



Onto Innovation

Investor Presentation

Q1 2024

Safe Harbor

The information presented herein contains forward-looking statements that relate to anticipated future operating results and performance. These statements are only predictions based on management's current expectations and assumptions, including market size and forecasted growth, Total Available Market (or "TAM"), Served Available Market (or "SAM") and revenue estimates, and necessarily involve risks and uncertainties. We do not assume any obligation to update the information provided. Actual events or results may differ materially from those projected, including as a result of changing industry and market trends, reduced demand for our products, the timely development of our new products and their adoption by the market, increased competition in the industry, price reductions and other subsequent developments and business conditions. Additional information and considerations regarding the risks faced by Onto Innovation are available in our Form 10-K reports for the year ended December 31, 2023, and other filings with the Securities and Exchange Commission.

This presentation includes non-GAAP financial measures which are not intended to be considered in isolation or as a substitute for the financial information prepared and presented in accordance with GAAP. Management uses both GAAP and non-GAAP measures when evaluating the business internally and therefore believes it is important to make these non-GAAP measures available to the financial community. Reconciliations of non-GAAP measures to the most relevant GAAP amounts are included in the appendix section of this presentation.

As the forward-looking statements are based on Onto Innovation's current expectations, the company cannot guarantee any related future results, levels of activity, performance or achievements. Onto Innovation does not assume any obligation to update the forward-looking information contained in this presentation.

Onto Innovation Snapshot

High tech capital equipment company specializing in optical process solutions for semiconductor / related markets

**\$846
MILLION**
TTM REVENUE

\$3.99

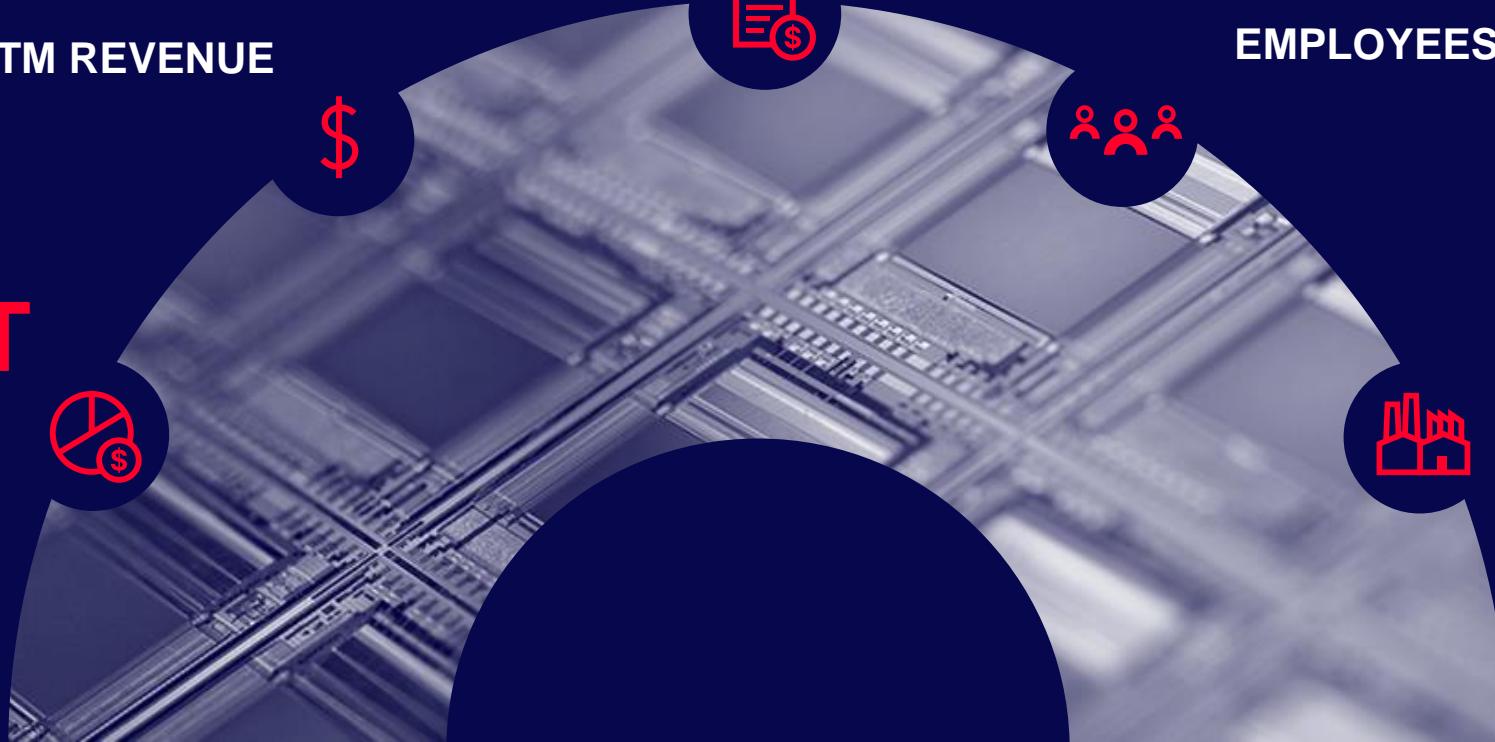
TTM ADJUSTED EPS

1,500
EMPLOYEES

**THIRD
LARGEST**

U.S. PROCESS
CONTROL
SUPPLIER

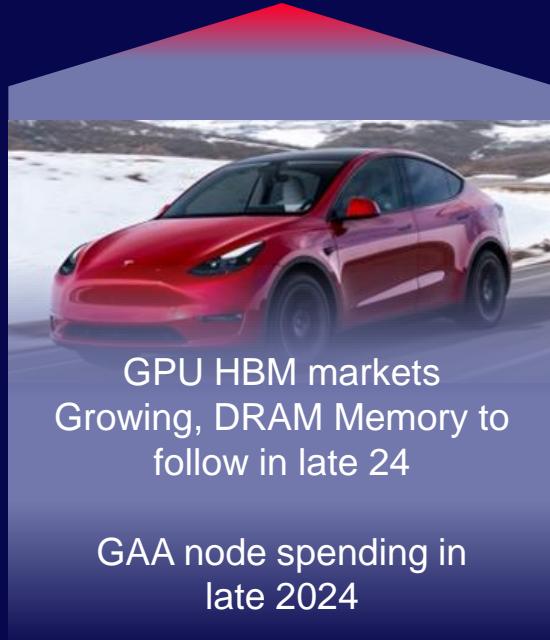
>10,000
ACTIVE METROLOGY
& INSPECTION
TOOLS INSTALLED



Macro Trends Driving Onto Innovation... 2024 and Beyond

SEMI CAP GROWTH

12% WFE
CAGR¹



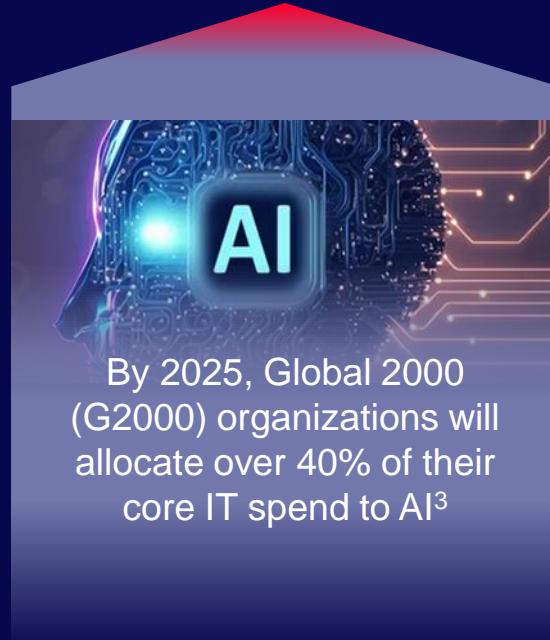
GREEN INFRASTRUCTURE

46% GLOBAL EV
CHARGING
STATION CAGR²



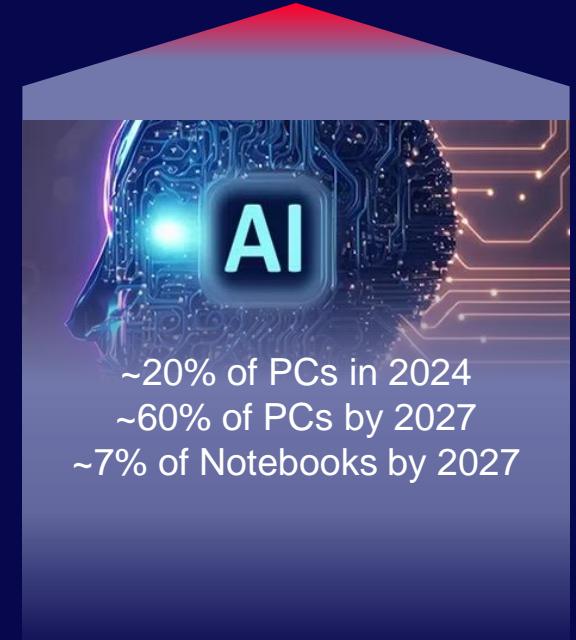
A.I. SERVER GROWTH

42% A.I. SERVER
CAGR³



A.I. DESKTOP CHIPLETS

80% CHIPLET PKG
CAGR⁴

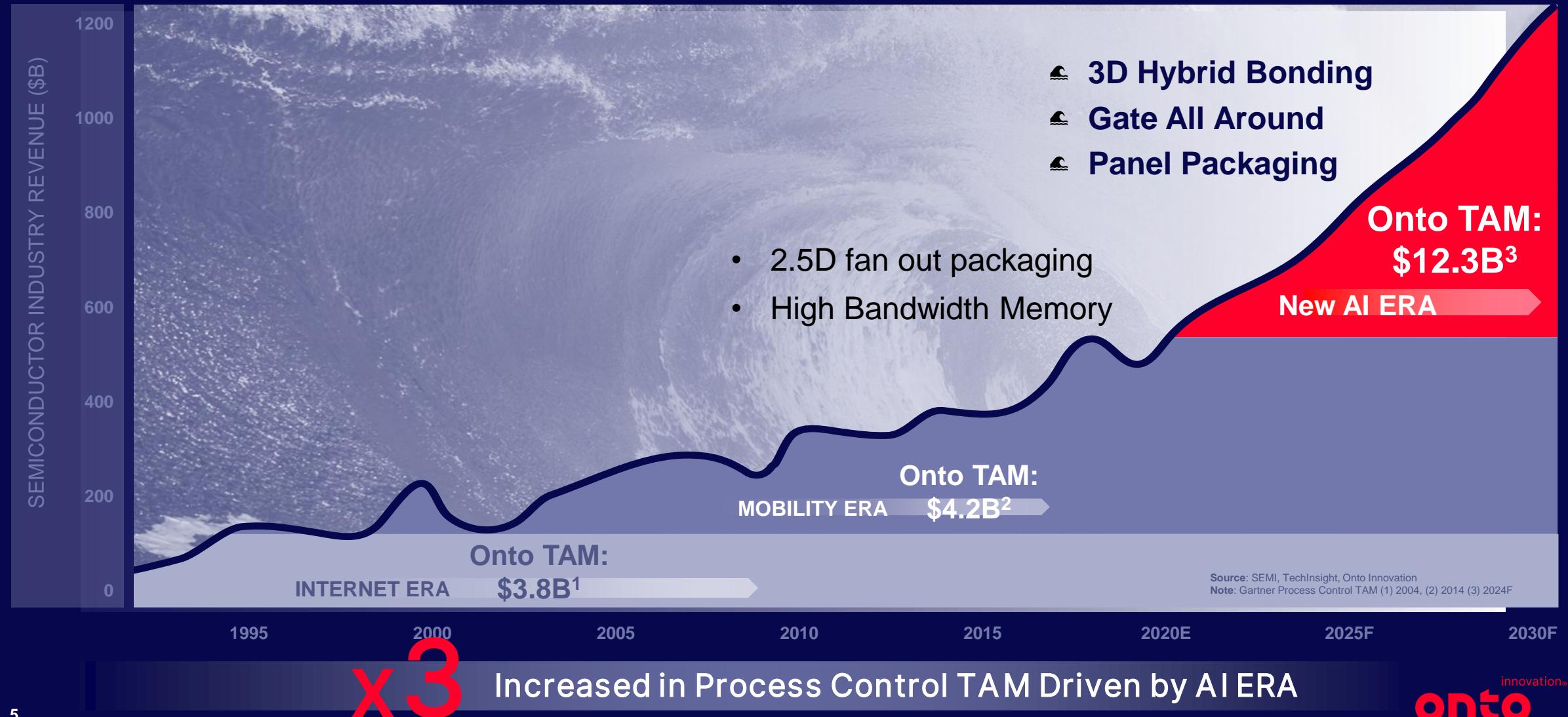


Notes: 1. TechInsight WFE Forecast Dec 2023 | 2. BoA Dec 2023 Forecast BEV = Battery Electric Vehicle | 3. IDC 2023 to 2026 shipments

4. Canals KGI Research Dec 2023

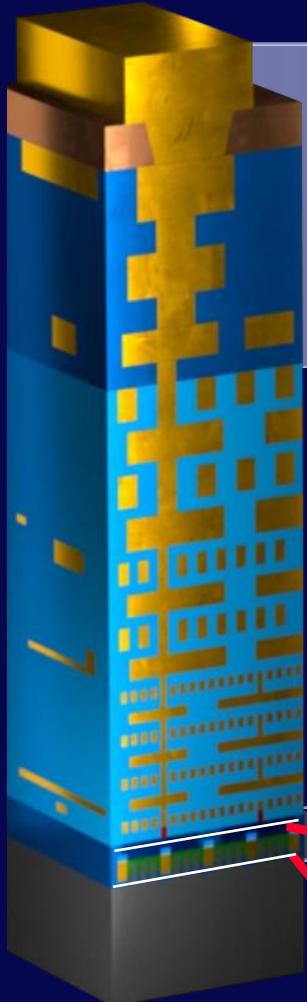
Why is the AI Era Exciting for Onto Innovation?

Process Control TAM Increasing thru each new era



AI Wafer Process Control: from Advanced Nodes to Advanced Packaging

Cross-section of an advanced logic wafer and Onto process control systems on all layers



**Packaging Redistribution
Layers & Bump**
ADVANCED PACKAGING LINE



DRAGONFLY® MACRO INSPECTION

Metal Interconnect Layers
FAB BACK-END OF LINE (BEOL)



IRIS™ PLANAR FILMS METROLOGY

Advanced Node Layers
FAB FRONT-END OF LINE (FEOL)



ATLAS® OCD METROLOGY



GATE ALL-AROUND STRUCTURES

Advanced Nodes Growth from GAA Transistor Process Control



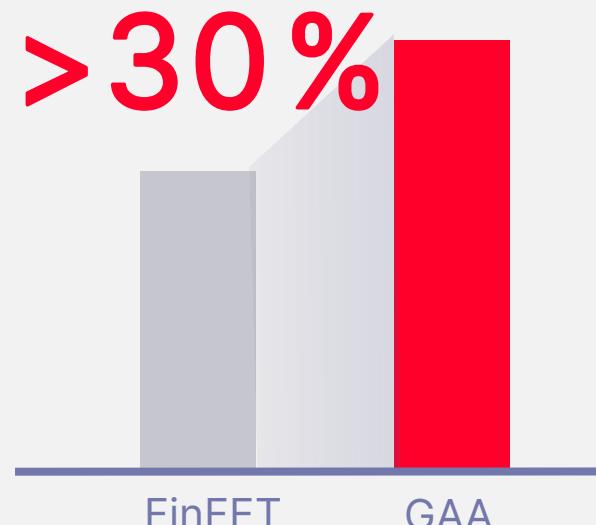
Measuring additional features requires more unique signals

ONTO PATENTED SE TECHNOLOGY

COMPETITORS' SE TECHNOLOGY LIMIT

No. of unique signals

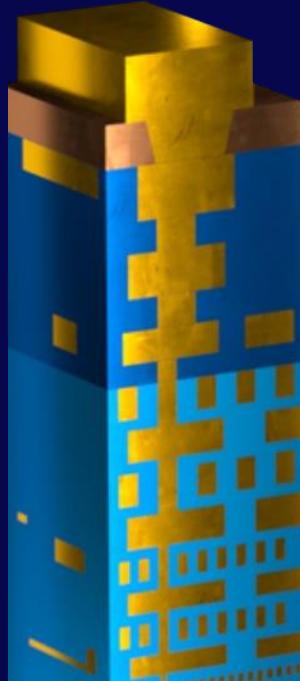
Increasing OCD metrology in critical GAA layers



Onto's Atlas® V platform is already qualified for critical GAA OCD applications

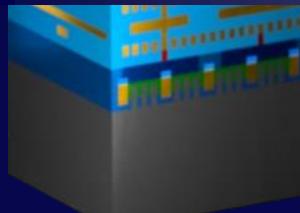
Advanced Packaging Growth From Additional Wafer Layer Process Control

Cross-section of an advanced logic wafer with metal redistribution layers (RDLs)



- 8-15 metal redistribution layers and vias required
- Each layer must be measured and inspected to assure 100% continuity
- Power and data must be arranged into grid formation on top layer
- Grid bumps must align/coincide with package alignment
- Each bump must be measured to assure 100% connections

Onto's Dragonfly® G3 platform is already qualified for critical RDL applications



Size of Single Chip is Limited; Getting More Power Requires a Chiplet

Size of CPU/GPU chips size of chips limited by lithography reticle size of 850 sq mm

Broadwell



2011-2017

Die size growing to
300 sq mm

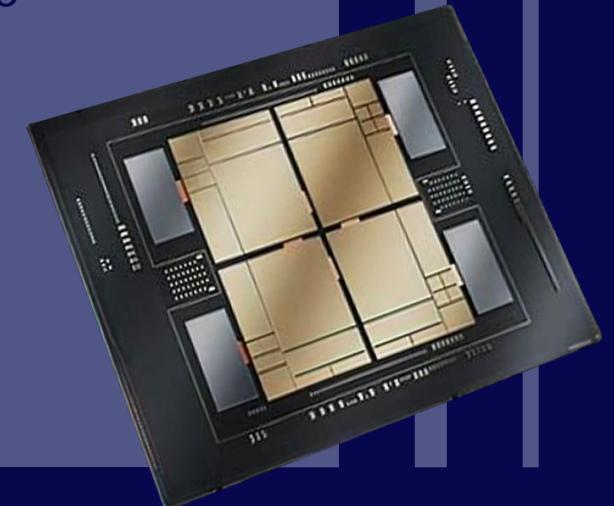
Ice Lake
2021



2018-2021

Constant die size 690 sq mm
No growth due to reticle limit

Saphire Rapids
2023



2023

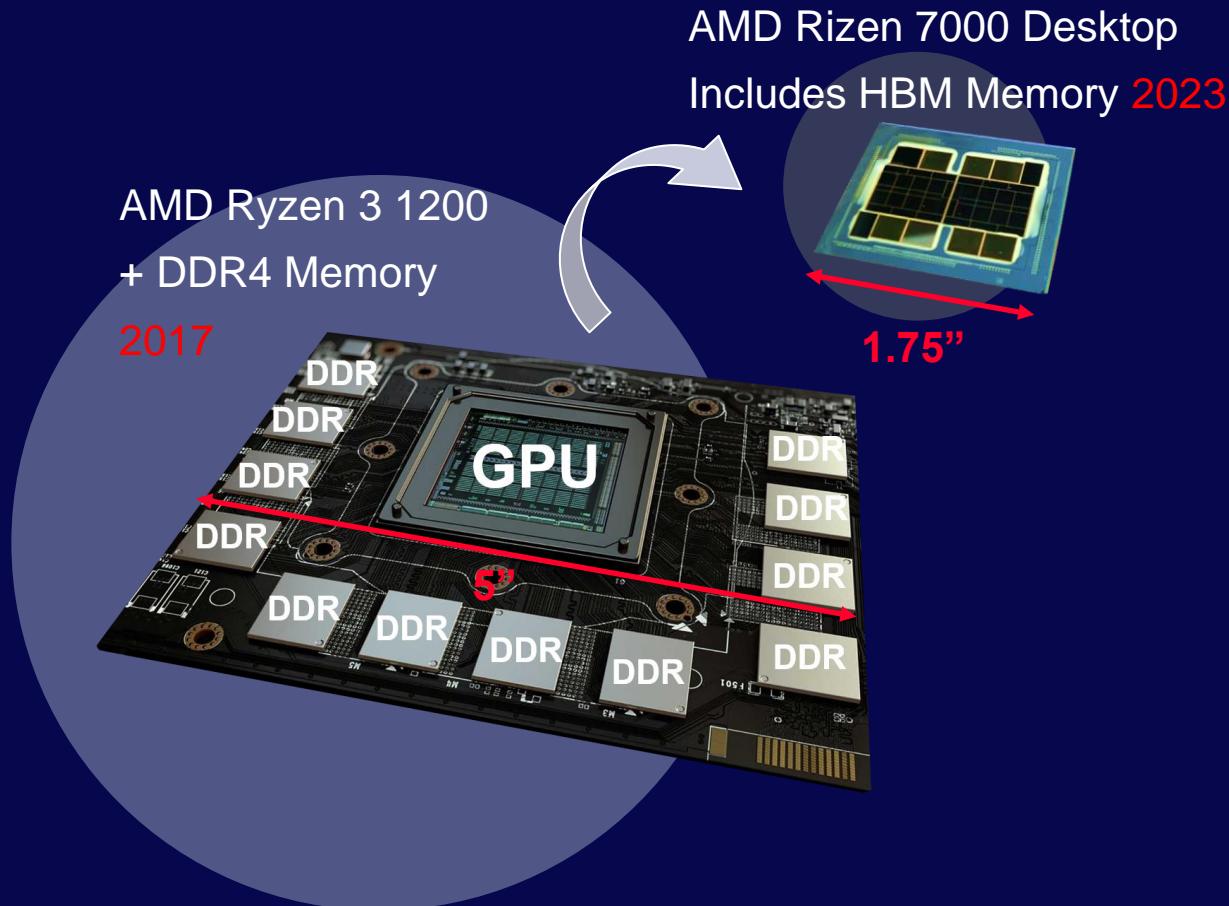
Chiplet die size 1600 sq mm
Using 4x 400 sq mm die

Efficiencies of Chiplet-based Architecture to Drive Panel Market Growth of

>100% by 2030

Advanced Heterogeneous Packaging Transforming High Performance Compute

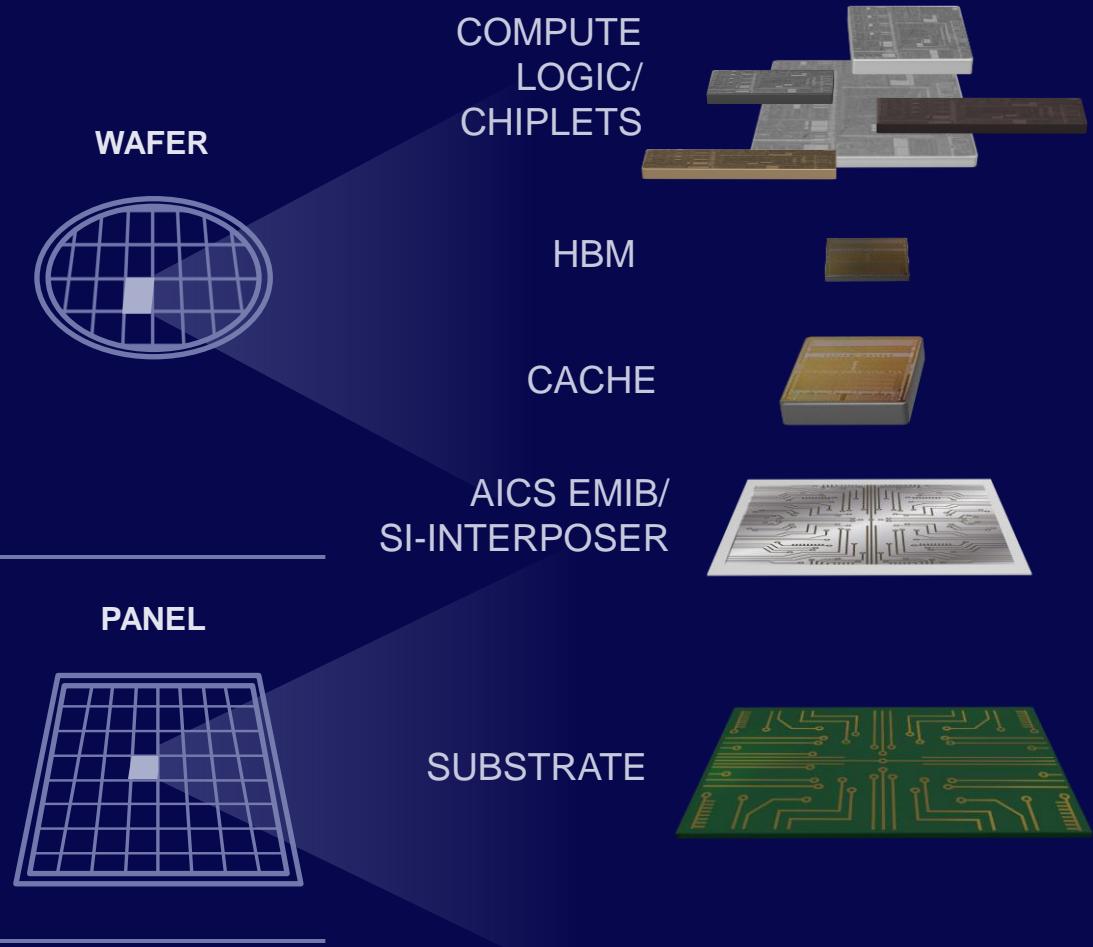
Increased speed by adding cores, reduced power, lower cost



- CPU/GPU adds more cores for parallel processing from 4 cores to 16 cores
- Increased transistor count from 20Bn to 80Bn
- On-processor Cache memory increased from 8MB to 128MB
- Reduced system size incorporating 128 GB DRAM inside package!

Onto's Portfolio for Advanced Heterogeneous Packaging

Onto Innovation covers entire value chain for advanced packaging



- RDL Inspection
- IR Die Positioning and Tilt Metrology
- Bump Heights Inspection and Organic Residue Detection
- Chip/crack Detection

Dragonfly®



- Planar Film Thickness

Iris™



- Metal/Hard Mask Thickness

Echo™



- Under Film Bubble/Particles Inspection
- VIA Metrology/Inspection
- RDL Inspection
- Bump Metrology/Inspection

Firefly®



- Interconnect Patterning Lithography

JetStep®



Onto's Lithography: Bringing Interposer Process and Process Control Together Through Software

PROCESS

20% Higher Resolution

65% Better
Overlay Accuracy



JETSTEP® LITHOGRAPHY

SOFTWARE

Next Generation
GLASS Interposer

50%
More Stable

SOFTWARE

PROCESS CONTROL

Most advanced process
control tool for panel
production
(2D/3D)



FIREFLY® INSPECTION

Q2 2024 Quarter Guidance Recap*

Published May 9, 2024

REVENUE

\$230M to \$240M

GROSS MARGIN

52% to 54%

OPERATING MARGIN

25% to 27%

DILUTED EPS

\$1.14 to \$1.26

Model Assumptions

- Non-GAAP Operating Expenses: **\$62M - \$64M**
- Effective Tax Rate: **14% - 16%**
- Diluted Share Count: **49.9 Million**

*Non-GAAP Gross Margin, Operating Margin, EPS Guidance

Long Term Organic Operating Model*

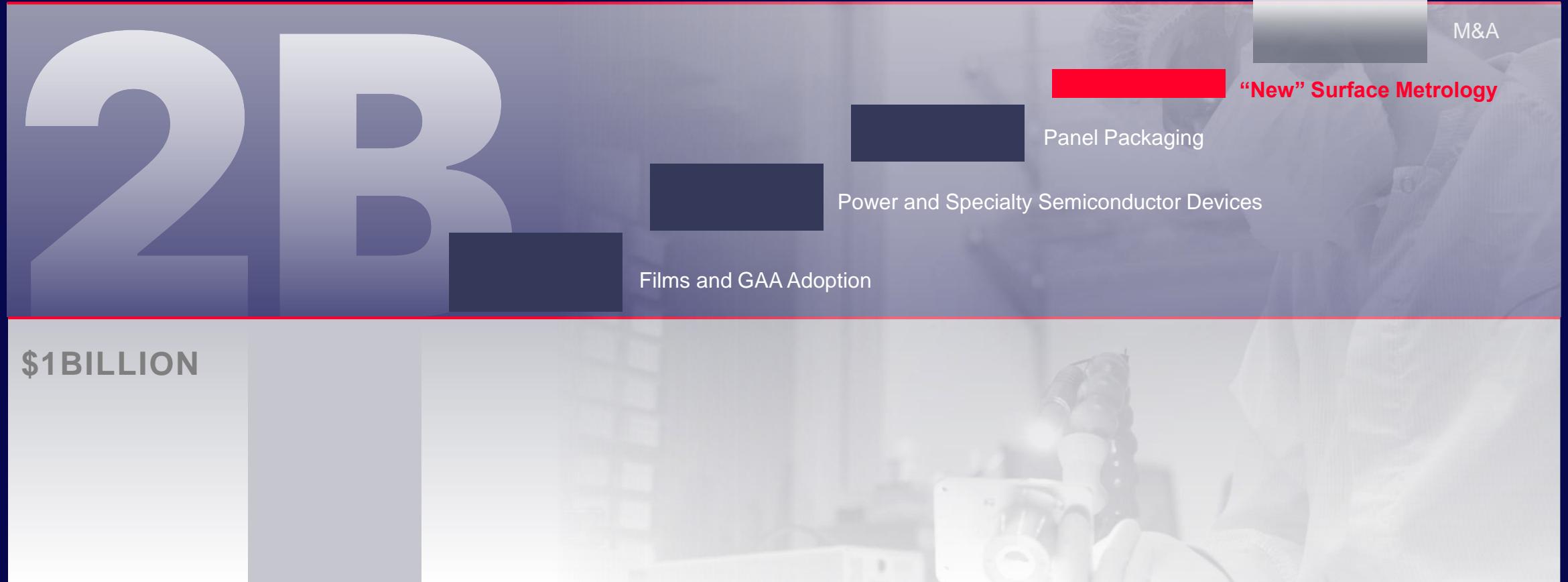
Foundation in place to support our path to \$1.8 Billion

Annual Revenue	\$1B Model	\$1.2B Model	\$1.4B Model
Gross Margin	56% - 57%	57% - 58%	58% - 59%
Operating Profit	31% - 32%	33% - 34%	35% - 36%
Earnings per Share	\$5.50 - \$6.00	\$6.50 - \$7.00	\$8.00 - \$8.50
Cash Flow	\$250-\$250M	\$250-\$300M	\$300-\$350M

*Non-GAAP Long Term Financial Model: excludes amortization; includes stock-based compensation

Positioned for Strong Organic Growth in Next 5 Years

Based on Gartner market growth estimates and management estimates for share in new markets



Onto Innovation Ready for Next Phase of Growth

1

**Aligned to
Multiple High
Growth Markets**

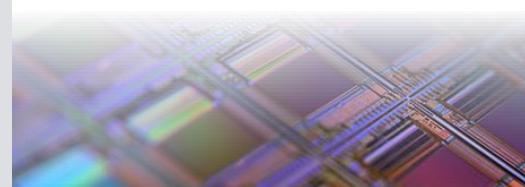
AI / Compute
5G / IoT
Green Technology



2

\$3B SAM

Room to Grow



3

\$1.8B
**Potential Factory
Output**

Scope and Scale to
Support Growth



4

\$24M
**Platform
Synergies**

Potential of >\$8.00
Earnings per Share

Strong Cash Generation



Thank You

谢谢 | 謝謝

Danke

ありがとう

감사합니다

Obrigado

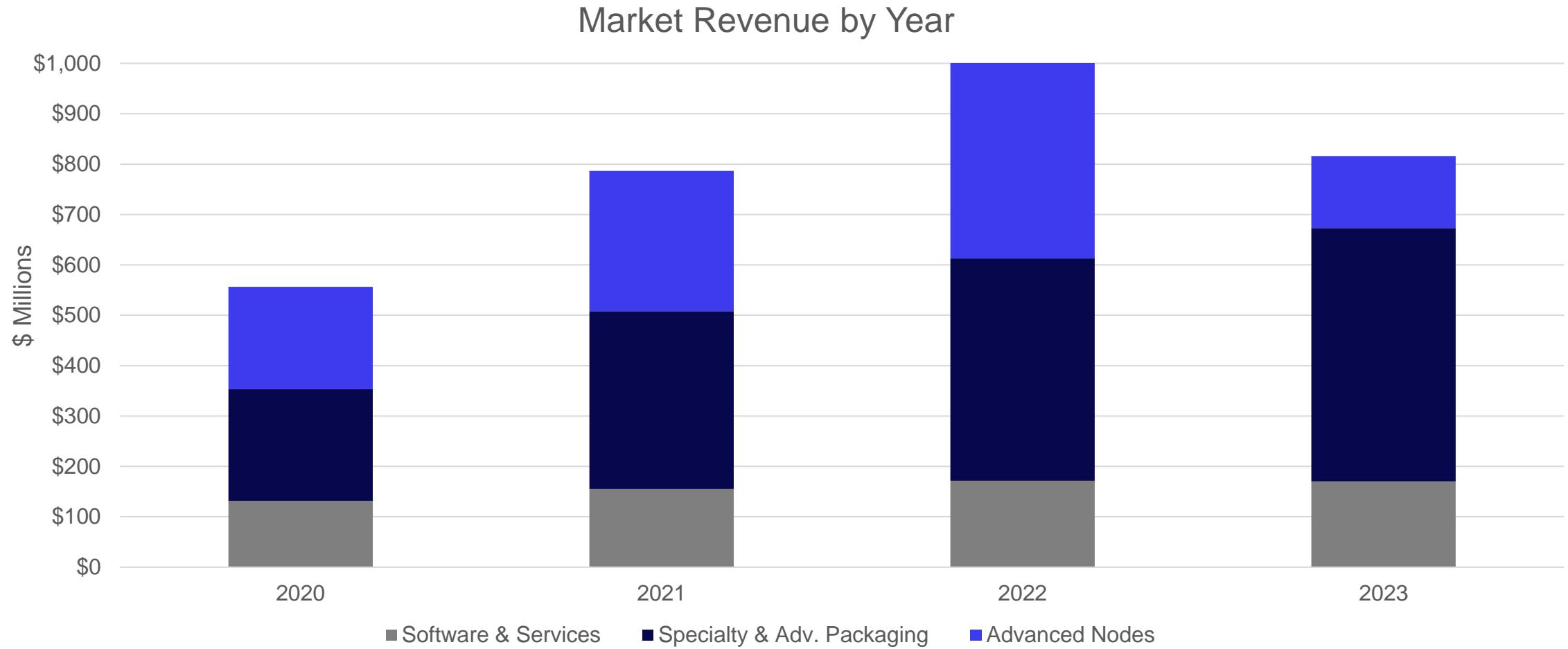
Merci

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Appendix



Annual Markets Reported



Quarterly Markets Reported

