1 - Process Step: Process Start – JTBaker Clean **Date:**

Tool: JTB Hood with Rinser Dryer

Purpose: New wafers – clean as they start processing

Wafers: W1-W4 + T1-T

Process Specs: 4” Solution: JTB-100, H_2O_2, DI Water

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2 - Process Step: Thermal Oxidation - Steam **Date:**

Tool: D1 Steam Tube

Purpose: Grow 300nm of thermal steam oxide on wafers

Wafers: W1-W4 + T1

Process Specs: T = 1050C, tox =

3 - Process Step: Oxide Measurement **Date:**

Tool: Nanometrics

Purpose: Get actual thickness from thermal growth

Wafers: W1-W4 + T1

Process Specs:

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4 - Process Step: Photo Spin 1 **Date:**

Tool: Headway 1

Purpose: Put down first photo layer

Wafers: W1-W4

Process Specs: 1813 Photoresist, Spin Speed

Bake Temperature

Bake Time

5 - Process Step: Exposure Layer 1 **Date:**

Tool: MA6

Purpose: Expose first layer artwork – Mask L0

Wafers: W1-W4

Process Specs: Exposure Time

Lamp Energy

---

6 - Process Step: Develop Photo 1 **Date:**

Tool: Develop Hood with Rinser Dryer

Purpose: Develop first layer artwork

Wafers: W1-W4

Process Specs: MF319

Develop Time

7 - Process Step: Photo 1 Inspection **Date:**

Tool: Optical Microscope

Purpose: Identify if photo 1 steps are acceptable to continue processing

Wafers: W1-W4

Process Specs:

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8 - Process Step: Descum **Date:**

Tool: O2 Plasma Asher

Purpose: Remove any thin layer of photo at the bottom of cleared features

Wafers: W1-W4

Process Specs: Time

Power Level

9 - Process Step: Wet Etch SiO_2 **Date:**

Tool: Nanostrip/BOE hood with Rinser Dryer

Purpose: Remove SiO_2 down to Si

Wafers: T1 + W1-W4

Process Specs: Test Etch on T1 – time to dewet:

Etch time

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10 - Process Step: Inspection of etch **Date:**

Tool: Optical Microscope and Dektak

Purpose: Qualify SiO_2 etch before photoresist removal to move wafers on

Wafers: W1-W4

Process Specs:

11 - Process Step: Photoresist Removal **Date:**

Tool: Develop Hood NMP and Rinser Dryer

Purpose: Remove remaining photoresist before moving on to doping tube.

Wafers: W1-W4

Process Specs: NMP Tank Temperature

NMP Removal Time

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12 - Process Step: Boron Doping **Date:**

Tool: D3 Boron Doping Tube

Purpose: dope exposed silicon areas to create junctions

Wafers: W1-W4 + T2

Process Specs: Has a disk charge been performed within 24 hours of run?

Temperature

Time for doping

N2 Flow

13 - Process Step: Glass Removal – Test Wafer Only **Date:**

Tool: Deglaze Hood

Purpose: Remove insulating glass layer from doping process to measure resistivity

Wafers: T2

Process Specs: Etch Time

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14 - Process Step: Resistivity Measurement **Date:**

Tool: 4-Pt Probe

Purpose: Check the resistivity of the test wafer from the boron doping run

Wafers: T2

Process Specs:

15 - Process Step: Glass Removal – Device Wafers **Date:**

Tool: Deglaze Hood and Rinser Dryer

Purpose: Remove insulating glass layer from doping process

Wafers: W1-W4

Process Specs: Etch time

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16 - Process Step: Backdoor Etch **Date:**

Tool: BD Hood and Rinser Dryer

Purpose: Close-coupled to loading in RH Evaporator to remove an native oxide from the surface of the wafers before Al deposition

Wafers: W1-W4 + T3

Process Specs: Time

17 - Process Step: Aluminum Evaporation **Date:**

Tool: RH Evaporator

Purpose: Put down Aluminum layer for contacts

Wafers: W1-W4 + T3 (with step height tape)

Process Specs: Starting Pump-Down Time

Starting Process Pressure

Time for pumping

Process Variac Setting

Process Current

Process Pressure

Process Dep Rate

---

18 - Process Step: Inspection of Metal Evaporation **Date:**

Tool: Dektak

Purpose: Measure Aluminum deposition to get actual thickness

Wafers: T3

Process Specs:

19 - Process Step: Photo Spin 2 **Date:**

Tool: Headway 1

Purpose: Put down second photo layer

Wafers: W1-W4

Process Specs: 1813 Photoresist, Spin Speed

Bake Temperature

Bake Time

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20 - Process Step: Exposure Layer 2 **Date:**

Tool: MA6

Purpose: Expose second layer artwork – Mask L1

Wafers: W1-W4

Process Specs: Exposure Time

Lamp Energy

21 - Process Step: Develop Photo 2 **Date:**

Tool: Develop Hood with Rinser Dryer

Purpose: Develop second layer artwork

Wafers: W1-W4

Process Specs: MF319

Develop Time

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22 - Process Step: Photo 2 Inspection **Date:**

Tool: Optical Microscope

Purpose: Identify if photo 2 steps are acceptable to continue processing. Check for mis-alignment.

Wafers: W1-W4

Process Specs:

23 - Process Step: Descum **Date:**

Tool: O2 Plasma Asher

Purpose: Remove any thin layer of photo at the bottom of cleared features

Wafers: W1-W4

Process Specs: Time

Power Level

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24 - Process Step: Aluminum Wet Etch **Date:**

Tool: Metal Etch Hood with Rinser Dryer

Purpose: Remove unwanted Al to separate devices

Wafers: T3 + W1-W4

Process Specs: Etch Time

25 - Process Step: Inspection of Al etch **Date:**

Tool: Optical Microscope and Dektak

Purpose: Qualify Al etch before photoresist removal to move wafers on

Wafers: W1-W4

Process Specs:

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26 - Process Step: Photoresist Removal **Date:**

Tool: Develop Hood NMP and Rinser Dryer

Purpose: Remove remaining photoresist before moving on

Wafers: W1-W4

Process Specs: NMP Tank Temperature

NMP Removal Time

27 - Process Step: Aluminum Evaporation **Date:**

Tool: RH Evaporator

Purpose: Put down Aluminum layer for contacts

Wafers: W1-W4 + T3 (with step height tape)

Process Specs: Starting Pump-Down Time

Starting Process Pressure

Time for pumping

Process Variac Setting

Process Current

Process Pressure

Process Dep Rate

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28 - Process Step: Inspection of Metal Evaporation **Date:**

Tool: Dektak

Purpose: Measure Aluminum deposition to get actual thickness

Wafers: T3

Process Specs: