



The MOSFET Innovation Pace: Why Silicon Wins Critical Power Stages Alongside SiC and GaN

RESEARCH, LABORATORY, AND UNIVERSITY APPLICATIONS

R&D sintering and acoustic inspection working as one powerful duo.

X-Sinter P55 and X-SAM M51 create a versatile laboratory workflow: develop modules, tune bonding parameters, and validate bonding quality with non-destructive scanning acoustic microscopy. The result is a fast, flexible path from process idea to reliable data.



X-SINTER P55

Semi-automatic sinter press for R&D and small-scale production

- ▶ High accuracy unit for R&D and Prototyping
- ▶ Large Sintering area 300 x 300 mm
- ▶ Compact design: 1300x1300 mm
- ▶ Clamping force: 300kN
- ▶ Max Temp up to 320°C
- ▶ External Thermocouple inspection point
- ▶ Uniform pressure and quality control system
- ▶ Inert atmosphere carrier (N2, N2+H2, vacuum or other)
- ▶ Patented planetary load cell system
- ▶ Lower force measurement sensor for quality control
- ▶ Wafer process tool up to 12" (in inert atmosphere)
- ▶ Customized fixture
- ▶ Automatic clamping
- ▶ Up to 100 recipe storage / 4 different levels of access
- ▶ USB Data export *.CSV
- ▶ Touch-screen display
- ▶ EasyInterface in English/Italian/Chinese/German

2025 new updates:

- ▶ MES connection and Secs Gem
- ▶ Remote Support



X-SAM M51

Desktop SAM for lab and quality inspection

- ▶ High precision acoustic microscope for R&D activities and daily sampling inspection.
- ▶ Designed for lab and clean-room environments
- ▶ AMX software interface, defect mapping analysis and thru-scan.
- ▶ Ideal after sintering or other bonding operations to verify the interface quality.

THE LABORATORY DUO

Use P55 to create and optimize bonded modules. Use M51 to inspect voids, delamination and bonding uniformity. Together they reduce iteration time, improve repeatability and give engineers clear evidence before moving to production.



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HIGH-THROUGHPUT PRODUCTION

First in class production. Reliable control. Lower downtime

For production, the X-Sinter P200X Series and Inline X-SAM M201X combine process stability with inline quality evidence: reliable high-capacity sintering thanks to exclusive AMX Micropunch System, inert atmosphere full process, traceable controls (SEMI Standards), automatic inspection and a practical route to lower maintenance cost and fewer operational stops.



X-SINTER P201X GEN.3

- ▶ Full in line unit
- ▶ MicroPunch system [AMX Patented]
- ▶ Large Sintering Area 350mm x 270mm
- ▶ Sintering force up to 490 kN or 980 kN
- ▶ Integrated Pre-heating and Post-cooling areas
- ▶ Controlled atmosphere full cabinet (N2 or others) up to 100ppm
- ▶ **Copper sintering ready !!!**
- ▶ Load cell force measurement for quality control
- ▶ Best on market footprint W1400 x D1600 x H1600 mm
- ▶ Automatic protective film feeding
- ▶ AMX Vision System
- ▶ Customer tray
- ▶ Pass through option
- ▶ SEMI Standards - ISO6
- ▶ Proprietary software easy interface;
- ▶ Smart Factory (Industry 4.0): Secs Gem / OPCUA / OPCON



X-SAM M201X

- ▶ Full in-line unit compatible with customer carriers (up to 2 per cycle)
- ▶ Automation: Fully integrable, automatic loading / unloading system
- ▶ Scanning Capabilities: Multiple transducers up to 400MHz (optional), supporting C-Scan and/or T-Scan.
- ▶ Water Management: Water tank with an embedded de-bubbler and filtering system
- ▶ Component Safety: Customized holders/water shells for exposed (non-encapsulated) active components;
- ▶ Integrated Drying: Features one or multiple embedded drying station
- ▶ Resolution: customizable up to 50µm
- ▶ Software & AI: AMX software interface with integrated automatic defect recognition and remote assistance tools
- ▶ SEMI Standards
- ▶ Smart Factory (Industry 4.0): Secs Gem / OPCUA / OPCON

MASS PRODUCTION

Thanks to automation know how, AMX is proud partner of Semicon Leaders, Power electronics players. Tier 1 and OEM (Automotive, Aerospace, Defense, Industrial inverters power supply)

HIGH CAPACITY

Streamline production flow and support stable output.

LOWER DOWNTIME

Fast tool sep and reliable platforms reduce stops

TRACEABILITY

Data, force control and inspection evidence, SEMI

COST CONTROL

Optimize process windows reduce maintenance impact

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