POWER

JUNE 26, 2025
CHRIS ALLEXANDRE
SVP AND GM OF POWER
RENESAS ELECTRONICS CORPORATION

AT A GLANCE
POWER

Our products and technologies

- Power management integrated circuit (PMIC)
- Computing power
- MOSFET
- Automotive power
- Battery management system (BMS)
- GaN

Markets we serve

Infrastructure & AI computing

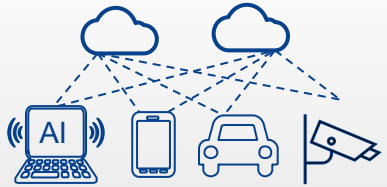
Automotive

Industrial

IoT

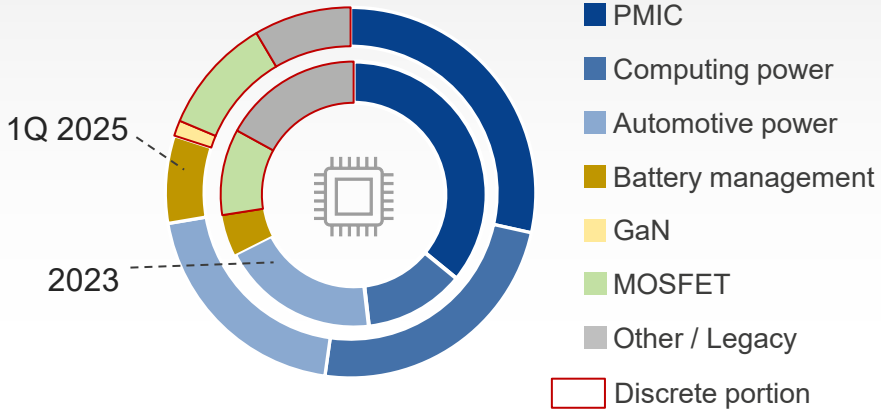
Macrotrends driving growth

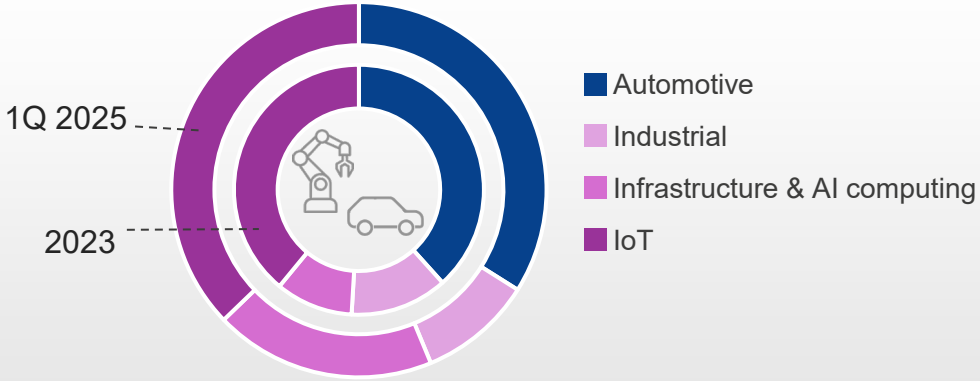
AI and Cloud infrastructure



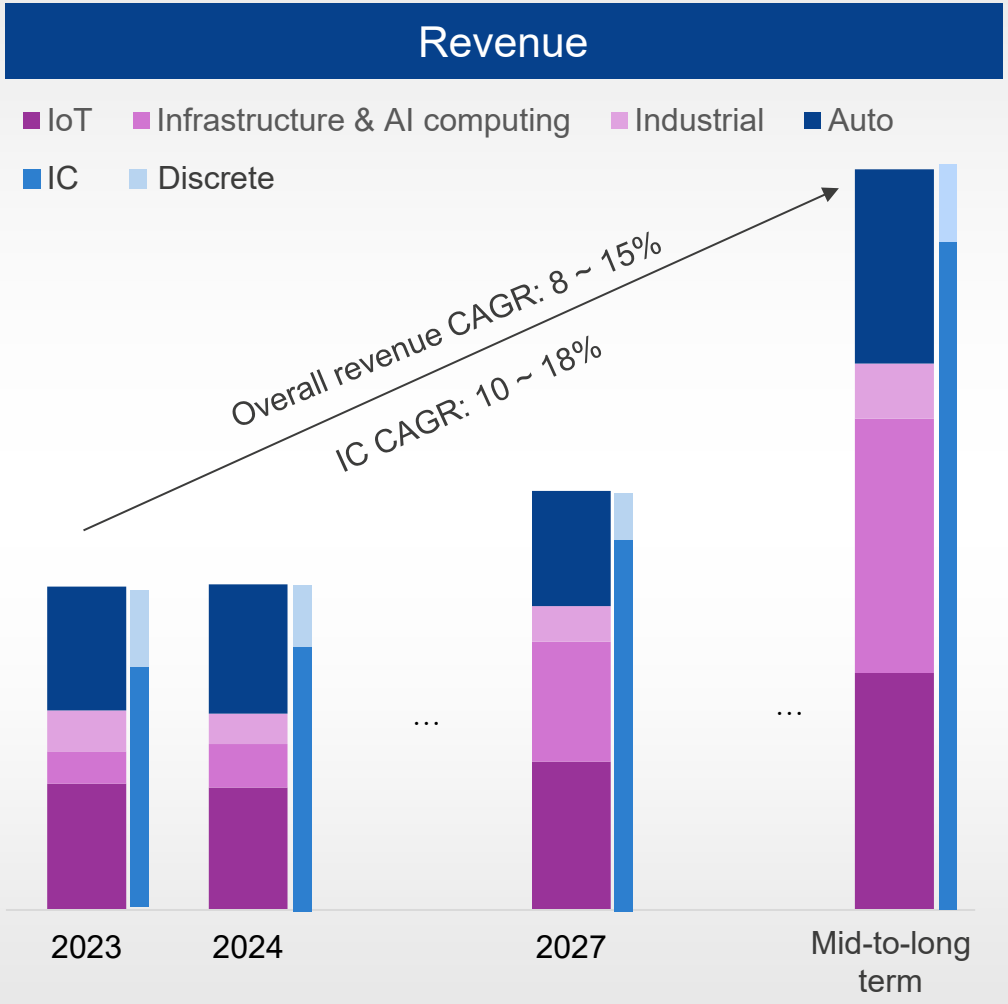
Smart connected edge

2023 and 1Q 2025 Revenue mix





GROWTH DRIVERS
POWER



	Growth drivers	CAGR 2023 - 2025	CAGR 2024 – Mid-to-long term
Automotive	GaN and MOSFET Battery management system Automotive power PMIC (attach to MCU/SoC)	-5 ~ -10%	5 ~ 10%
Industrial	GaN and MOSFET PMIC (attach to MCU/SoC) Battery management system	-20 ~ -15%	5 ~ 10%
Infrastructure & AI computing	Computing power GaN and MOSFET Battery management system	35 ~ 45%	25 ~ 35%
IoT	PMIC Battery management system	0 ~ 5%	5 ~ 10%

POWER STRATEGY AND SEGMENT FOCUS

Focus areas

Infrastructure / AI & Computing

- AI infrastructure
- Other server & cloud
- AI on the edge

Automotive

Industrial and Energy

Strategy

Targeted approach

- Target the fastest growing segment of our SAM with tailored solutions with more application specific products
- Center of application expertise - dedicated engineering and segment specific teams
- Deep engagement with strategic and lead customers. Develop scalable and repeatable richer solutions for end-equipment

Digital attach approach

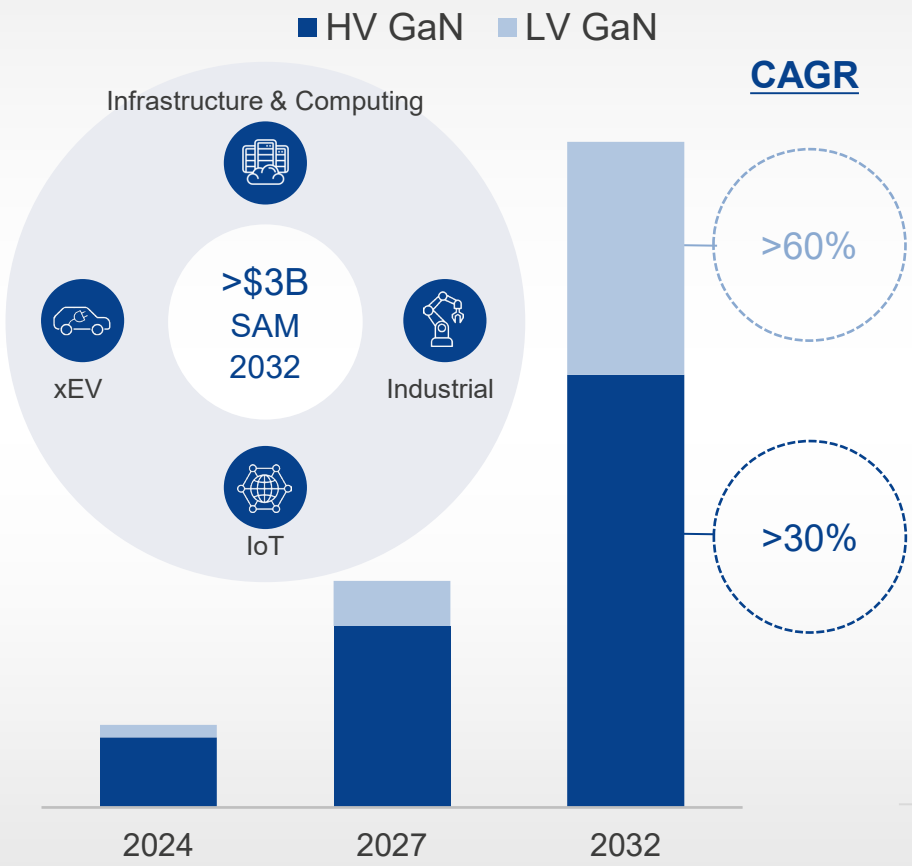
- Full BOM focus with more products per systems
- Solution and attach play: leverage Renesas digital footprint (MCU, MPU, SoC)
- Leveraging Renesas 365 for platform attach & system integration

Accelerated growth

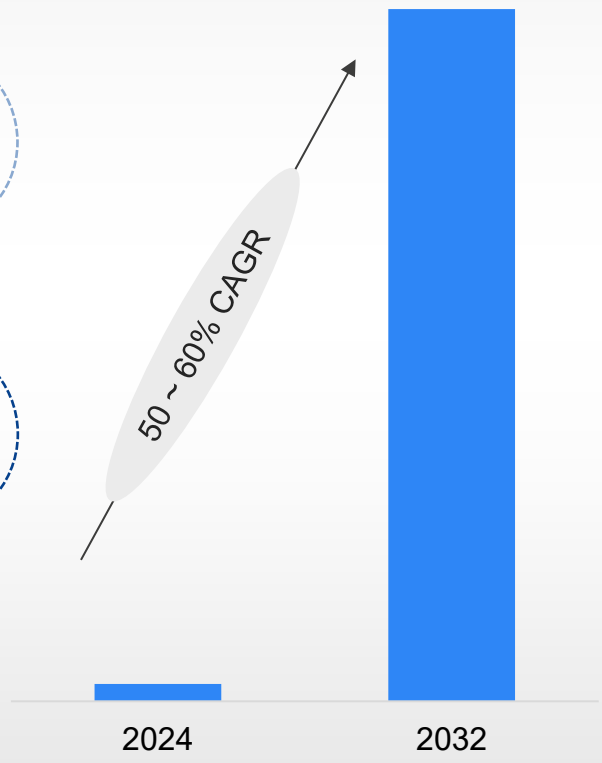
Embedded system solution

GAN MARKET EXPANSION THROUGH FULL ECOSYSTEM SOLUTIONS

GaN SAM rapid growth*1

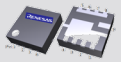


HV/LV GaN revenue



Growth drivers

Strong GaN foundation and expanding



- Leading 650V d-mode, high power technology
- Vertically integrated – own Epi and process
- Expanding with 40-200V LV GaN e-mode
- Optimized packaging, superior thermals

System solution for best customer experience

- GaN-optimized IC controllers & drivers
- New topologies - GaN BiDirectional switch
- Solutions with SiPs, power stages and reference design across all power ranges

Scaling to 8-inch manufacturing

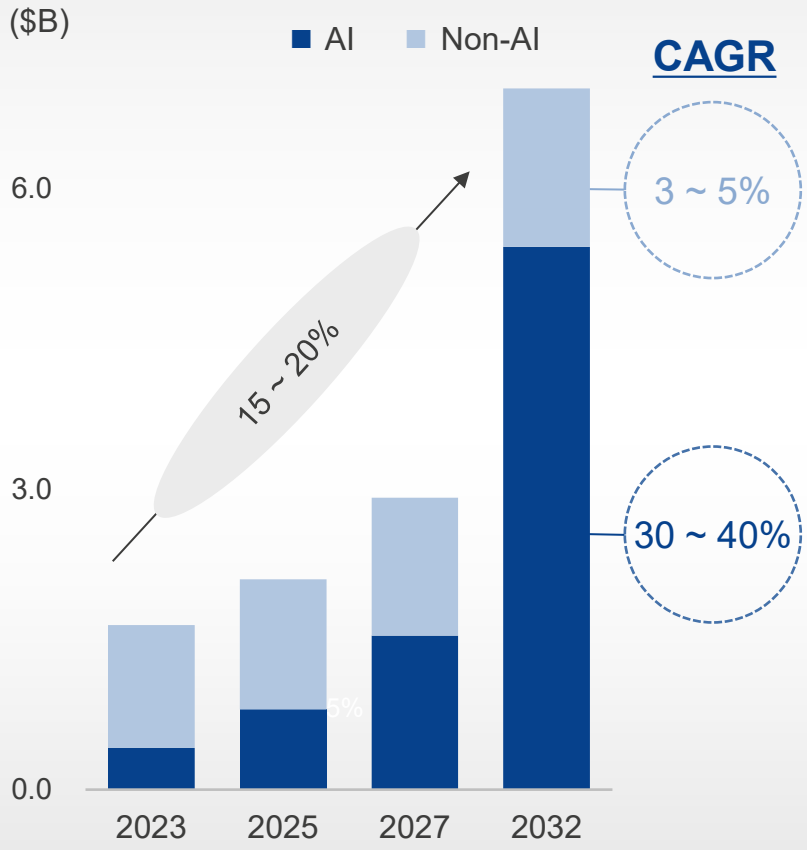
6” → 8”

- High quality 6-inch manufacturing today
- 8-inch ramp - licensing and supply agreement with US partner (2027)
- LV GaN with external foundry and internal IP

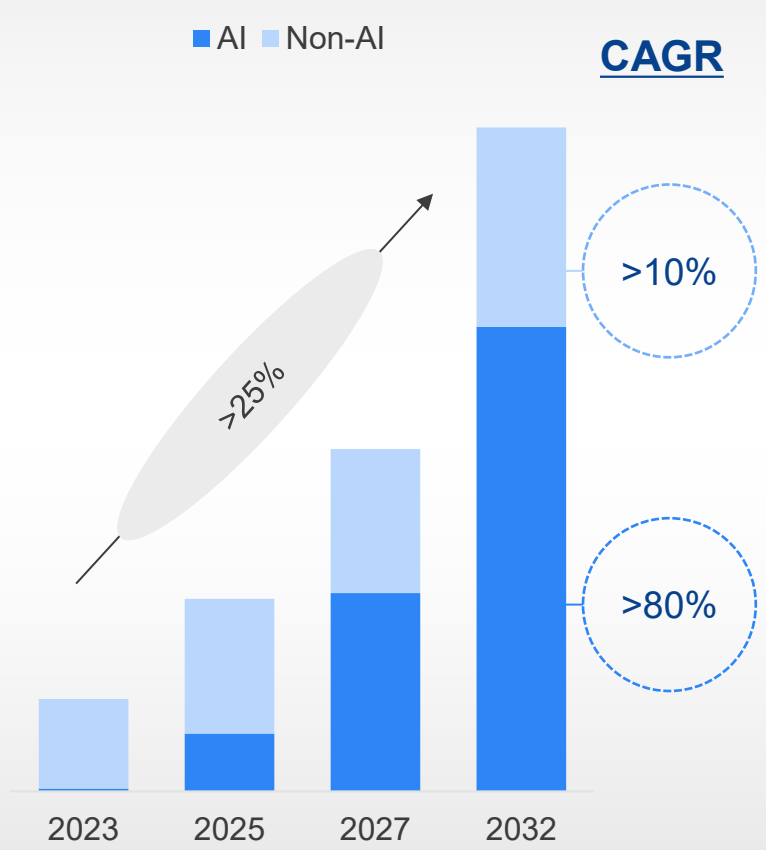
*1: Source: Yole, Renesas analysis. HV GaN: >600V LV GaN 40 ~ 200V

AI DRIVING RAPID GROWTH IN A DIVERSIFIED INFRASTRUCTURE POWER BUSINESS

Infrastructure power SAM*1



Infrastructure power revenue



Growth drivers

Non-AI infrastructure:
A large and diversified business where we are gaining share in core power and growing with healthy margins

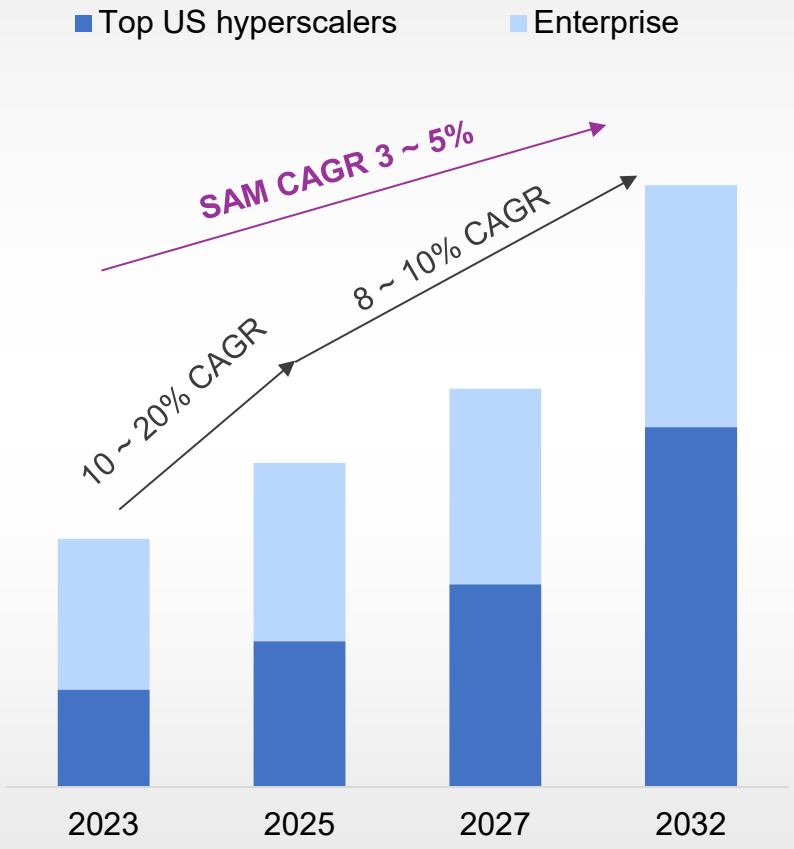
AI infrastructure:
Rapid growth in core power content, system unit volumes, and shift to higher-ASP products

Richer solutions:
Expanded product offerings in complementary areas that increase our content per system

*1: Source: Renesas analysis

OUTPACING INDUSTRY GROWTH WITHIN NON-AI INFRASTRUCTURE

Non-AI infrastructure revenue*1



Robust growth in a large, diverse customer base in non-AI infrastructure due to:

- Core Technology: digital controllers, Power Stages, MOSFETs, ICs
- Proprietary software and tools that accelerate customer design cycles
- Supplier consolidation
- Expanding product portfolio

Gaining share with all major Hyperscalers

- ~20% YoY revenue growth (2023~2025)
- Designed into all next-gen systems at top Hyperscalers
- Winning in x64, Arm, and networking platforms

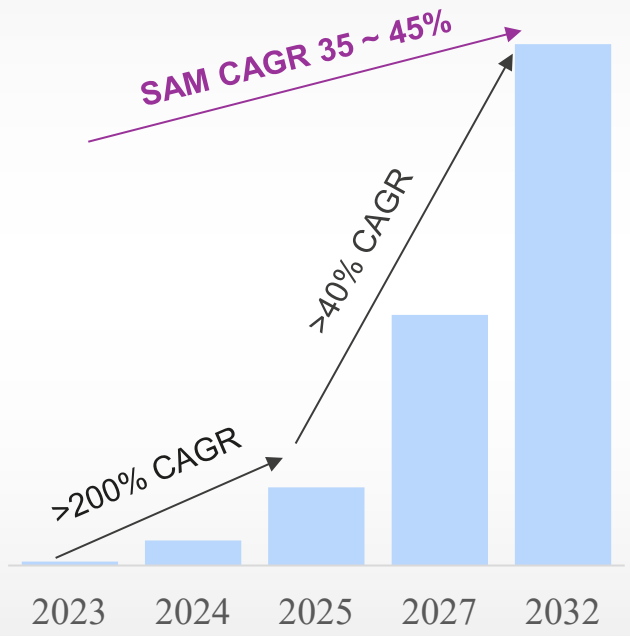
Succeeding in enterprise, networking and Telecom clients

- ~10% YoY revenue growth (2023~2025)
- Ramping in next-gen systems at all top server OEMs, capturing major market share and expanding in networking and telecom

*1: Source: TrendForce, Renesas analysis Note: The Non-AI infrastructure market includes servers, data networking, and telecom equipment that do not adopt modules.

CAPITALIZING ON AI MOMENTUM WITH MODULE AND SYSTEM POWER TOTAL SOLUTIONS

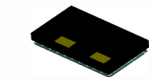
AI infrastructure revenue*1

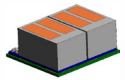


Investing and ramping AI-tailored products for GPU, TPU, and custom AI SoCs

- Core power remains solid backbone powering AI revenue growth: Digital controllers, Power Stages, MOSFETs, ICs
- Building on existing relationships with leading GPU provider and Hyperscalers
- Adding high density modules and vertical power solutions
- Winning and co-developing with key AI cloud players and Hyperscalers

Relative density	1.0	1.2	1.2~2x	3.0+
	Standard smart power stage 2009-present 1x ASP	Dual smart power stage >1.5 x ASP	High density module: Integrated power stage > 3x ASP	High density module: Quad-Phase power tower > 8x ASP





Driving rapid market adoption through an innovative 48V solution

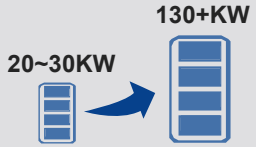
- The first and the only proven onboard, cost-effective 48V solution, winning at majority of Hyperscalers and 3x 2023 to 2025

Expanding product portfolio to provide one-stop system solution

- Total solutions in development covering Point of Load and e-Fuse
- Leveraging GaN / Ecosystem and BMS for complete system coverage

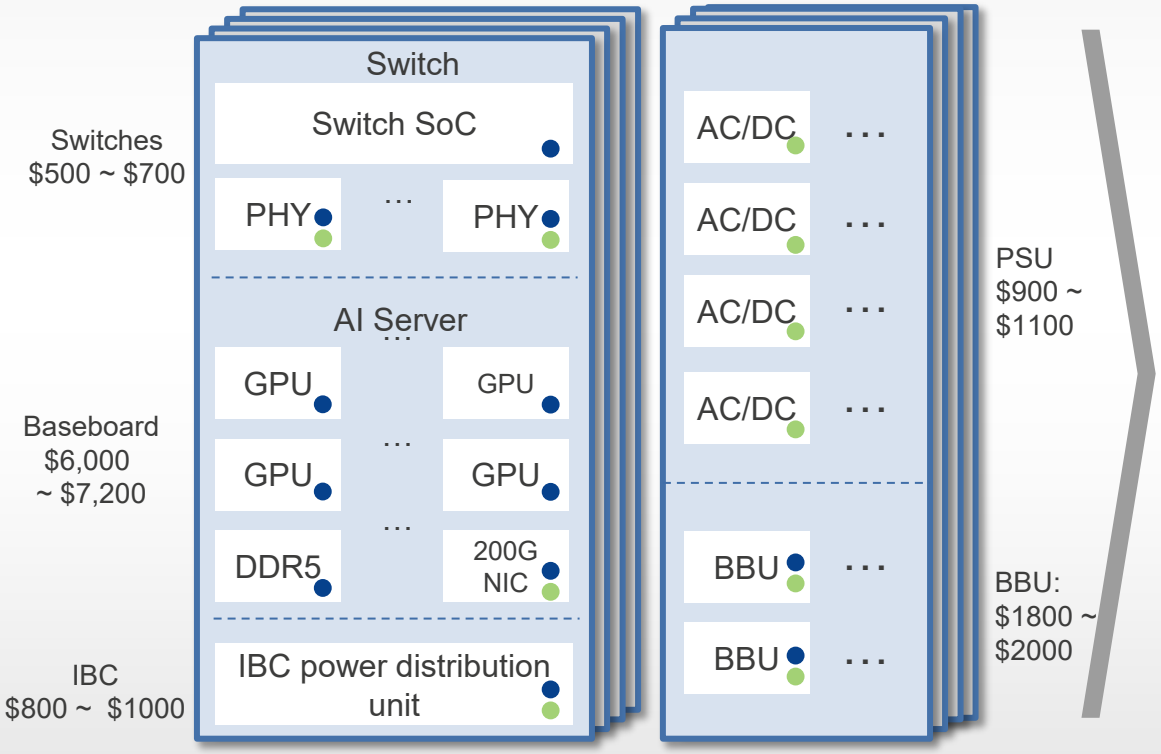
*1: Source: TrendForce, Renesas estimate

POWER PORTFOLIO ADDRESSING GROWING OPPORTUNITY IN AI

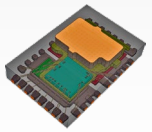


Server power consumption has surged from 20–30kW to 130kW+ due to GPU demand, leading to high-voltage bus and side car rack for AC/DC conversion to trend up to 1MW

$10k-$12k Power content per 130kW+ rack



Renesas existing products & content



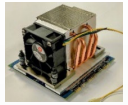
4th gen digital multiphase (DMP) controllers
3rd gen smart power stages (SPS)

48V HSC IBC

Vertical power
high density modules

DDR5 PMIC

16s BMS solution

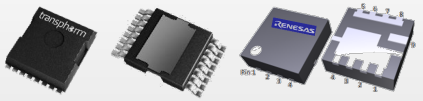


Proprietary
test tools

Performance
optimization
software

Digital controller +
SPS as software-
enabled system

Renesas new products & opportunity



GaN FETs

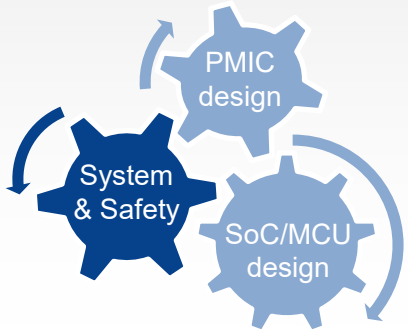
Point of load , e-Fuse
MOSFETs, Controllers & Drivers

PHY: Ethernet Physical Layer

POWERING RENESAS AUTOMOTIVE EMBEDDED SYSTEMS
WITH AN OPTIMIZED & SCALABLE AUTOMOTIVE PMIC PORTFOLIO

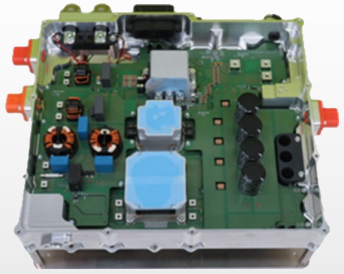
Renesas embedded systems advantages

- Leverage large and expanding SoC/MCU footprint. Co-development for seamless system integration
- Functional safety included at start simplifies customer design process
- Established reference designs and proven reliability reduces risk and time-to-market



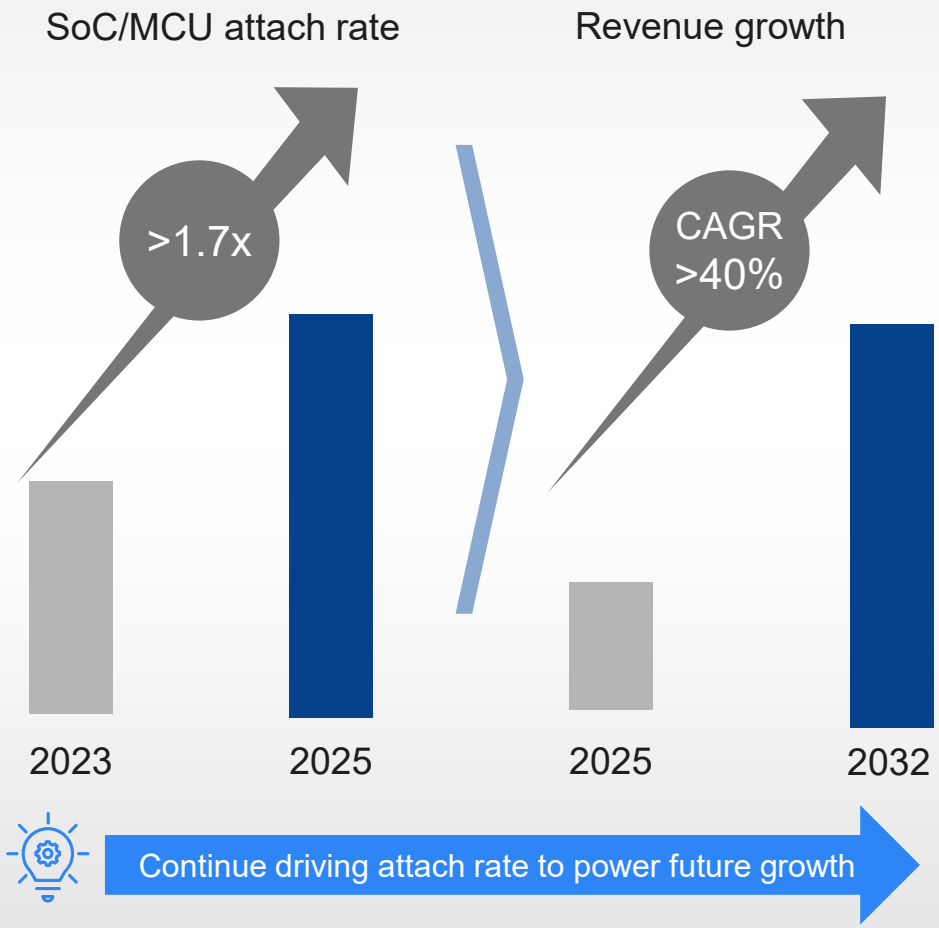
Proven market traction

- First winning combination released Dec 2024, shipping 1Mu+ in 2025
- 500+ projects with 8+ OEMs & 100+ Tier-1s
- Numerous applications: ADAS central compute, Cockpit, BMS, Zone controller, Domain controller, Inverter, xEV X-in-1 (Inverter/BMS/OBC/DCDC)

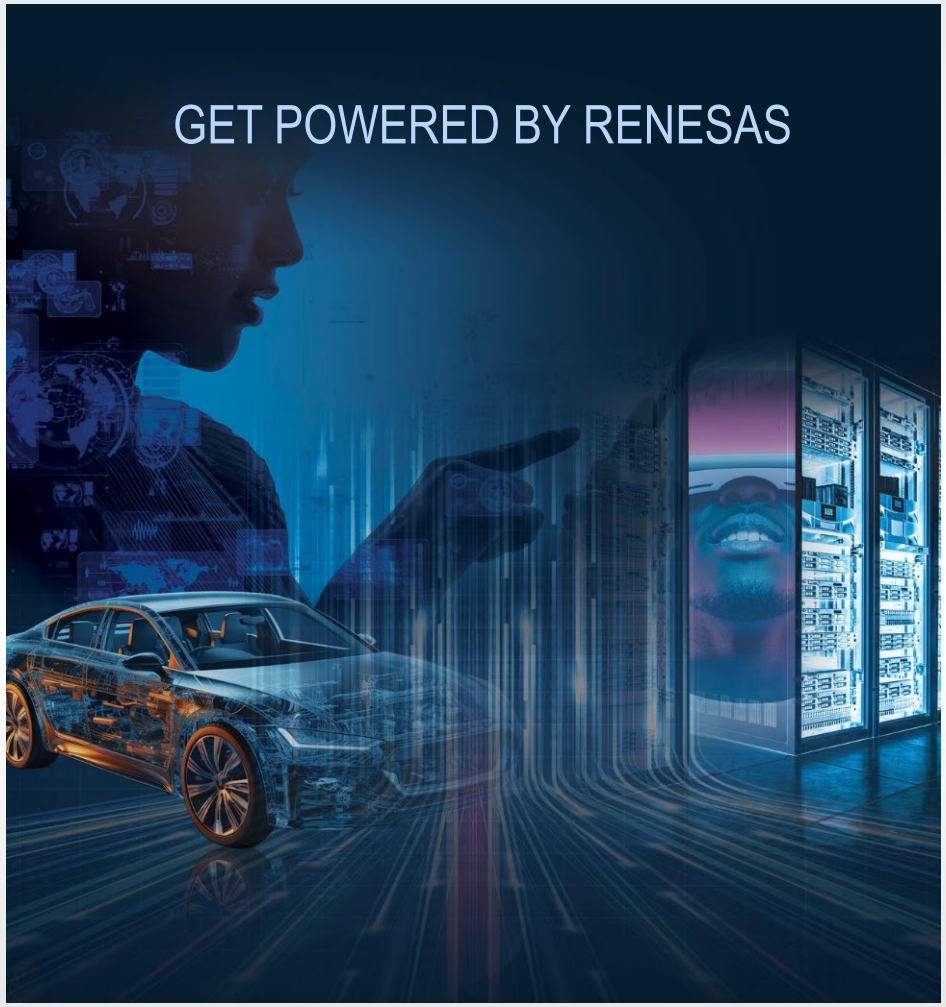


1 MCU (RH850) + 1 PMIC (RAA271084)

Attach rate and revenue growth



SUMMARY



- Comprehensive power portfolio and strong IP serves as a solid foundation for scalable and rapid growth
- Targeted high-growth verticals and digital attach strategy to drive diversification and sustainable, broad-based growth
- Accelerated growth fueled by the momentum in AI - infrastructure
- GaN driving high voltage, high power business. Capitalize on Infrastructure & Automotive content expansion
- Hyper-focus on solution selling into Renesas existing footprint of digital, analog, connectivity and power products

THANK YOU