AZ® P4620 Photoresist Data Package

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AZ P4620  Copper plating

Plating process condition
Photoresist thickness: **15um**, Prebake: 110C/180 sec. (Hotplate)
Exposure: PLA-501F  (Soft contact, ghi-line aligner)
Development: AZ 400K 1:4, Immersion for 300 sec., 23 C
Plating liquid: MICROFAB Cu200 (EEJA)
Plating height: 7.0um, Plating: 25 C / 30 min.
AZ® P4620 Gold Plating Process

FT: 28um, Single Coat
Softbake: 1) 100°C / 500 sec. (Hotplate)
        2) 90°C / 180 min. (Oven)
Rehydration time: 60 minutes
Exposure: UTS-SS-III (ghi-line)
Develop: AZ 400K 1:3, 21.5°C
Plating: Cyanide Gold Plating Solution
AZ® P4620 Gold Plating Process
AZ® P4620 Gold Plating Process

Photoresist Mask CD = 93.5um;  Au Bump CD = 96um.
AZ P4620  Lithography performance

Process Conditions:

Optitrac Coat/ Bake
Coat: Static dispense on Silicon
Target Film Thickness: 12 µm
Softbake: 110C hotplate/ 80 sec. full contact
Exposure: Ultratech 1500 gh line Stepper
Develop: AZ® 300 MIF, continuous spray for 200 sec. @ 23 C

Analysis:

Amray SEM
Film Thickness: 12 µm
Optitrac coat and Bake
SB: 110°C / 80 sec
Ultratech 1500 gh line Stepper
AZ 300 MIF, 200 sec continuous spray @ 23°C
AZ P4620 Lithography performance

<table>
<thead>
<tr>
<th>800 mJ/cm²</th>
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<th>1100 mJ/cm²</th>
<th>1200 mJ/cm²</th>
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10.0 µm Contact Holes 1:1 Pitch

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10.0 µm Contact Holes 1:0.3 Pitch

Film Thickness: 12 µm
Optitrac coat and Bake
SB: 110 C / 80 sec
Ultratech 1500 gh line Stepper
AZ 300 MIF, 200 sec continuous spray @ 23 C
AZ P4620  Lithography performance

Process Conditions:

- Optitrac Coat/ Bake
  Coat: Static dispense on Silicon
  Target Film Thickness: 24 µm
- Softbake: 1st layer 110 C hotplate/ 80 sec. full contact
  2nd layer 115 C hotplate/ 180 sec. full contact
- Exposure: Ultratech 1500 gh line Stepper
- Develop: AZ® 400K 1:4, continuous spray for 260 sec. @ 27 C

Analysis:

Amray SEM
Film Thickness: 24 µm
Optitrac coat and Bake
SB: 1st layer 110 C / 80 sec
2nd layer 115 C /180 sec
Ultratech 1500 gh line Stepper
AZ 400K 1:4, 260 sec continuous spray @ 27 C
AZ® P4620 Lithographic Performance Summary

Process Conditions

- Substrate: Bare-Si
- Film-thickness: 17µm
- Softbake: 120°C / 240 sec. (DHP)
- Exposure: Canon PLA-501F (ghi-line)
- Dose: 630 mJ/cm²
- Development: AZ 400K Developer 1:4, Immersion - 300 sec., 23°C
AZ® P4000 Bleached Absorbance Curve

AZ P4000 Series resist(s)
Ellipsometric Absorbance
Normalized to 1/µm

'k' ellipsometric: P4000

BU Electronic Materials
AZ® P4000 Unbleached Absorbance Curve

AZ P4000 Series resist(s)
Ellipsometric Absorbance
Normalized to 1/µm

Absorbance ('k')

Wavelength (nm)

'k' ellipsometric: P4000

BU Electronic Materials
AZ® P4000 Series Spin Speed Curve

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