AZ® 125nXT Series
Ultra-thick Negative Photoresist
for Advanced Packaging Applications

The information contained herein is, as far as we are aware, true and accurate. However, no representations or warranties, either express or implied, whether of merchantable quality, fitness for any particular purpose or of any other nature are hereby made in respect of the information contained in this presentation or the product or products which are the subject of it. In providing this material, no license or other rights, whether express or implied, are given with respect to any existing or pending patent, patent application, trademarks, or other intellectual property right.
AZ® EXP 125nXT-10A
Resolution @ FT = 50μm; Line/Space

60 μm

50 μm

40 μm

30 μm

20 μm

10 μm

9 μm

8 μm

5.5:1 aspect ratio
AZ® EXP 125nXT-10A
Resolution @ FT = 50 μm; Post Images

AZ, the AZ logo, BARLi, Aquatar, nLOF, Kwik Strip, Klebosol, and Spinfil are registered trademarks and AX, DX, HERB, HiR, MiR, NCD, PLP, Signiflow, SWG, and TARP are trademarks of AZ Electronic Materials.
AZ® EXP 125nXT-10A
Resolution @ FT = 50 μm; Contact Holes

60 μm | 50 μm | 40 μm | 30 μm | 20 μm
AZ® EXP 125nXT-10A
Aspect Ratio, 40μm C/H Images; FT = 50μm
AZ® Exp 125nXT-10A
Linearity for FT = 60μm; Line/Space @ 1800 mJ/cm²

60μm
50μm
40μm
30μm

20μm
10μm
9μm

6:1 aspect ratio on an aligner!

AZ, the AZ logo, BARLi, Aquatar, nLOF, Kwik Strip, Klebosol, and Spinfil are registered trademarks and AX, DX, HERB, HiR, MiR, NCD, PLP, Signiflow, SWG, and TARP are trademarks of AZ Electronic Materials.
AZ® Exp 125nXT-10A
Linearity for FT = 60μm, Post Images @ 1800 mJ/cm²

60μm

50μm

40μm

30μm

20μm

6:1 aspect ratio on an aligner!

AZ Electronic Materials

AZ, the AZ logo, BARLi, Aquatar, nLOF, Kwik Strip, Klebosol, and Spinfil are registered trademarks and AX, DX, HERB, HiR, MiR, NCD, PLP, Signiflow, SWG, and TARP are trademarks of AZ Electronic Materials.
AZ® Exp 125nXT-10A
100μm Contact Hole, Foot Analysis #1

Exposure tool:
Suss MA-200 Aligner
AZ® Exp 125nXT-10A
Resolution Comparison, Line/Space, FT = 70µm

Copper Substrate
Focus = -15µm
DTP = 2000 mJ/cm²
Ultratech AP 300 Stepper
AZ® Exp 125nXT-10A
Resolution Comparison, Contact Hole, FT = 70µm

Copper Substrate
Focus = -15µm
DTP = 2000 mJ/cm²
Ultratech AP 300 Stepper
AZ® Exp 125nXT-10A Cu Plating Test, FT = 60µm

Descum: 10 min / 300W, Plasma Start AXIC Equipment

Cu solution: Intervia 8540

Tool: Semitool CFD 2 Reactor

Process conditions:
30 °C, flow rate, 5 GPM
Wafer rotation, 60 rpm
Deposition rate: 0.4 - 0.8 µm/min

Stripper: AZ® 400T at 75 °C for 20 min
Tool: Semitool Solvent Spray Chamber
AZ® Exp 125nXT-10A
Resist and Cu Plate Images

<table>
<thead>
<tr>
<th>75 μm Vias</th>
<th>8 μm Vias</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 μm FT</td>
<td>8 μm FT</td>
</tr>
<tr>
<td>75 μm FT</td>
<td>75 μm FT</td>
</tr>
<tr>
<td>50 μm FT</td>
<td>50 μm FT</td>
</tr>
<tr>
<td>25 μm FT</td>
<td>25 μm FT</td>
</tr>
</tbody>
</table>

**Resist Pattern**

- 75 μm FT: Dose: 3400 mJ/cm², Develop: 3 x 46 Sec Puddles
- 75 μm FT: Dose: 2200 mJ/cm², Develop: 3 x 35 Sec Puddles
- 50 μm FT: Dose: 1200 mJ/cm², Develop: 3 x 25 Sec Puddles
- 25 μm FT: Dose: 1200 mJ/cm², Develop: 2 x 15 Sec Puddles

**Cu Plate**

- 75 μm FT: Dose: 3400 mJ/cm², Develop: 3 x 46 Sec Puddles
- 75 μm FT: Dose: 2200 mJ/cm², Develop: 3 x 35 Sec Puddles
- 50 μm FT: Dose: 1200 mJ/cm², Develop: 3 x 25 Sec Puddles
- 25 μm FT: Dose: 1200 mJ/cm², Develop: 2 x 15 Sec Puddles

AZ, the AZ logo, BARLi, Aquatar, nLOF, Kwik Strip, Klebosol, and Spinfil are registered trademarks and AX, DX, HERB, HiR, MiR, NCD, PLP, Signiflow, SWG, and TARP are trademarks of AZ Electronic Materials.