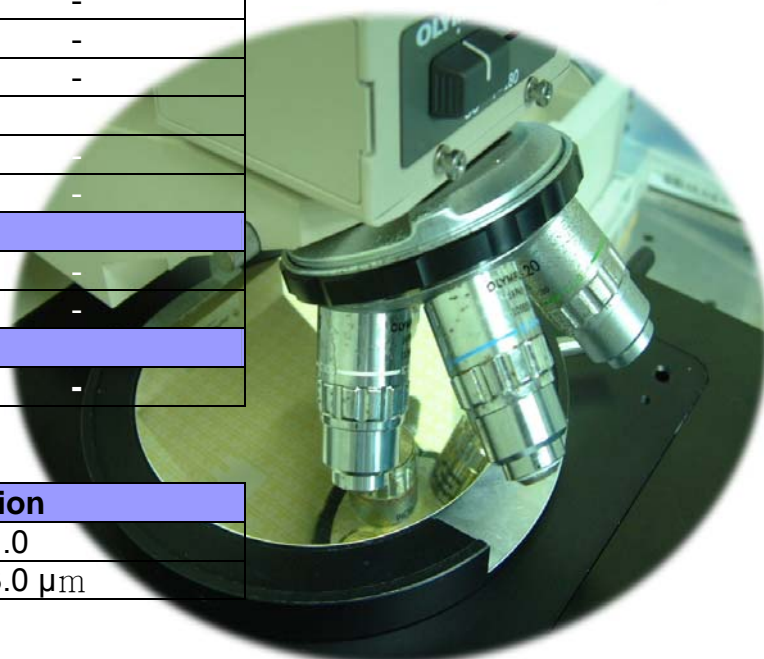
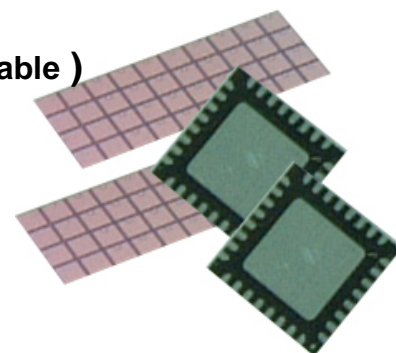
THIN FILM TECHNOLOGY for SILICON & GLASS WAFER

VIKING have refined on the thin film technology to provide customer special requirement on silicon & Glass substrates. We bring a standard specification to thin film technology products to meet every individual requirement for the customers. Custom metalized and patterned substrates are offered to address a broad spectrum of deposition and hybrid circuit fabrication requirements

Silicon & Glass Wafer ■ 5" and 6" wafer

Thin-Film Process (standard ; other requirement is acceptable)

■ Sputter material	Thickness(um)	Rs(ohm/sq.)
Ta	0.1 ~ 0.6	-
TaN	-	20 ~ 50
TaAl	-	20 ~ 50
NiCr	-	1~500
NiCrSi	-	100~1k
Ta ₂ O ₅	0.05 ~ 0.25	-
Al Alloy	0.1 ~ 1.0	-
Ti	0.05 ~ 0.3	-
TiW	0.05 ~ 0.3	-
Au	0.1 ~1.0	-
Cu	0.1 ~ 0.5	-
■ PECVD material		
SiNx	0.3 ~ 1.0	-
SiCx	0.15 ~ 0.5	-
■ Furnace		
SiO ₂	1.0 ~ 1.7	-

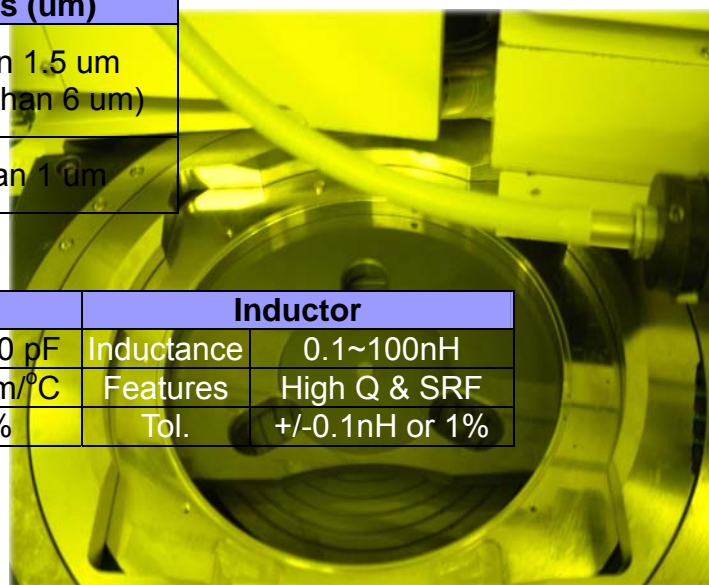


Lithography process

■ Equipment	Resolution
Stepper	Less than 1.0
Aligner	Less than 3.0 μm

Etching Process

■ Method	material	CD loss (um)
Wet Etch	SiO ₂ 、Ti、TiW、Cu、Au、TaN、Ta、TaAl NiCr、NiCrSi	Less than 1.5 um (Au less than 6 um)
Dry Etch	Ta、TaN、TaAl、Ta ₂ O ₅ 、SiNx、SiCx、	Less than 1 um



Capability of R、C、L on silicon wafer

Resistor		Capacitor		Inductor	
Resistance	10~1M Ω	Capacitance	3.75~2000 pF	Inductance	0.1~100nH
TCR	+/-25ppm/°C	TCC	+/-200ppm/°C	Features	High Q & SRF
Tol.	+/- 0.5 %	Tol.	+/- 3 %	Tol.	+/-0.1nH or 1%

Customized Product is Available.

