



Ideal Power

Investor Presentation

September 2023

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.



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Investment Highlights

- ✓ B-TRAN™ disruptive semiconductor power switch with compelling advantages over conventional power switch technologies
- ✓ B-TRAN™ has the potential to displace conventional power semiconductor solutions in many large, growth markets – EV, renewables, energy storage, solid-state circuit breakers (SSCBs) and motor drives
- ✓ Introduced first commercial product in January 2023. Our near-term commercialization milestones include first commercial sales later in 2023
- ✓ Asset light, fabless business model leveraging existing silicon processing infrastructure
- ✓ Engagement with multiple target customers in key market segments
- ✓ Cash runway potential through at least Q4 2024 with no debt
- ✓ Broad patent estate – 75 issued & 35 pending

**Successfully completed all of our first half 2023 milestones,
and remain on track to achieve our remaining 2023 milestones**

What is B-TRAN™?

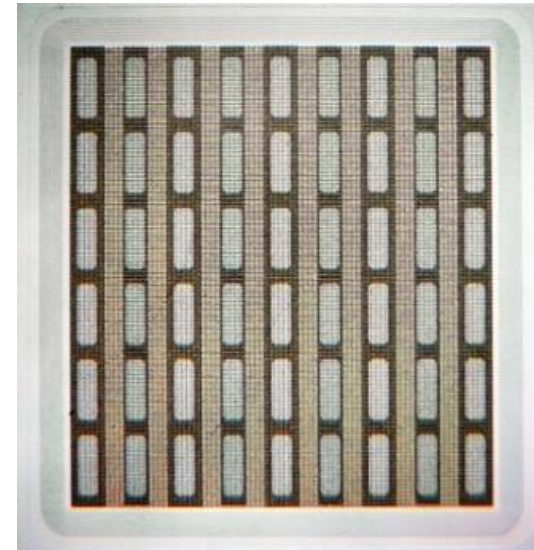
B-TRAN™ is a proprietary semiconductor power switch

- New, disruptive design (architecture)
- Fabrication on both sides of wafers

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

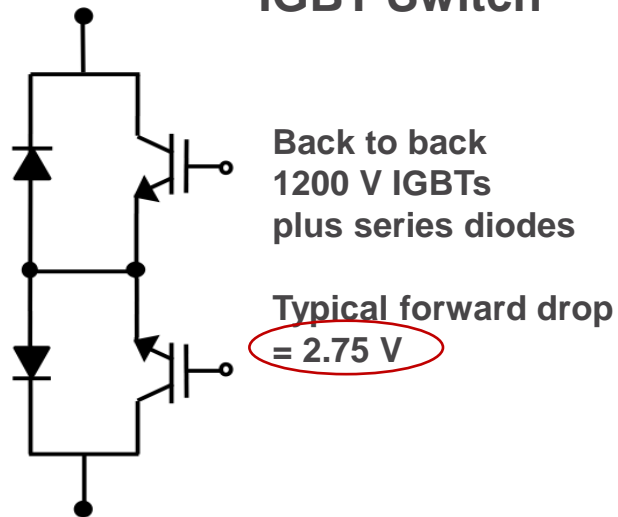


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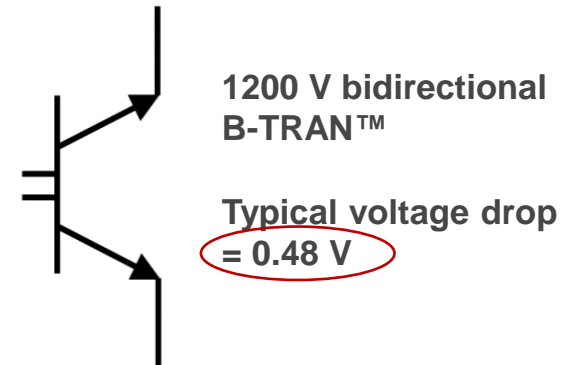
B-TRAN™ Bidirectional Switching

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

Conventional
IGBT Switch

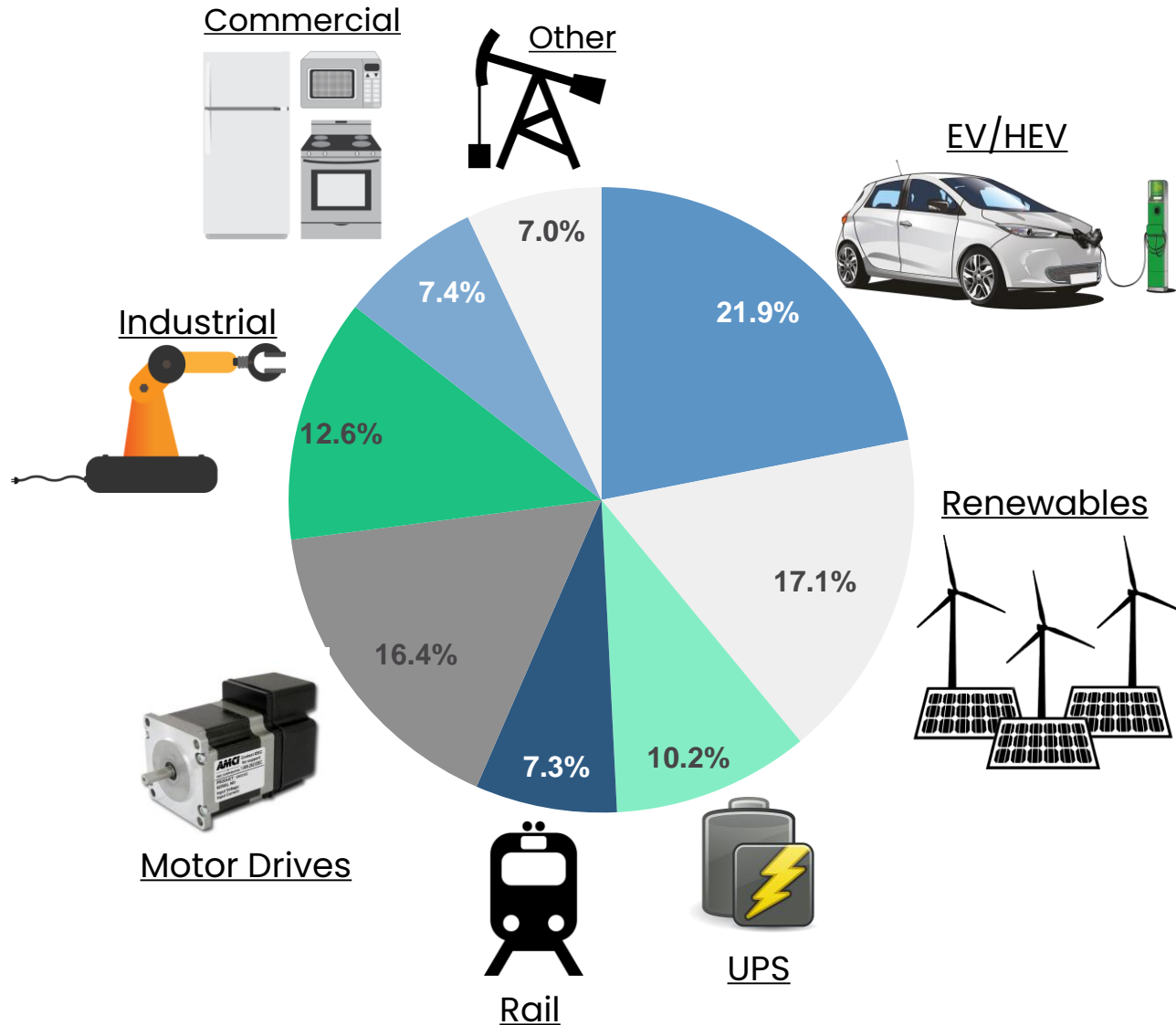


B-TRAN™



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

IGBT Market



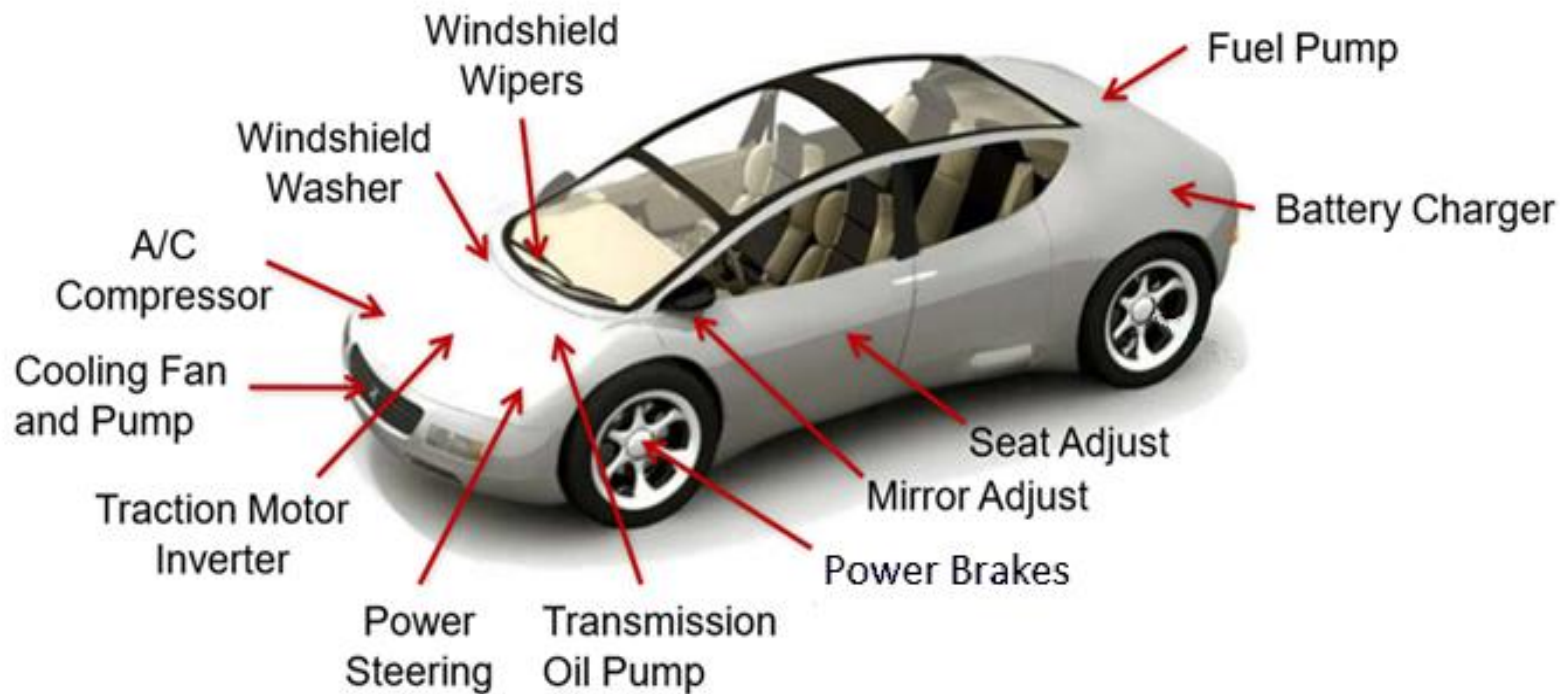
- IGBT market expected to reach \$11B by 2026¹
- 10.6% projected CAGR¹
- EV/HEV segment to drive the growth of the IGBT market¹

¹ *Global Insulated-Gate Bipolar Transistor (IGBT) Market (2021-2026) by Mordor Intelligence*

Key Addressable Market Segments

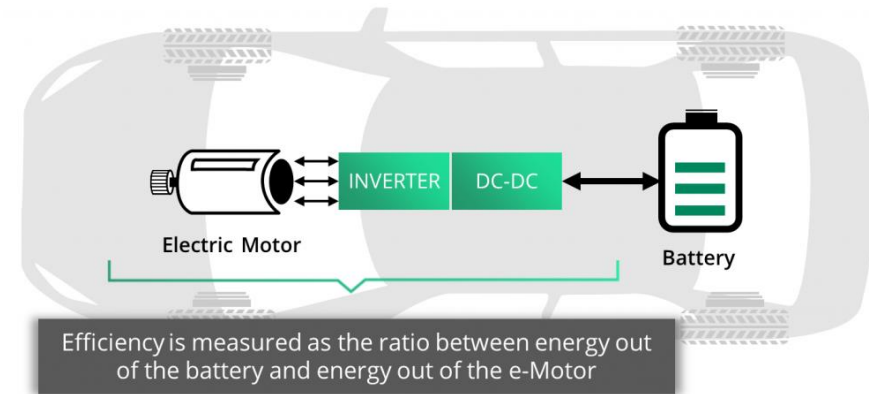
EV/HEV: \$1.5B IGBT Market Segment

CAGR: 15%



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B-TRAN™ Impact in Electric Vehicles



- Primary challenges to mass adoption of EVs are high cost and range anxiety
- EVs need to convert DC-AC, AC-DC, and DC-DC efficiently to improve range and performance
- Power switches are needed in the Traction Inverter, DC-DC Converter, On-Board Charger (OBC) and Circuit Protection
- The largest cost component of the drivetrain is the power semiconductor switches which make up 8-10% of the total electric vehicle production cost¹
- 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%²

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

¹ IGBTs Critical to EV Cost by David Manners

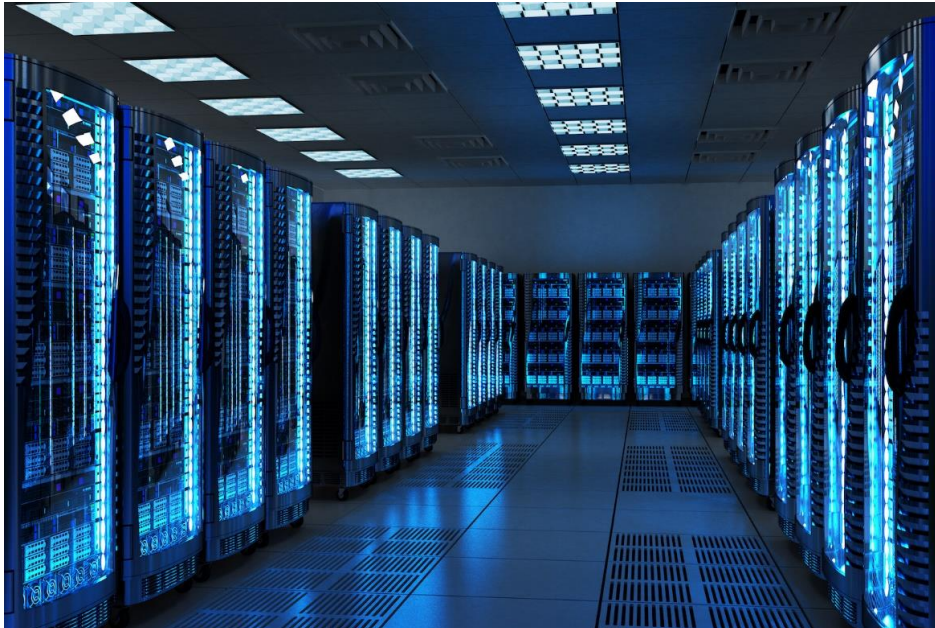
² Company estimate extrapolated from A Novel Carrier Accumulating Structure for 1220V IGBTs without Negative Capacitance and Decreasing Breakdown-Voltage by Toyota Motor Corporation



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Key Addressable Market Segments Continued

Renewable Energy:
\$1.1B IGBT Market Segment
CAGR 12%



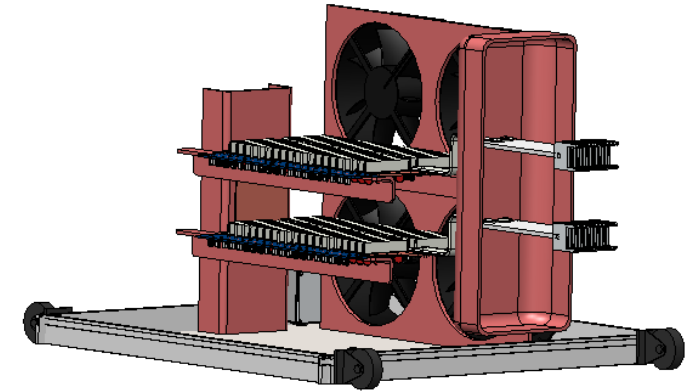
Data Center/Cloud Storage:
\$0.5B IGBT Market Segment
CAGR 6%



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B-TRAN™ Enabled Circuit Breakers

- Solid-state circuit breakers (SSCBs) enabled by B-TRAN™s low conduction losses
- Mission critical technology funded by U.S. Navy for its ship electrification program
- Partnered with Diversified Technologies (DTI)
- Fabricated, packaged, tested and shipped hundreds of very low loss B-TRAN™ devices for SSCB demonstration
- Validated B-TRAN™ enabled SSCBs for industrial and utility markets
- Drove engagement with multiple Forbes Global 500 power management market leaders
- Solid-state switching equipment market is forecasted to grow at a CAGR of 7.6% to \$9.3 billion in 2028



B-TRAN™ based MVDC solid-state circuit breaker rated at 12 kV, 500 A (6 MW)



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Commercial Agreements and Collaborations

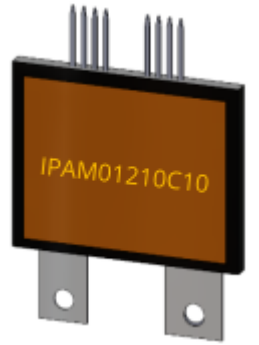
- Successfully completed Phase 1 and secured Phase 2 of multi-year development agreement for custom B-TRAN™ module with top 10 global automaker
- Announced collaborations with and shipped packaged B-TRAN™ devices to large companies including:
 - Second top 10 global automaker
 - Top 10 global solar power conversion provider
 - Two Forbes Global 500 diverse power management market leaders
 - Tier 1 global automotive supplier
 - Global provider of backup power and energy management solution



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2023 Milestones

- Introduce first commercial product, the SymCool™ Power Module, a B-TRAN™ multi-die module - **Completed**
First commercial sales later in 2023
- Complete Phase I of multi-year development program with top 10 global automaker in Q2 2023 – **Completed; Secured Phase 2**
- Complete first engineering run with production fab in Q2 2023 - **Completed**
- Deliver packaged B-TRAN™s to DTI under the NAVSEA program in 1H 2023 - **Completed**
- Introduce second commercial product, an intelligent power module, in Q3 2023 – **On track**
- Deliver B-TRAN™ samples for test and evaluation program in 2H 2023 – **Large company deliveries completed with more in process**



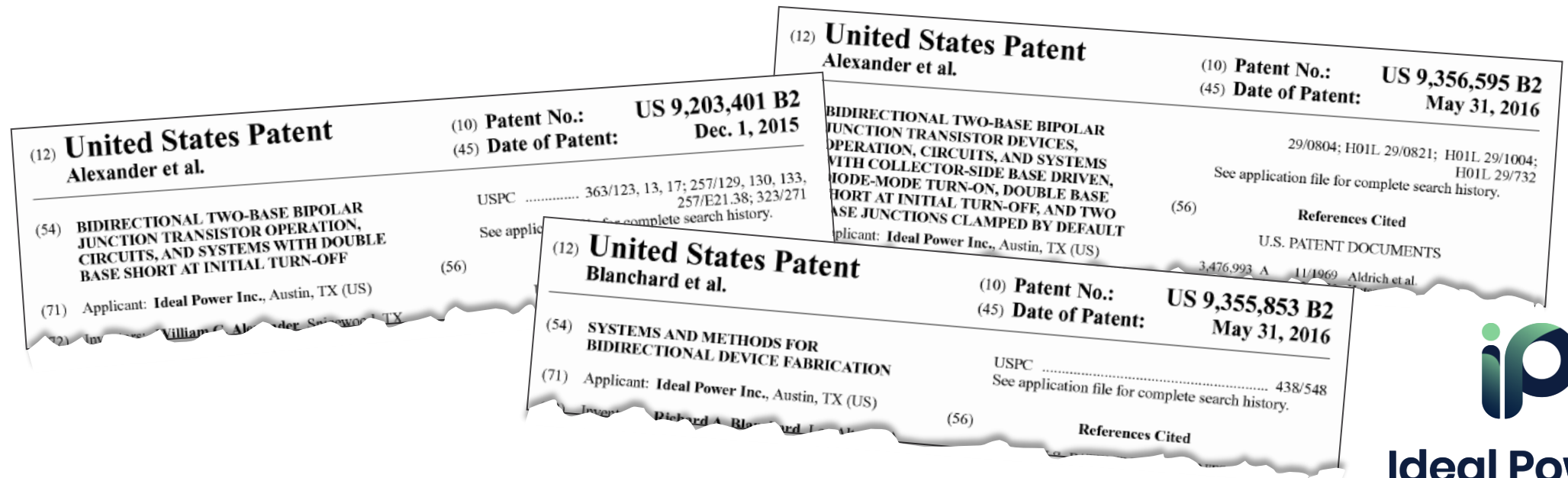
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Ideal Power's Broad Patent Estate

Region	Issued Patents	Pending Patents
United States	43	9
Foreign	32	26
TOTAL	75	35

The Patents Cover

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



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Recent News and Capital Structure

News Releases

August 22, 2023

Ideal Power Secures Phase II of Development Program with Top 10 Global Automaker

July 19, 2023

Ideal Power Commences Customer Shipments to B-TRAN™ Test and Evaluation Program Participants

June 20, 2023

Ideal Power Announces Qualification of High-Volume Wafer Fabrication Supplier

March 9, 2023

Ideal Power Adds Global Tier 1 Automotive Supplier to its B-TRAN™ Test and Evaluation Program

January 25, 2023

Ideal Power Launches Its First Commercial Product, the SymCool™ Power Module

November 14, 2022

Ideal Power Enters into Development Agreement with Top 10 Global Automaker for B-TRAN™-based Electric Vehicle Power Module

IPWR

Nasdaq Listed

Shares Outstanding¹: **5,938,458**

Options/Warrants¹: **1,889,834**

Cash Balance¹: **\$12.7 Million**

Debt Balance¹: **\$0.0 Million**

Sector: **Industrials**

Year-End: **December 31**

¹⁾ As of June 30, 2023



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Nasdaq: IPWR

Thank you.

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