Ideal Power

Nasdaq: IPWR

Global Leader in Ultra-Low Loss
Bidirectional Power Semiconductors

Investor Presentation

July 2025

Safe Harbor

All statements in this presentation that are not based on historical fact are "forward looking statements." While management has based any forward-looking statements included in this presentation on its current expectations, the information on which such expectations were based may change.

These forward-looking statements rely on a number of assumptions concerning future events and are subject to a number of risks, uncertainties and other factors, many of which are outside of our control, that could cause actual results to materially differ from such statements.

Such risks, uncertainties, and other factors include, but are not limited to, whether the patents for our technology provide adequate protection and whether we can be successful in maintaining, enforcing and defending our patents, whether demand for our products, which we believe are disruptive, will develop and whether we can compete successfully with other manufacturers and suppliers of power semiconductor products, both now and in the future, as new products are developed and marketed.

Furthermore, we operate in a highly competitive and rapidly changing environment where new and unanticipated risks may arise. Accordingly, investors should not place any reliance on forward looking statements as a prediction of actual results. We disclaim any intention to, and undertake no obligation to, update or revise forward looking statements.

Ideal Power

Investment Highlights

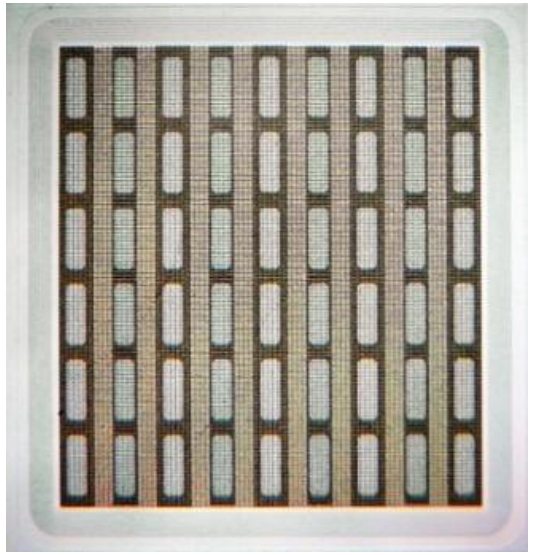
- √ B-TRAN® disruptive semiconductor power switch with compelling advantages over conventional power switch technologies
- √ Uniquely positioned to displace conventional power semiconductor solutions in many large, growth markets – solid-state circuit breakers (SSCBs), renewables, energy storage, EVs (contactors, drivetrain inverters and charging), data centers and motor drives
- √ Asset light, fabless business model leveraging existing silicon processing infrastructure
- √ Initial sales of B-TRAN® discrete, SymCool® power module and SymCool® IQ intelligent power module products to large, global customers
- √ Secured first design win for SSCBs
- √ Ongoing development program with Stellantis, a top 10 global automaker, for custom B-TRAN® module for EV drivetrain
- √ Broad patent estate – 94 issued & 74 pending patents

Ideal Power

What is B-TRAN®?

B-TRAN® is a proprietary semiconductor power switch

- New, disruptive design (architecture)
- Fabrication on both sides of wafers
- Leverage same B-TRAN® die across many applications



B-TRAN® Architecture has 3 compelling advantages

- Bidirectional switching
- Lower losses = lower user costs
- Smaller, lower cost product designs

Critical performance characteristics validated through testing of hundreds of packaged devices

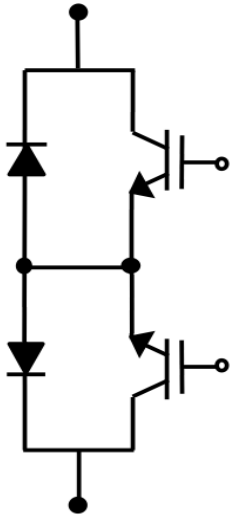
B-TRAN® addresses many power switching needs

Ideal Power

B-TRAN® Bidirectional Switching

B-TRAN® replaces 4 conventional devices to provide a bidirectional switch

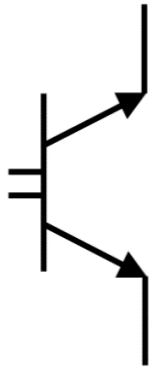
Conventional IGBT Switch



Back to back
1200 V IGBTs
plus series diodes

Typical forward drop
= 2.75 V

B-TRAN®



1200 V bidirectional
B-TRAN®

Typical voltage drop
= 0.48 V

Conduction Losses in Bidirectional Applications >5x better than IGBT + Blocking Diode

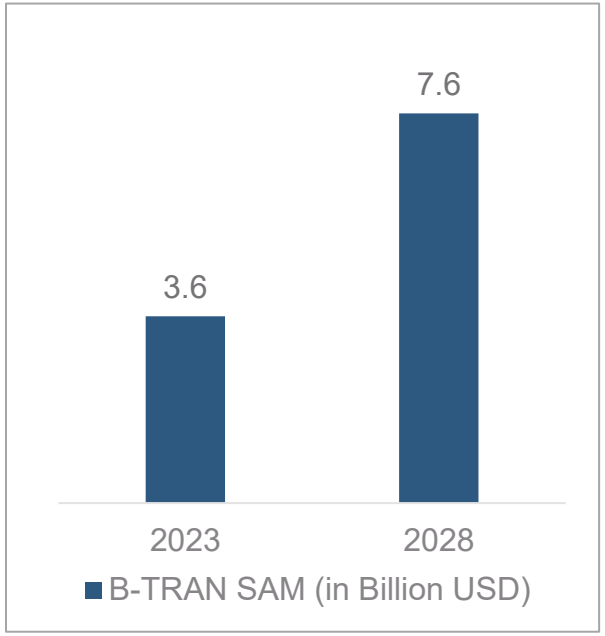
Ideal Power

Serviceable Addressable Market (SAM)

$7.6B SAM for B-TRAN®

Short Term	**$1.0 Billion** **Solid-State Switchgear** Transmission and distribution and protection circuits such as solid-state circuit breakers, relays and contactors	**$1.4 Billion** **Energy & Power** Renewable energy, energy storage systems, microgrids and electric vehicle charging
Long Term	**$1.6 Billion** **Industrial** Industrial motor drives, UPS systems for data centers, power conversion systems	**$3.6 Billion** **Automotive** Traction inverter, DC-DC converter, on-board charger and circuit protection

16% CAGR



Source: Mordor Intelligence: Global Power Electronics Market report 2023 and Company estimates.

Solid-State Switchgear and Energy & Power markets expected to drive initial sales ramp starting in 2H 2025 and path to profitability

Ideal Power

B-TRAN® Impact in Solid-State Circuit Breakers

Why Solid-State Circuit Breakers?

- Growth in renewables, energy storage, data centers and EV charging requires grid investment and faster circuit protection solutions
- >100X faster than mechanical breakers
- Eliminate arcing (enhanced safety)
- No contacts that wear (improved reliability)
- Programmability and diagnostic capability

Why B-TRAN® Enabled SSCBs?

- Ultra low conduction losses
- Bidirectionality reduces number of devices required for a given breaker power rating
- Lower system cost

B-TRAN® enables smart, efficient SSCBs with lower system costs

Ideal Power

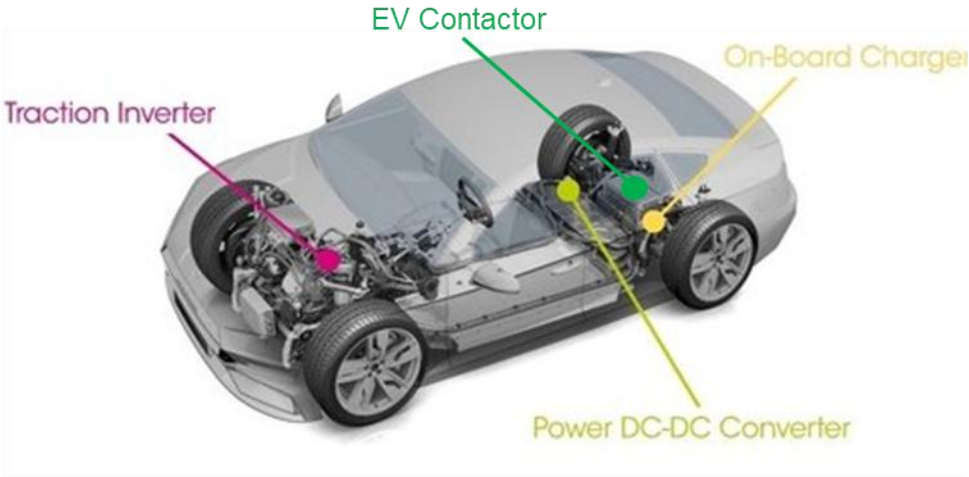
First Design Win for SSCBs

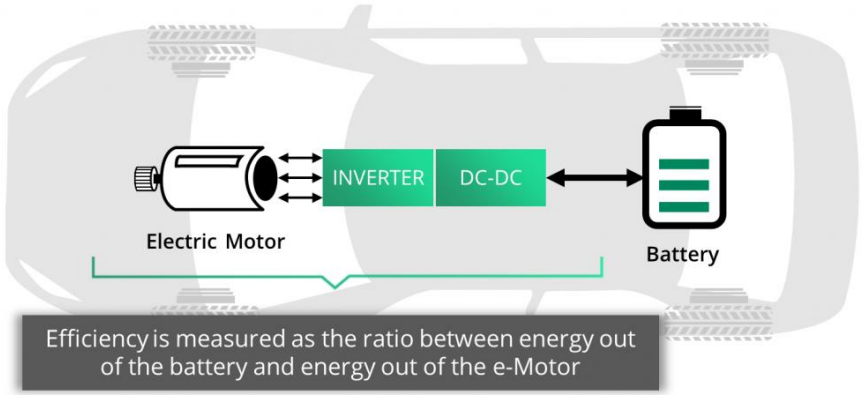
- Customer is one of the largest circuit protection equipment manufacturers in Asia serving the industrial and utility markets
- Prototype builds completed in Q1 with commercial sales expected later in 2025
- Expected to be first of multiple products incorporating B-TRAN® into SSCBs
- Customer's first B-TRAN® based SSCB could potentially translate to Ideal Power revenue of several hundred thousand dollars in first year and more than a million dollars in second year

Engaged with several large companies evaluating B-TRAN® for their SSCB product designs

Ideal Power

B-TRAN® Impact in Electric Vehicles





- Mass adoption of EVs requires lower cost and more efficient semiconductor solutions
- Applications include EV Contactors, Traction Inverter, DC-DC Converter and On-Board Charger
- Power semiconductor content in EV Drivetrain is approximately $1,100 per vehicle (higher for luxury models)
- B-TRAN® reduces the number of power devices needed in bidirectional circuits from 4 to 1 while increasing EV efficiency and range by an estimated 7 to 10%[1]

B-TRAN® enables new architectures and solutions to improve EV range and reduce cost

[1] *Company estimate extrapolated from A Novel Carrier Accumulating Structure for 1220V IGBTs without Negative Capacitance and Decreasing Breakdown-Voltage by Toyota Motor Corporation*

Ideal Power

Development Program with Stellantis

- Product development agreement for a custom B-TRAN® power module for drivetrain inverter in Stellantis' next generation EV platform
- Successfully completed first two phases of this multi-year development agreement
- 2023 Stellantis Venture Awards finalist

- Current expectation for scope of next phase is to take the custom B-TRAN® module through automotive qualification
- Engaged with Stellantis on potential second program for EV contactors

Ideal Power

Commercial Agreements and Collaborations

- Announced collaborations with large companies including:
  - Stellantis and two other global automakers
  - Three Forbes Global 500 diverse power management market leaders
  - Top 10 global solar power conversion provider
  - Five global Tier 1 automotive suppliers
  - Global provider of backup power and energy management solutions
  - Global power conversion supplier

Customer test kit

Converted multiple large companies to initial orders

Ideal Power

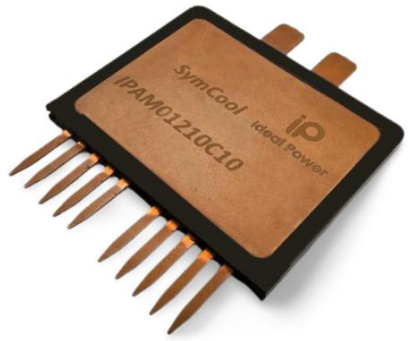
Commercial Products

B-TRAN® Discrete

- TO-264 packaged device rated at 1200V/50A
- Single die with double-sided cooling package
- Tested at up to 150A

SymCool®

- Multi-die module rated at 1200V/200A
- Enabling technology for SSCBs; also targets EV circuit protection
- $1.0B SAM for solid-state switchgear market
- Tested at up to 430A



SymCool® IQ

- Intelligent power module rated at 1200V/200A
- Adds integrated driver to SymCool® module
- $1.4B SAM for energy and power markets
- Targets renewables, energy storage and EV charging

Estimate ~50% gross margins at scale (excludes any benefit from licensing)

Ideal Power

2025 Milestones

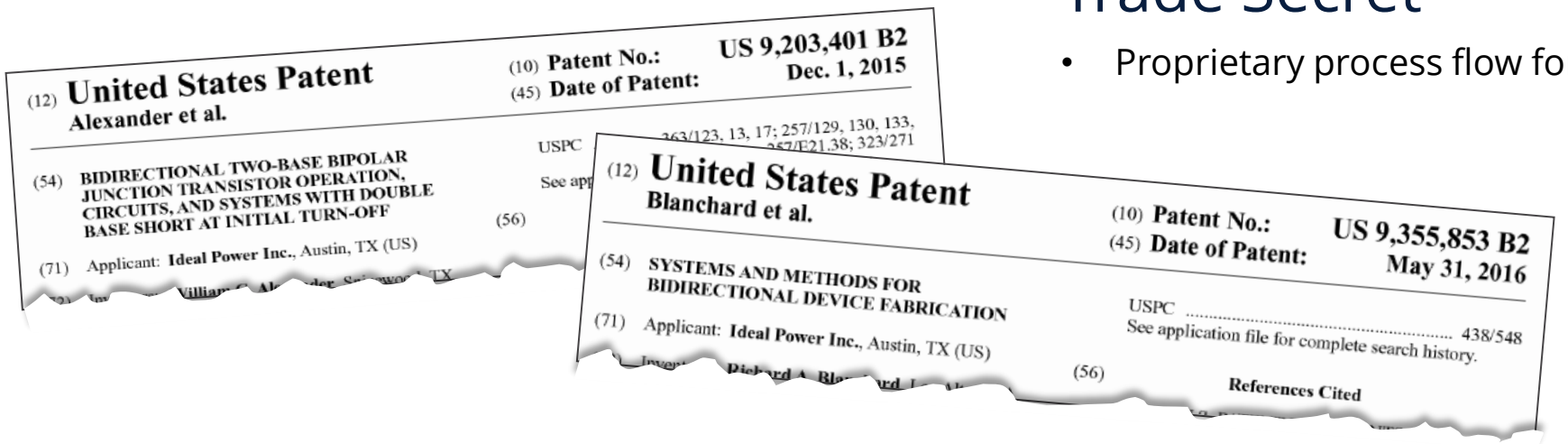
For 2025, the Company has set the following milestones:

- Secure next phase of development program with Stellantis
- ✓ Completed deliverables in 1H 2025 related to first design win
- Capture additional design wins / custom development agreements
- Start initial sales ramp in second half of year
- Increase power rating of products
- Complete third-party automotive qualification testing

Ideal Power

Ideal Power's Broad Patent Estate

Region	Issued Patents	Pending Patents
United States	49	18
Foreign	45	56
TOTAL	**94**	**74**



Patent Coverage

- B-TRAN® device architecture and packaging
- Control methodologies and techniques
- Double-sided device manufacturing techniques
- Applications specific uses of B-TRAN®

Trade Secret

- Proprietary process flow for B-TRAN® fabrication

Ideal Power

Recent News and Capital Structure

Recent News Releases

June 26, 2025

Ideal Power Secures Order from Fifth Global Tier 1 Automotive Supplier

June 24, 2025

Ideal Power Announces Collaboration with Fourth Global Tier 1 Automotive Supplier

June 10, 2025

Ideal Power Announces Distribution Agreement with Kaimei Electronic Corp.

April 1, 2025

Ideal Power Successfully Completes Deliverables Related to First Design Win for Solid-State Circuit Breakers

December 16, 2024

Ideal Power Secures First Design Win for Solid-State Circuit Breakers

December 4, 2024

Ideal Power Secures Order for SymCool® IQ Intelligent Power Modules

October 31, 2024

Ideal Power Announces Orders from Global Tier 1 Automotive Supplier

IPWR

Nasdaq Listed

Headquarters:	**Austin, TX**
Shares Outstanding[1]:	**8,347,970**
Options/Warrants[1]:	**2,094,207**
Cash Balance[1]:	**$13.7 Million**
Debt Balance[1]:	**$0.0 Million**
Year-End:	**December 31**

1) As of March 31, 2025

Ideal Power

Ideal Power

Nasdaq: IPWR

Global Leader in Ultra-Low Loss
Bidirectional Power Semiconductors

Thank you.

idealpower.com