

# Wafer Product List (150mm and 200mm)

Wafer Type	Mask	Features
Dielectric	SKW 1-1	150mm
	SKW 1	200mm
	SKW 7-2	200mm

Wafer Type	Mask	Features
STI	SKW 3-2	HDP CVD oxide film
	SKW 3-3	HDP CVD oxide film
	SKW 3-5	HDP CVD oxide film/ defectivity
	SKW 3-6	HDP CVD oxide film planarity & defectivity evaluation
	SKW 3-9 <b>new</b>	HDP CVD oxide film planarity

Wafer Type	Mask	Features
W	SKW 5-2	
	SKW 5-3 (0.18)	Minimum feature size: 0.18um Single damascene structure
	SKW 5-3 (0.13) <b>new</b>	Minimum feature size: 0.13um Single damascene structure
	SKW 5-ICP-K <b>new</b>	Interconnect pattern, 90nm technology node
	SKW5-J085	Plug patterned, 90nm technology node

Wafer Type	Mask	Features
Poly-Si	SKW 3AS	200 mm amorphous Si
	SKW 3DPS	200 mm doped poly
	SKW 3PS	200 mm undoped poly
	SKW 3PN	200 mm undoped poly over nitride
	SKW 3PS AU <b>new</b>	200 mm undoped poly
	SKW 3PS AI <b>new</b>	200 mm in-situ P-doped poly
	SKW 3PN AU <b>new</b>	200 mm undoped poly over nitride
	SKW 3PN AI <b>new</b>	200 mm in-situ P-doped poly over SiN

Wafer Type	Mask	Features
<b>Cu</b>	SKW 6-3MC TEOS (0.18)	
	SKW 6-3 ML BD (0.18)	
	SKW 6-3 ML TEOS (0.18)	
	MIT 854 Cu/TEOS (0.18) <b>new</b>	
	MIT 854 Cu/BD (0.18) <b>new</b>	
	MIT 854 Cu/BD/TEOS (0.18) <b>new</b>	
	SKW 6-3 BD (0.13) <b>new</b>	90nm technology node
	SKW 6-3 BD (0.13-0.18) <b>new</b>	
	SKW 6-3 TEOS (0.13) <b>new</b>	90nm technology node
	SKW 6-3 TEOS (0.13-0.18) <b>new</b>	
	SKW 6-3 BD/SiON(0.13) <b>new</b>	90nm technology node
	SKW 6-3 BD/SiON (0.13-0.18) <b>new</b>	90nm technology node
	SKW 6-5 BD <b>new</b>	90nm technology node
	SKW 6-5 TEOS <b>new</b>	90nm technology node
	SKW 6-5 BD/SiON <b>new</b>	90nm technology node
	SKW6-6 TEOS <b>new</b>	90 nm technology node
	SKW6-6 Cu/BD (2600Å BD) <b>new</b>	90 nm technology node
	SKW6-6 Cu/BD (3300Å BD) <b>new</b>	90 nm technology node
	SKW6-6 Cu/BD/TEOS <b>new</b>	90 nm technology node
	SKW6-6 Cu/BD/SiON <b>new</b>	90 nm technology node
	SKW6-PT00210TSV <b>new</b>	
	SKW6-PT00220TSV <b>new</b>	
	SKW6-TSV1 <b>new</b>	
	SKW6-TSV2 <b>new</b>	
	SKW6-TSV3 <b>new</b>	

Wafer Type	Mask	Features
<b>GST</b>	SKW80-GST <b>new</b>	
	SKW8N-GST <b>new</b>	

# Wafer Product List (300mm)

Wafer Type	Mask	Features
<b>ILD</b>	SKW 7-2	PETEOS oxide film

Wafer Type	Mask	Features
<b>STI</b>	SKW 3-2	HDP CVD oxide film
	SKW 3-2R HDP	HDP CVD oxide film
	SKW 3-2R HARP	HARP CVD oxide film
	SEMATECH 764	HDP CVD oxide film
	SKW 3-5	HDP CVD oxide film/ defectivity
	SKW 3-6	HDP CVD oxide film planarity & defectivity evaluation
	SKW 3-9 (HDP) <b>new</b>	HDP CVD oxide film planarity & defectivity evaluation
	SKW 3-9 (HARP) <b>new</b>	HARP film planarity & defectivity evaluation

Wafer Type	Mask	Features
<b>Poly Si</b>	SKW 3PS AU <b>new</b>	300 mm undoped poly
	SKW 3PS AI <b>new</b>	300 mm in-situ P-doped poly
	SKW 3PN AU <b>new</b>	300 mm undoped poly over nitride
	SKW 3PN AI <b>new</b>	300 mm in-situ P-doped poly over SiN

Wafer Type	Mask	Features
<b>W</b>	SKW 5-3.13 <b>new</b>	Interconnect pattern, 90nm technology node
	SKW 5-ATR-35I <b>new</b>	Interconnect pattern, 65nm technology node
	SKW 5-ATR-35P <b>new</b>	Plug pattern 65nm technology node

Wafer Type	Mask	Features
<b>Cu</b>	SKW 6-3.18 Cu/TEOS	Minimum feature: 0.18um
	SKW 6-3.18 Cu/CORAL	Minimum feature: 0.18um
	SKW 6-3.18 Cu/CORAL/TEOS	Minimum feature: 0.18um
	SKW 6-3.18 Cu/BDI	Minimum feature: 0.18um
	SKW 6-3.18 Cu/BDI/TEOS	Minimum feature: 0.18um
	SKW 6-3.13 Cu/TEOS <b>new</b>	Minimum feature: 0.13um 90nm technology node
	SKW 6-3.13 Cu/CORAL <b>new</b>	Minimum feature: 0.13um 90nm technology node
	SKW 6-3.13 Cu/CORAL/TEOS <b>new</b>	Minimum feature: 0.13um 90nm technology node
	SKW 6-3.13 Cu/BDI <b>new</b>	Minimum feature: 0.13um 90nm technology node
	SKW 6-3.13 Cu/BDI/SiON <b>new</b>	Minimum feature: 0.13um 90nm technology node
	SKW 6-3.13 Cu/BDI/TEOS <b>new</b>	Minimum feature: 0.13um 90nm technology node
	MIT 754 Cu/TEOS <b>new</b>	Minimum feature: 0.18 um
	MIT 754 Cu/BDI <b>new</b>	Minimum feature: 0.18 um
	MIT 754 Cu/BDI/TEOS <b>new</b>	Minimum feature: 0.18 um
	ATR-35 Cu/TEOS <b>new</b>	Minimum feature: 0.11um 90nm technology node
	ATR-35 Cu/CORAL <b>new</b>	Minimum feature: 0.11um 90nm technology node
	ATR-35 Cu/CORAL/TEOS <b>new</b>	Minimum feature: 0.11um 90nm technology node
	ATR-35 Cu/BDI <b>new</b>	Minimum feature: 0.11um 90nm technology node
	ATR-35 Cu/BDI/TEOS <b>new</b>	Minimum feature: 0.11um 90nm technology node
	ATR-40 Cu/TEOS <b>new</b>	Minimum feature: 0.09um 65nm technology node
	ATR-40 Cu/CORAL <b>new</b>	Minimum feature: 0.09um 65nm technology node
	ATR-40 Cu/CORAL/TEOS <b>new</b>	Minimum feature: 0.09um 65nm technology node
	ATR-40 Cu/BDI <b>new</b>	Minimum feature: 0.09um 65nm technology node
	ATR-40 Cu/BDI/TEOS <b>new</b>	Minimum feature: 0.09um 65nm technology node
	ATR-40 Cu/BDIIX <b>new</b>	Minimum feature: 0.09um 65nm technology node
	ATR-40 Cu/BDIIX/TEOS <b>new</b>	Minimum feature: 0.09um 65nm technology node
	SKW6-PT00210TSV <b>new</b>	
	SKW6-TSV3-2 <b>new</b>	
	SKW6-TSV3-NT <b>new</b>	

\* k-value of BDI is 2.9 while that for BDIIX is ~2.4

# 200mm Blanket Film Wafers

Blanket Wafer Type
Thermal Oxide Blanket Film Wafer (Si/1 $\mu$ m SiO <sub>2</sub> )
TEOS Oxide Blanket Film Wafer #1 (Si/1.5 $\mu$ m TEOS)
TEOS Oxide Blanket Film Wafer #2 (Si/3-4 $\mu$ m TEOS)
TEOS Blanket Film Wafer With Particle Spec (Si/1 $\mu$ m TEOS, <200@0.2 $\mu$ m)
HDP Blanket Film Wafer (Si/1 $\mu$ m HDP)
Nitride Blanket Film Wafer (Si/2,000A SiN)
Nitride Blanket Film Wafer (Si/1,000A SiO <sub>2</sub> /3,000A SiN)
Nitride Blanket Film Wafer (Si/5,000A SiN)
Nitride Blanket Film Wafer (Si/1,000A P-SiO <sub>2</sub> /5,000A SiN)
W Blanket Film Wafer (Si/5,000A SiO <sub>2</sub> /150A IMP Ti/100A TiN/8,000A CVD W)
Ti Blanket Film Wafer (Si/5,000A Oxide/2,000A Ti)
TiN Blanket Film Wafer (Si/5,000A Oxide/2,000A TiN)
Ta Blanket Film Wafer (Si/5,000A Oxide/2,000A Ta)
TaN Blanket Film Wafer (Si/5,000A Oxide/2,000A TaN)
BD Blanket Film Wafer (Si/5,000A BD, k-value = 2.7)
CORAL Blanket Film Wafer (Si/5,000A CORAL, k-value=3.0)
Cu Seed Blanket Film Wafer (Si/5,000A SiO <sub>2</sub> /250A Ta/10,000A PVD Cu Layer)

## 200mm Blanket Film Wafers (cont'd)

Blanket Wafer Type
BD/Ti + TiN Blanket Film Wafer (Si/5,000A BD/150A Ti + 100A TiN)
Oxide/Ti + TiN Blanket Film Wafer (Si/5,000A SiO <sub>2</sub> /150A Ti + 100A TiN)
Oxide/Ta + TaN Blanket Film Wafer (Si/5,000A SiO <sub>2</sub> /90A Ta + 60A TaN)
BD/Ta + TaN Blanket Film Wafer (Si/5,000A BD/90A Ta + 60A TaN)
Cu Blanket Film Wafer #1 (Si/5,000A SiO <sub>2</sub> /250A Ta/1,000A PVD Cu/15,000A ECD Cu)
Cu Blanket Film Wafer #2 (Cu "Filler Blanket Film Wafer") (Si/5,000A SiO <sub>2</sub> /250A Ta/1,000A PVD Cu/50,000A ECD Cu)
Cu Blanket Film Wafer #3 (Cu "Filler Blanket Film Wafer") (Si/5,000A SiO <sub>2</sub> /250A Ta/1,000A PVD Cu/10,000A ECD Cu)
Ru Blanket Film Wafers (Si/200A Ti/2,000A Ru)
GST Blanket Film Wafer (Si/1,000A SiO <sub>2</sub> /300A TiN/2,000A Ge <sub>2</sub> Sb <sub>2</sub> Te <sub>5</sub> )

### Deposition Methods Used:

- BD, CORAL, TEOS, SiN, HDP and SiON: CVD
- Ti, TiN, Ta, TaN and Ru: PVD
- GST: Magnetron Sputtering
- ECD Cu Layer: Cu Electroplating

# 300mm Blanket Film Wafers

Blanket Wafer Type
BPSG Blanket Film Wafer (BPSG Thickness: 6,800A)
Thermal Oxide Blanket Film Wafer (Oxide Thickness: 1 µm)
TEOS Oxide Blanket Film Wafer #1 (TEOS Thickness: 20,000A)
TEOS Oxide Blanket Film Wafer #2 (TEOS Thickness: 30,000A – 40,000A)
Particle Grade TEOS Blanket Film Wafer (Si/10,000A TEOS)
HARP CVD Oxide Blanket Film (HARP CVD Oxide Thickness: 1 µm)
HDP CVD Oxide Blanket Film (HDP CVD Oxide Thickness: 8,000A)
Nitride Blanket Film Wafer (Si/2,000A SiN)
Nitride Blanket Film Wafer (Si/1,000A SiO <sub>2</sub> /3,000A SiN)
Nitride Blanket Film Wafer (Si/5,000A SiN)
Nitride Blanket Film Wafer (Si/1,000A P-SiO <sub>2</sub> /5,000A SiN)
W Blanket Film Wafer (Si/3,000A Oxide/300A TiN/6,000A CVD W)
Cu Blanket Film Wafer #1 (Si/2,000A Oxide/250A Ta/1,000A Cu Seed Layer/1.5 µm ECD Cu Layer)
Cu Blanket Film Wafer #2 (Si/2,000A Oxide/250A Ta/1,000A Cu Seed Layer/4 µm ECD Cu Layer)
Ti Blanket Film Wafer (Si/1,000A Oxide/2,000A Ti)
TiN Blanket Film Wafer (Si/1,000A Oxide/2,000A TiN)
Ta Blanket Film Wafer (Si/1,000A Oxide/2,000A Ta)
TaN Blanket Film Wafer (Si/1,000A Oxide/2,000A TaN)
BDI (Black Diamond) Blanket Film Wafer (Si/6,000A BDI)
BDIIx Blanket Film Wafer (Si/5,000A BDIIx)
SiC Blanket Film Wafer (Si/1,000A Oxide/2,000A SiC)

\* All the 300mm Si substrates are: P-type (100) test grade, 1-100 ohm-cm, particle level <50@0.2 µm

## 300mm Blanket Film Wafers (cont'd)

### \*\* Deposition Methods Used for 300mm Blanket Film Wafers

- Ti, TiN, Ta, TaN and Cu Seed Layer: PVD
- W Layer: CVD
- ECD Cu Layer: Electroplating
- SiC, BDI and BDIIx: CVD