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OTCQX: TGAN

Leading the GaN Revolution

Quarterly Business Update

February 9, 2022

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Highest Performance, Highest Reliability GaN

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Pioneer & Leading Provider of GaN Power Semiconductors

OTCQX: TGAN

Goleta, CA (2007)

> 1,000 Patents

Vertically Integrated
(design, EPI, process, manufacturing)

$21.5M Revenue
(ttm ended Dec '21)

Best-in-Class GaN Products and Reliability

- **Comprehensive 650 V portfolio; 900 V devices with widest breadth of packaged GaN devices available**
- **First JEDEC, AEC-Q101 650 V devices, > 30B operating hours; < 0.3 failures per billion hours**
- **WW base, > 100 Employees (18 PhDs, >300 Yrs GaN)**

Partnerships Driving GaN Adoption

KKR, YASKAWA, nexperia, Microchip, Marelli, SAS 中美矽晶製品股份有限公司 Sino-American Silicon Products Inc., Silanna Semiconductor, DIODES INCORPORATED

In Production and Design-Ins for Diverse Market Applications – 8 Quarters of Product Revenue Growth

Adapters and Computing

Crypto-mining, Datacenter

Industrial and EV Mobility

Targeting $3 Billion Power Market Opportunity in 2023

Upside to TAM from Electric Vehicle Powertrain Starting in 2025

End Market Applications and GaN Benefits

Near Term

Long Term

Power Adapters | Compute

- Fast Charging
- Lower thermals/improved power density/smaller form factor
- Lower system cost

Data Center | Comm Infrastructure | Crypto-Mining

- Ability to double available power in standardized server and 5G telecom form factors
- Enable Ti-class efficiency EU requirement

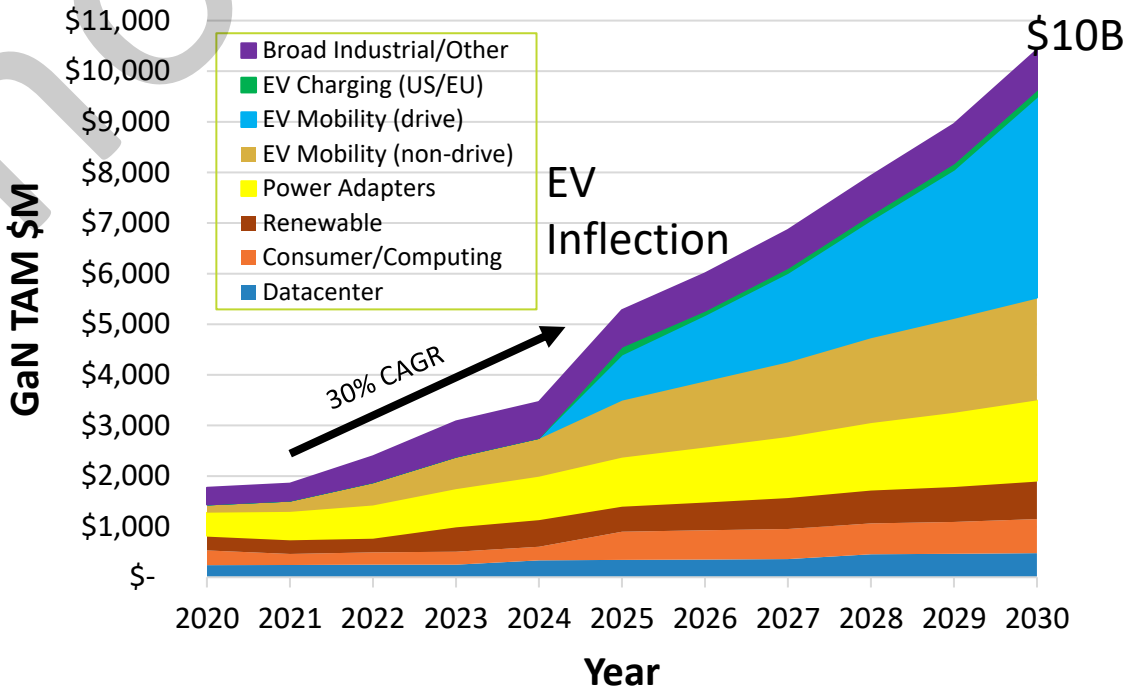
Broad Industrial

- Reduces size/weight of systems
- More efficient charging for battery and/or battery-powered equipment and vehicles

Automotive EV and Charging | + EV Powertrain from 2025

- Reduces size/weight of on-board chargers, power converters and power inverters
- Resulting in longer distance per charge

GaN TAM: Total Addressable Market for GaN(1)



GaN TAM > $3B in 2023, breaks out in 2024-25 based on EV Mobility Opportunities

Notes:

1) Sources: IDC (Data Center / Comm Infrastructure); Counterpoint Research, Mordor Intelligence (Power Adapters / Compute); Yole, IHS (Broad Industrial); Department of Industry, Innovation and Science (2019) (Automotive). TAM values are then calculated based on available technology, competition and value add to market.

Delivering Superior ROI for Customers

Transphorm wins by taking the Intrinsic Benefits of GaN to the Next Level

Intrinsic Benefits of GaN

	Transphorm Advantage
Performance	• Field-proven best-in-class efficiency • Demonstrated over wide power levels
Quality & Reliability	• JEDEC + AEC-Q101, best-in-class robustness • <0.3 FIT | > 30B hours
Volume production Capability	• In-house GaN supply, vertically integrated value chain • Capacity to support higher unit volumes
Comprehensive Product Portfolio	• Products span low-to-high power, 30W to 10kW • Only company with 900V GaN, 1200V in R&D
Ease of Drivability and Design-in	• Compatibility with standard Silicon Driver/ Controllers • Growing number of reference designs and IC partners
Patent & IP Coverage	• Industry's strongest GaN IP position with >1K patents • From material and process to design and application

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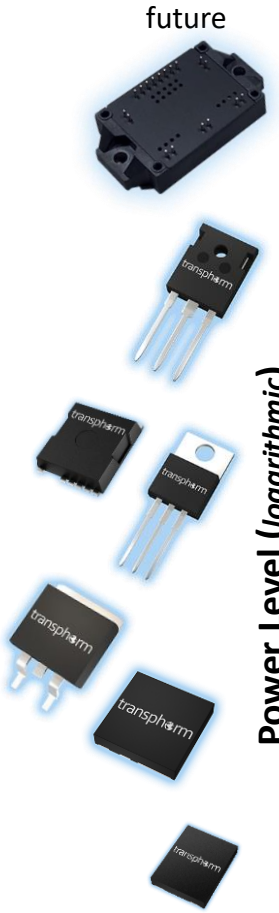
SuperGaN™

Faster, Smaller, more Efficient and Robust Solutions

Comprehensive GaN Product Portfolio: 30 W to 30 kW

Wide Breadth of 650V to 900V and JEDEC through AEC-Q101 Qualified



- These systems need power semiconductor devices for operation
- Traditional systems used Silicon devices (MOSFETs, BJTs, IGBTs etc.)
- New generation of efficient and compact systems migrating to GaN devices

Power Level (*logarithmic*)

100 kW

10 kW

1 kW

100 W

10 W

Wall Plug Adapter

Fast/Other Charger Adapter

Servo Motor Drive

Consumer/ Computing PSU (gaming)

Electric 2/3 Wheelers, Charging

Server, Mining Telecom PSU UPS

DC-DC On-board Charger

Drivetrain Inverter

Dispelling Market "mis-information" for GaN

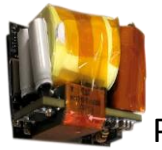
TGAN - Faster, Smaller, more Efficient and Robust Solutions vs. Si and other GaN

Market Misinformation Clarified: "IC" or Discrete Integrated or Other – Performance/Reliability/Cost is what matters

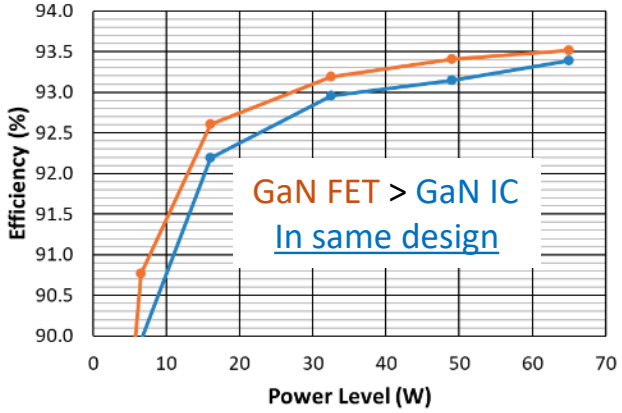
1. **Normally off: "E-mode/D-mode"** – **Fact**: Customer/Application demands normally off Transistor (many ways)
2. **Higher performance** – **Fact**: From intrinsic GaN device. TGaN FET 93.5% vs. GaN "IC" 93.3% (same 65W Adapter)
3. **High speed switching** – **Fact**: Any well designed GaN capable of high speed (nature of GaN)
4. **Higher frequency, MHz plus** – **Fact**: GaN FET 99% 1 MHz, 1kW operation verified. System level criterion
5. **Drivers/Integration** – **Fact**: Modern controllers have drivers integrated (free), especially for Adapter/Chargers areas! TGAN FET – No extra driver or interfacing need

Key Factors: Why We Win (All solutions are normally off)	Transphorm GaN FET	Silicon MOSFET	e-mode GaN
Ease of use (std. drivers, agnostic to controllers)			
Size (form factor) and Speed (frequency)			
Performance (efficiency)[1]			
Added BoM components (cost)[2]			
Reliability and Robustness [3]			

[1,2]Based on multiple public and internal reference designs, https://www.transphormusa.com/en/reference-design/tsadp-sil-usbc-65w-rd/
[3]Impact of OFF-state Gate Bias on Dynamic R,on of p-GaN Gate HEMT (33rd ISPSD, 2021)



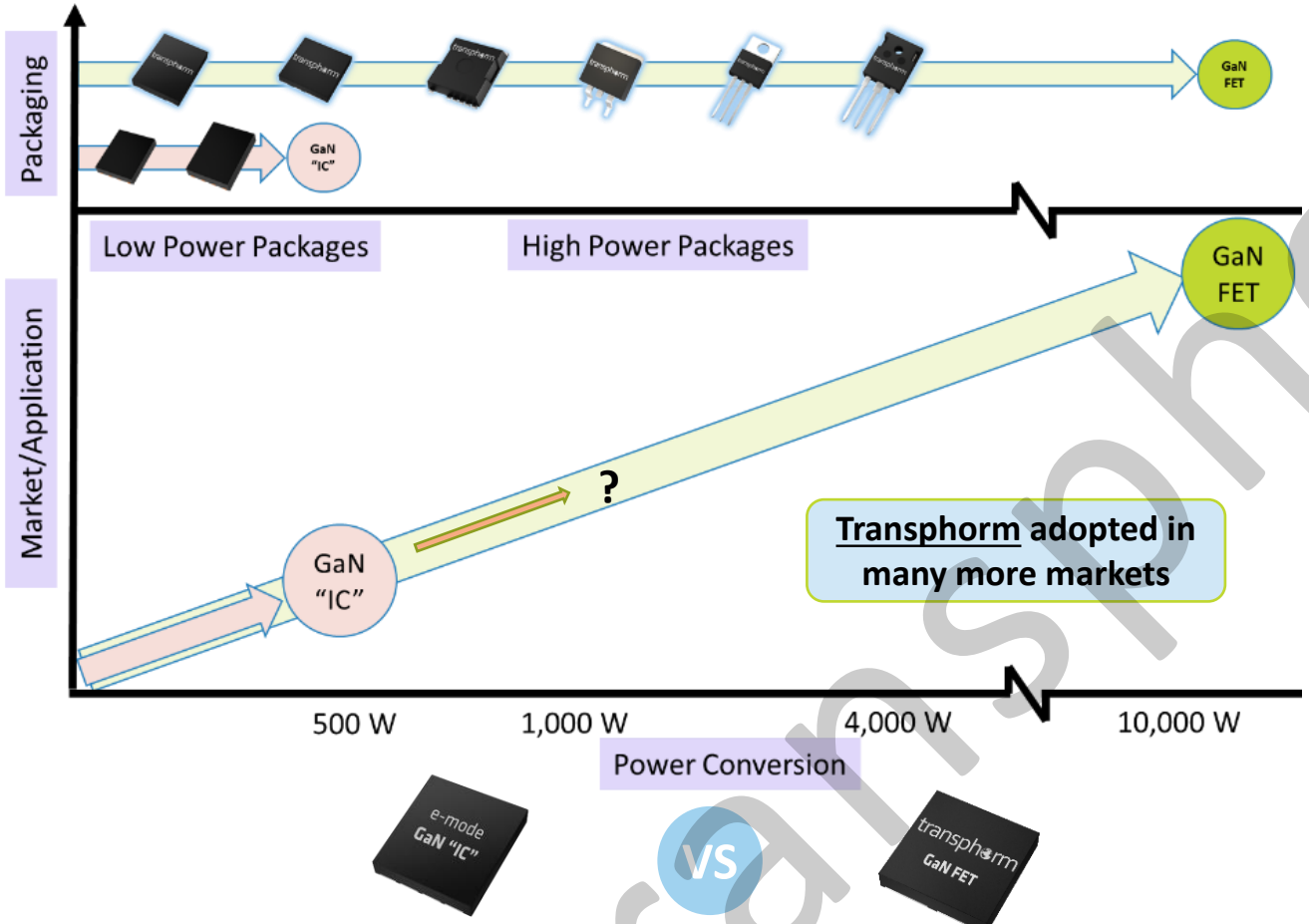
65 W USBC Adapter
Performance example



TGAN FET: Higher Range, Higher Reliability, Higher Performance

Other Types of GaN, e.g."IC" – today power limited (< 500 W)

Transphorm Offers Packages for ALL Power Levels



In Production[1]		
Markets	**GaN IC**	**GaN FET**
Adapters	✓	✓
Datacenters	✗	✓
Gaming (desktop)	✗	✓
Crypto mining	✗	✓
Industrial (≥ 500 W)	✗	✓
Aerospace	✗	✓

[1]Based on our best knowledge of released products and in production with customers' systems

Why Transphorm Wins:

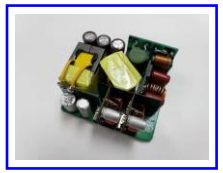
1. **"E-mode" input (p-type gate) is weaker – hard to operate in widely used TO Packages for higher power**
2. **Superior Dynamic performance from TGAN FET – Strong performance, from smaller GaN die**
3. **Proven reliability & manufacturing for scaled device – 10 kW capable single GaN device in production**

TGaN Compatibility with Integrated Driver/Controllers Expands Partnership Space in 45-250W Solutions

4 New Reference Designs/Solutions Rolled Out – Now through 250W Adapters

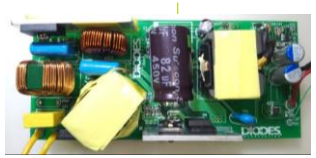
Design Company, Topology, and Power Density														
45 W			**65 W**			**90 to 110 W**			**120 to 150 W**			**200-250 W**		
Design	**Topology**	**W/in³**	**Design**	**Topology**	**W/in³**	**Design**	**Topology**	**W/in³**	**Design**	**Topology**	**W/in³**	**Design**	**Topology**	**W/in³**
transphorm	QRF	24	transphorm	QRF	25	transphorm	PFC+QRF	18*	DIODES	PFC/LLC	16	transphorm	PFC/LLC	25 (PCB)
External and In-wall			Silanna	ACF	30	Silanna	ACF	20	New	PFC/LLC	15*	New	PFC/LLC	15*
Supported by partners			DIODES	ACF	30	DIODES	ACF	20	Supported by partners			Supported by partners		

New



100W

New



150W

New

240W

New

* Including full casing

Expanding Adoption in Adapters and Fast Chargers: >50 Design-ins/Wins

Adding Key ODM and Leading Brands-based Designs

Example Recent Wins Growing in 100-250W

Ultra slim, light weight (65 W)

Compact, high efficiency (68 W)

Quick Charge-5, USB C PD (100 W)

Compact Power Bar, 65W 1A-1C

Compact 100W 2C-1A

High-efficiency (65 W)

Wall plug – high efficiency, compact (35 W)

Note book – small size, 200 KHz high speed (160 W)

Compact 30W Power Bar

Multi out 150W (2C-1A)

Compact, 65W, Type A

Ultra compact 240W

Compact, efficient USB-C (65W)

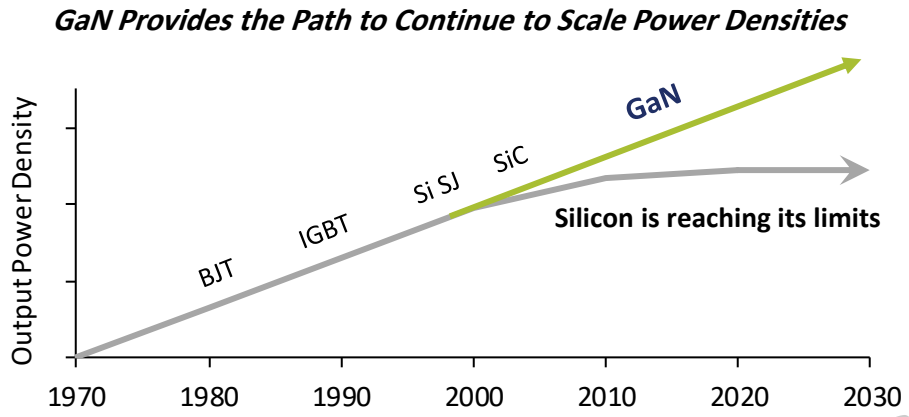
40% more compact (65W 2C)

Multi out 250W (2C-1A-Axial)

Proven Performance for Higher Power

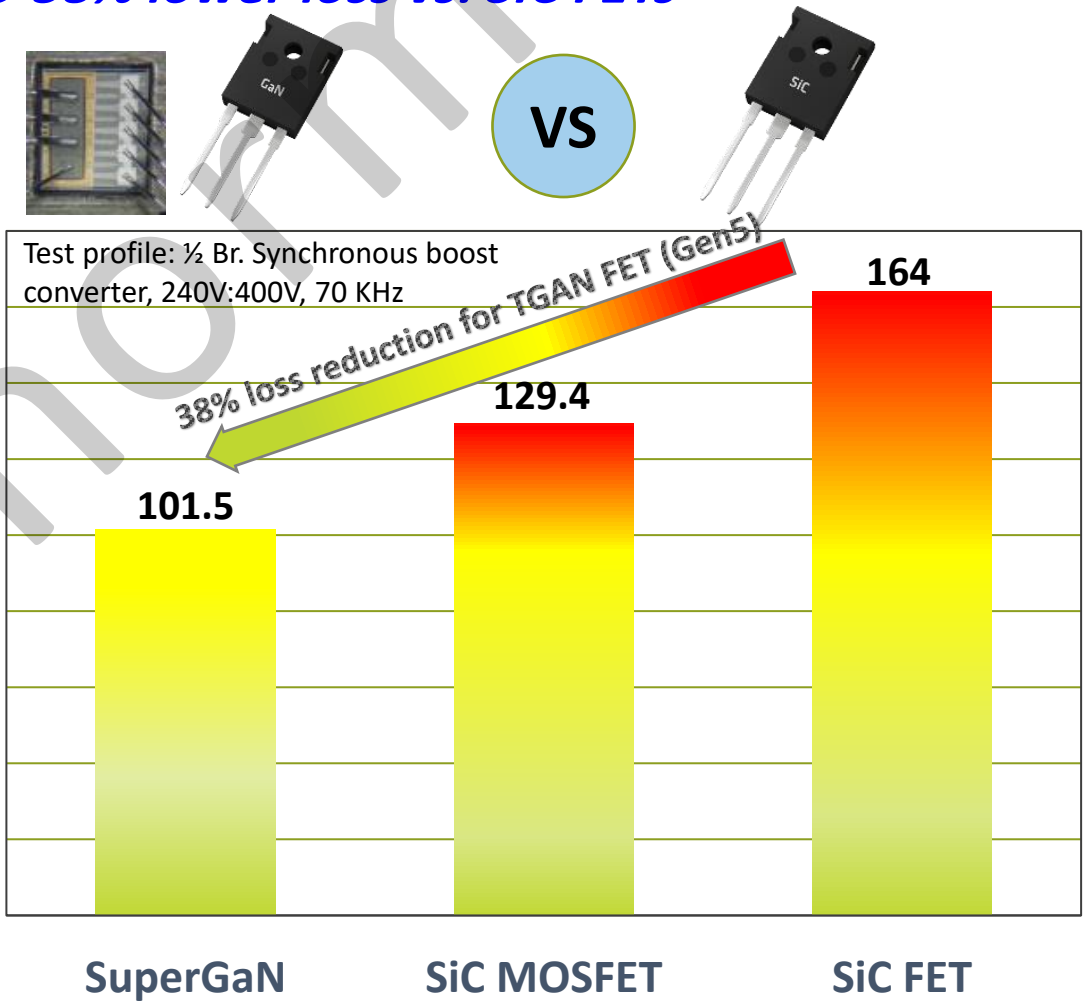
Industry Leading Transphorm GaN: 25-38% lower loss vs. SiC FETs

"Moore's Law" for Power Electronics



Why GaN and Transphorm Wins:

1. **Performance:** High speed GaN offers higher efficiencies with lowest losses in power conversion at any voltage range (vs. Silicon and SiC)
2. **Cost**: GaN on Silicon wafer with manufacturing compatibility with Silicon infrastructure offers superior cost opportunities
3. **Reliability:** Gen4 from TGAN Auto AEC Qualified, Gen 5



Device Power loss comparison at 9.2 kW in a standard half-bridge circuit configuration

GaN: Faster Speed / Higher Efficiency / Low loss

Continued Leadership in Higher Power GaN

Efficient, Reliable, High Performance, Patented GaN Architecture

Crypto-Mining – Systems requiring Titanium efficiency

Highly Efficiency

Highly Reliability

- Power hungry – consumes ~120 TWHr, equivalent to small country
- TGAN solutions can enable up to 1% higher efficiency at 230V AC **(>200 lbs of CO_2 emissions / TGAN Device[1])**

Gaming Power – Compact and Efficient

The Corsair AX1600i is the **best PSU** that money can buy today, period."

tom's HARDWARE

- Higher power in smaller form factor – Faster switching, less components
- 99% efficient front-end stage, less heat
- **Cost parity with Silicon based systems**

Data Center Server Power – Titanium performance for > 3 years now

80 PLUS TITANIUM

"Transphorm's GaN within a totem-pole PFC configuration proved the **most reliable**, highest performing solution possible today," bel POWER SOLUTIONS & PROTECTION

- 5 MW Data center, **$103K saved / year, 397 tons reduced carbon footprint** (2)
- Regulations like EU Ecodesign[3] in 2023 expected to accelerate GaN adoption

Industrials, Energy, E-mobility, Aircraft power, Military

Industrial Power

Military high-rel

Aircraft: in-cabin PSU

- Adoption driven by > 30 billion hours of field reliability with < 0.3 FIT

"Ease of drivability and designability—does not require custom drivers. Proven reliability — JEDEC and AEC-Q101"

AES

Notes:
1) EPA estimated one kWh produces 1.52 pounds of carbon dioxide (excl. line-losses).
2) Based on company estimates done for a 5MW data center.
3) European Union's Ecodesign Directive (Directive 2009/125/EC).

GaN Enables Future of Next-Gen Electric Vehicles

Increased Driving Range, Faster Charging

EV challenges for existing Silicon-based solutions

- Slower Charging
- Power Loss
- Heat Constraints
- Limited Driving Distance

→ Higher Cost & Power Demand

Transphorm Gen IV 650V 35mΩ GaN FET

- Automotive qualified (AEC) today

- Charger / Converter / Inverters for EVs
- Staying ahead: R&D for 1200V with GaN for higher battery voltage EVs (Taking on SiC higher Voltage FETs)

Future of EV with GaN-based solutions

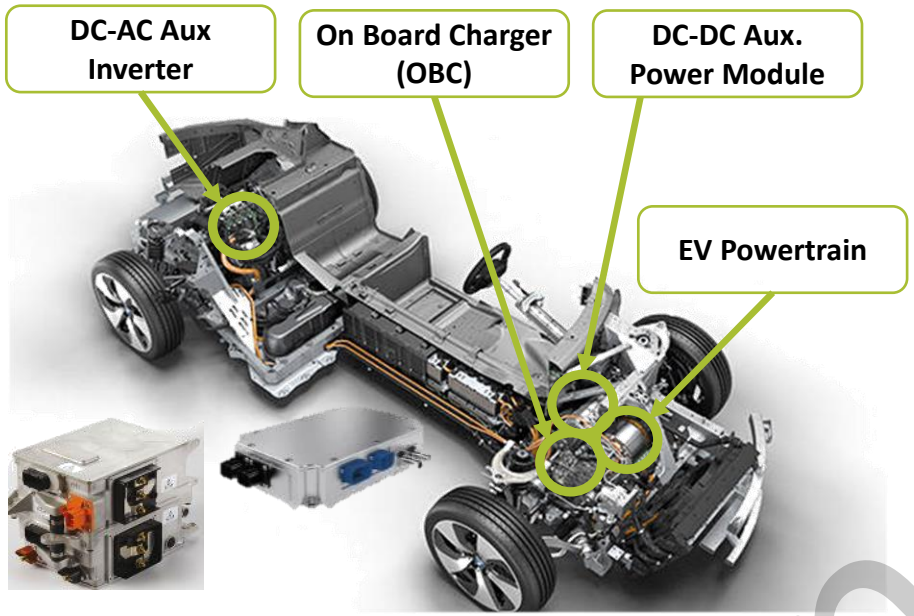
GaN-enabled Power Solution Benefits:

- Faster Charging
- Less Power Loss
- Reduced Size & Weight
- Farther Drive Range

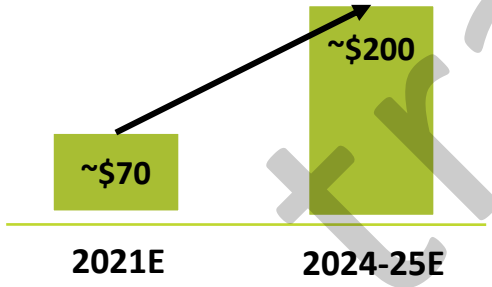
Accelerating Opportunity for GaN Enabled Power in EV

Transphorm GaN AEC-Q101 Qualified NOW

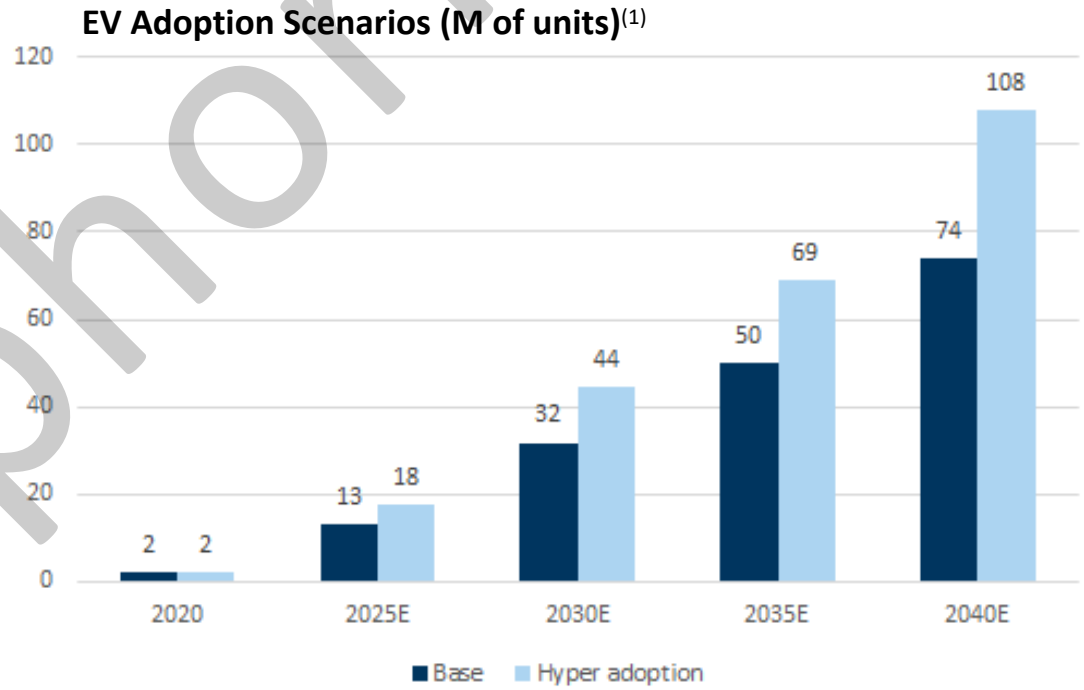
GaN Opportunities in EV



GaN $ Content/EV(2)



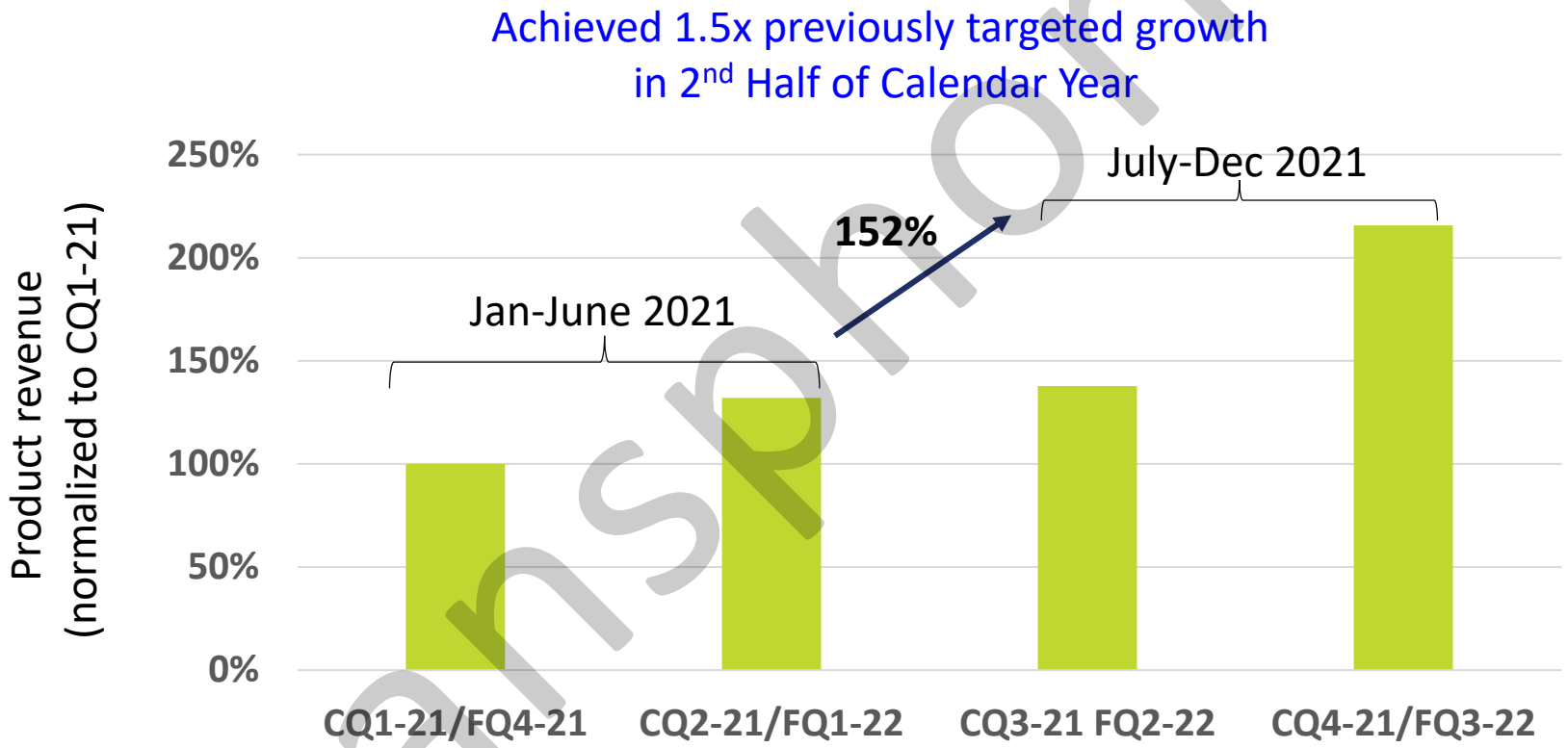
Accelerating EV Opportunity



Well positioned for automotive opportunity with leading products, strategic partners

(1) IHS and Goldman Sachs Global Investment Research
(2) Transphorm company internal estimates

Ramped Product Revenue Growth in Calendar 2021



Maintaining dominance in higher power markets (1-5kW segment) and increasing design-wins in Adapter markets including 1 million adapter units shipped in Dec' 2021

Key Business Focus – Scaling Product Revenue

8th Consecutive Quarter of Record Product Revenue - $3.6 Million in CQ4'21

Key focus area	Metric Achieved	Comment / Looking ahead
1. Revenue, Products	✓ **$3.6m** (total **$4.6m**)	• 8th sequentially higher Quarter
2. Adapters/Chargers: Design-ins, Production, Solutions (45W – 250W)	✓ Design Ins: **>50** ✓ In Production: **>20** ✓ Solutions/Ref designs**: >12**	• Expanding in 100-250W area (superior TGAN performance) • Expanding due to easy to interface FET, no external gate driver needed
3. High power Design-ins, Production, Ref. Designs (300W-4kW)	✓ Design Ins: **>30** ✓ In Production: **>15** ✓ Eval kits/Ref designs: **>5** (1-4kW)	• Added in gaming, energy, TV power (large OEM), E-mobility • Maintain TGAN dominance
4. Product SKUs and Qualification	✓ Total: **17** (AEC qualified: **3**)	• Broad offering, 650V/900V, PQFN, TO220, TO247 (not readily doable with weaker E-mode GaN) • Additional offerings in 6 months
5. Capacity proof points	✓ **1m** Adapters (PQFN pkg) ship in Dec, two packaging sources in place	• Now focus on Supply chain management for 2022 • Expansion for end 2022-2023 to handle strong demand (5m-10m adapter units / month equivalent)

Focus on Product Revenue Growth, Supply Chain and Expanding Capacity

Key Business Update – Strategic Partnerships

Overall on Track, Started SAS Project for Capacity Expansion

Manufacturing, Capacity Increase Partnerships:

- **Global Wafers (new)** – Initiated joint activity for epiwafer expansion (completion, release in 2023)
- **AFSW Fab** (Transphorm's JV) – Managing with GaNovation (Financial-Strategic partner) and planning for increases in calendar 2022 to be ready for anticipated higher ramps

Industrial and Automotive

- **Yaskawa** (Industrial) – Working through development milestones, CQ4 R&D deliverables => CQ1, cash payment expected in CQ1. No overall program impact. Focus: Cost-effective GaN for Servo/Robotics
- **Nexperia** (Automotive focus) – Continued epi and fab wafer supply, Next milestone Gen5 AEC qualification
- **Marelli** (Automotive) – Targeted product development phase, with Gen IV/Gen V: Charger/Converter, Inverter (TGAN technology today is good enough for 50kW prototype inverter designs already)
    - Continuing design-ins with other Japan EV, for 2023-2024 dc-dc/obc opportunities

Government Revenue and Epi Business

- **Epiwafer Sales (RF)** – Continued DoD epi-sales activity, 2 commercial design-in's in progress
- **Navy and Govt. Programs** – On track, $1m in FQ3'21. Epi for RF (Navy, DARPA), 1200V R&D (ARPA-E)

Recent Company Key Announcements

#	Key Recent Milestones (CQ4'21 and Jan'22)	Impact
1	Yaskawa Convertible to Equity (Oct)	$15.6M note converted Strong industrial partner support
2	Gen 4 AEC Qualification (Nov)	Automotive Qualification (OBC/dc-dc product) Marelli and other customer activity boost
3	Diodes Inc. 130W high power adapter design release with TGAN FET (Nov)	Proof point for TGAN FET ease of use vs. others Accelerate market penetration
4	$33M Equity Investment and SAS/Global Wafers Partnership (Nov)	Strengthens balance sheet Faster scaling of epi-wafers, expand revenue growth
5	$12.9M Equity Investment (Dec)	Strengthen balance sheet Asia relationships
6	1 million adapter units shipped (Jan)	Validates success in Adapters Capacity proof point

Transphorm Inc.
Leading the GaN Revolution

Financial Update

February 9, 2022

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Highest Performance, Highest Reliability GaN

Financial Highlights

Record Product Revenue, Strong Cash Position, Improving EPS

Income Statement

- **Revenue - $4.6m** *(y/y up 129%)*
  - 8 quarter product growth
  - Product revenue growth 220% y/y
  - Traction across several market segments
- **COGS - $3.9m** *(y/y up 103%)*
  - Volume, staffing driven
- **NON-GAAP OPEX - $4.5m** *(y/y up 20%)*
  - OPEX flat to Q2
  - Sales/Apps team growth
- **NON-GAAP EPS ($0.09)** *(y/y was ($0.13)*

Balance Sheet

- **Assets $55m** *(vs. $14m at Sept 30)*
  - $41m cash balance driven by raise activity
    - Strategic/Institutional combination
  - Inventory growth to support revenue
- **Liabilities $18.6m** (vs. $34m at Sept 30)
  - $15m Yaskawa Loan conversion to equity
- **S/holders' equity $36m** (vs. $20m at Sept 30)
- **Positioned for NASDAQ**

Transphorm Positioned to Grow across Multiple Segments, including Consumer, Data Centers, Automotive, Epi and Industrial

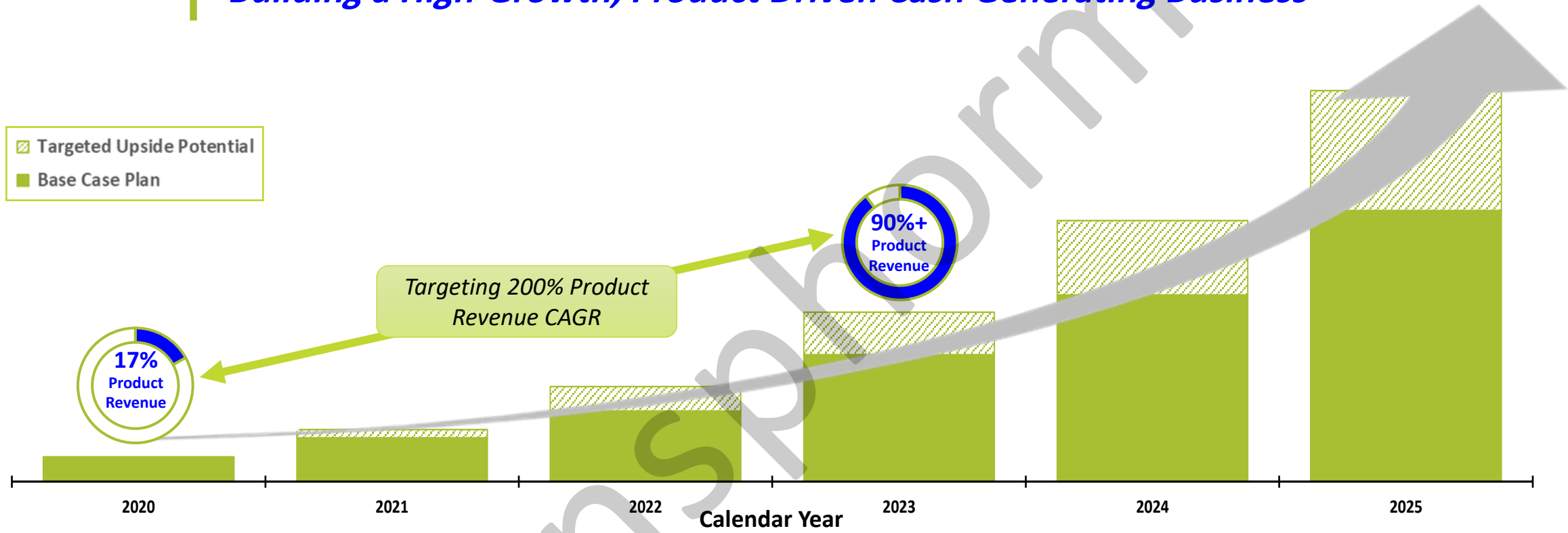
5G Market Adoption

Electric Vehicle (EV) Market Adoption

Adoption/Growth	Execution	Target Model
Today	To 2023	2024 +
• Multiple revenue streams in place • Growing production traction across multiple segments • Shipped > 1M units in December 2021 • Continued investment in growth across all aspects of the company • Invest in capacity increases	• Broad market inflexion point • Ramping revenue across consumer, Data centers and crypto segments • Initial revenue in Automotive segment with existing customers • Continued Government contracts	• Continued momentum and broad market expansion • Automotive adoption growth • Leader in EV, Consumer and RF Epi segments • Positive cash generation • Execute to Target model

Long-Term Growth

Building a High-Growth, Product Driven Cash Generating Business



Operating Guidelines

- Rapid top-line growth and GaN adoption across multiple end markets
- OpEx for continued development of best-in-class products and IP portfolio
- CAPEX investment for increased scale

Target Model:

- 5-year CAGR range: **50%+**
- Gross Margin: **40%+**
- Operating Margin: **20%+**
- Free Cash Flow: **10%+**

Key Investment Highlights

Disruptive Technology
GaN enables next generation power conversion solutions in rapidly growing, significant markets

Commercially Ramping
Record product revenues, 1m units in Dec, set up for >50% revenue CAGR

Large Market Opportunity: Electric Vehicle and 5G
Transphorm's GaN Solutions will Enable the Future of Electric Vehicles and fast-charging for 5G

Best-In-Class GaN Technology and Industry's Strongest IP Position
IP portfolio appraised in excess of $200M

Validation From Blue Chip Partners and Customers
Including KKR, Marelli, Yaskawa, SAS, Nexperia, Microchip, Diodes and the U.S. Department of Defense (Navy)

Publicly Traded GaN Company
OTCQX: TGAN

Team Led by World-Renowned GaN Experts
18 PhDs and over 300 Years of GaN Expertise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