Expertise, our source of energy

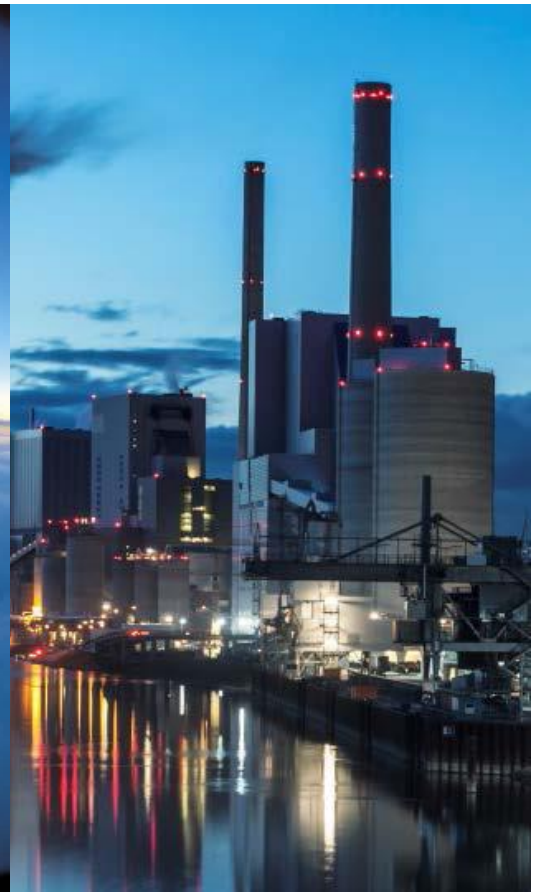
GLOBAL EXPERT IN ELECTRICAL POWER & ADVANCED MATERIALS

☑ Public
☐ Internal
☐ Confidential

MERSEN
Expertise, our source of energy

THE GROUP



2015 KEY FIGURES

SALES

€772M

- 37% Americas
- 34% Europe
- 29% Asia & ROW

EBITDA

12.7% OF SALES

- Ability to invest to maintain our leadership position

EMPLOYEES

6,375

- Present in 35 countries

ORGANIZATION

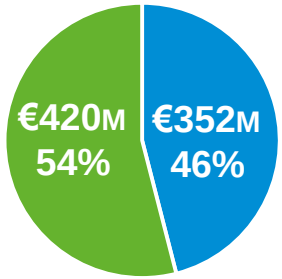


Mersen Group

MERSEN IS A GLOBAL EXPERT IN ELECTRICAL POWER AND ADVANCED MATERIALS

Two Segments

Advanced Materials



Electrical Power

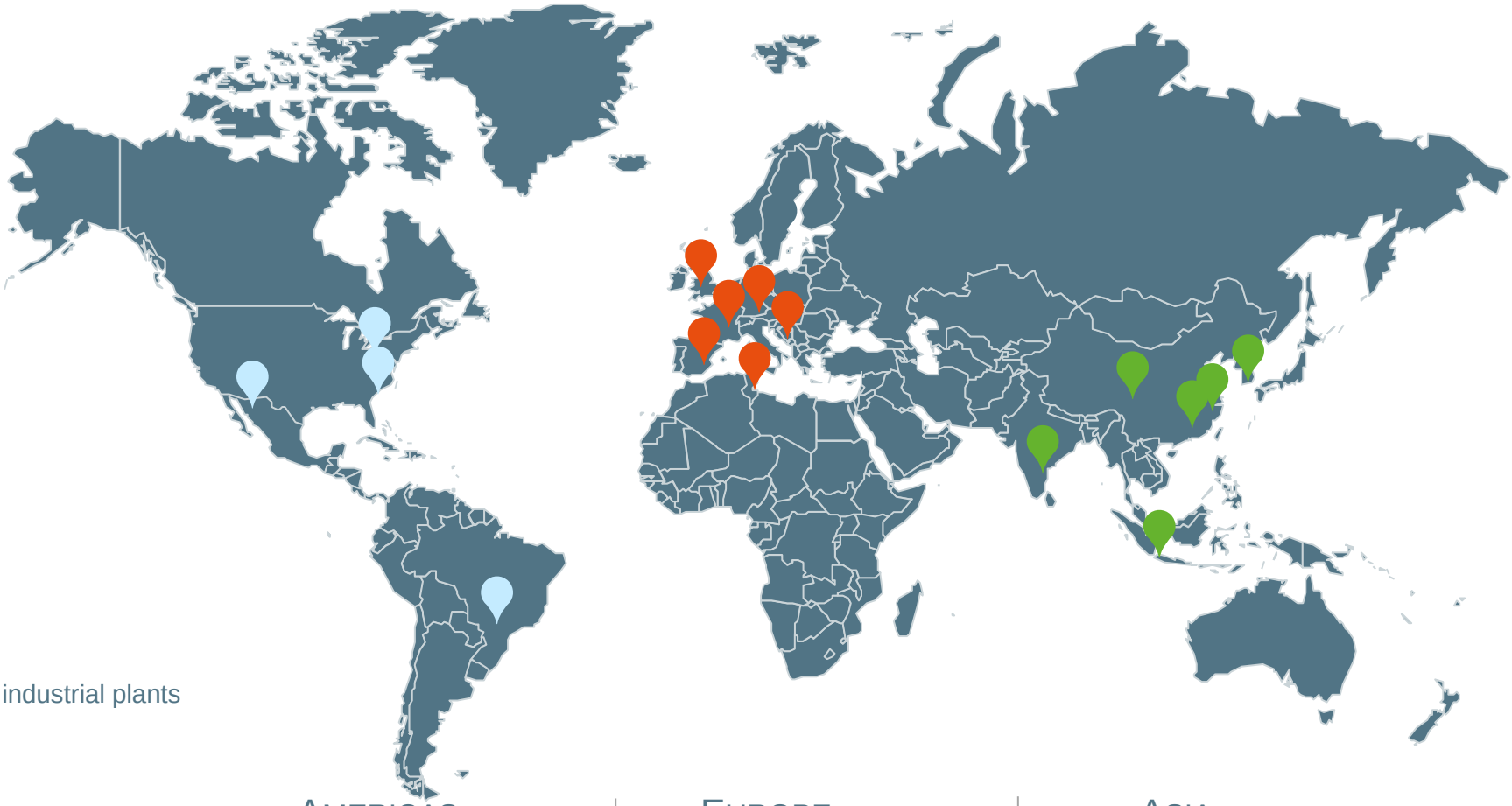
Five Business Units

ACE: Anticorrosion Equipment
GS: Graphite Specialties
PTT: Power Transfer Technologies

EPC: Electrical Protection and Control
SPM: Solutions for Power Management

GLOBAL FOOTPRINT

As of December 31, 2015



Main industrial plants

	AMERICAS	EUROPE	ASIA
SALES	37%	34%	29%
EMPLOYEES	30%	35%	35%

An Ambitious Innovation Policy

1 R&D

- 12 Research Centers
- A Dozen of Specialized Design Departments
- Testing Benches



2 Expertise

- Power Electronics
- Power Quality
- Graphite Formulation
- Silicon Carbide and Reactive Metals



3 Relationships With Industry Leaders

- Application Knowledge
- Design Capabilities
- Co-development
- Partnerships



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ELECTRICAL POWER



ELECTRICAL POWER

- WE ARE A LEADER IN ELECTRICAL POWER MANAGEMENT

- WE ARE A GLOBAL PARTNER OFFERING OUR CUSTOMERS THE BEST SOLUTIONS THANKS TO OUR EXPERTISE AND IN-DEPTH KNOWLEDGE OF THEIR APPLICATIONS



Over 130 Years of Experience







1885 – Shawmut Fuse Wire Company formed in Boston, MA

1889 – Boston Fire Underwriters require fuses (later known as NFPA)

1928 – Ferraz Fuse founded by Lucien Ferraz

1946 – m.schneider founded

1952 – Eldre founded as "Allied Soldering and Brazing"

1950s – Laminated Bus Bar first introduced by Eldre

1958 – Chase Shawmut acquired by I-T-E Imperial

1976 I-T-E Imperial Corp acquired by Gould Inc of Ohio

1981 – R-Theta founded, starts mfg heatsinks in 1988

1982 – Ferraz acquired by Telemecanique

1985 – Carbone Lorraine acquires Ferraz

1999 – Carbone Lorraine acquires Gould Shawmut and forms Ferraz Shawmut

Ferraz-Shawmut Acquisitions:
2007 – Power Fuse group from GE
2008 – Mingrong
2008 – R-Theta
2010 – m. schneider

2010 – Carbone Lorraine changes name to MERSEN

Mersen Acquisitions:
2012 – Eldre
2014 – Cirprotec
2015 – ASP

1885 1895 1905 1915 1925 1935 1945 1955 1965 1975 1985 1995 2005 2015

MARKETS

INDUSTRY

Drives
Motors & Generators
Process Industries
HVAC
Welding
Machine Tools
Oil & Gas



TRANSPORTATION

Railway
Marine
EV/HEV
- Heavy Duty
- Passenger

Aeronautics



ELECTRICITY
PRODUCTION, TRANSMISSION & DISTRIBUTION

Solar
Wind
Conventional
EES
Power Back-up / UPS
Power Quality
HVDC
Transmission
Distribution
Lighting



DEFENSE

Missile
Aircraft
EV/HEV
Communication
Radar



DATA/TELECOM

Datacenter
Video Surveillance
Wireless 3G/4G
Radar
Broadcasting



COMPETITIVE STRENGTHS

Generation	Transmission	Distribution	Use
Vestas	ABB	Fuji Electric	ALSTOM
ALSTOM	SIEMENS	GE	BOMBARDIER
SMA	RXPE	Rockwell Automation	MITSUBISHI ELECTRIC
ABB	ALSTOM	ABB	THALES
GE	XJ	EATON	SIEMENS
EDF		TMEiC	CRRC
SIEMENS		SIEMENS	GE
VOITH		Schneider Electric	SAFRAN
HITACHI		EMERSON	TESLA
Gamesa			WEG
UNITEDPOWER			BYD
SENVION			saft
KACO			Continental

MERSEN'S ADVANTAGES

- Global Presence
- Brands
- Product Portfolio
- Technical Services
- Specification
- Customer Care
- Digital

Application-Oriented Business Model

Electrical Power is comprised of two business units each addressing specific applications with a broad but coherent product portfolio:

- **Solutions for Power Management (SPM)**
  - SPM designs innovative and application engineered solutions for OEMs in the Power Electronics and Power Distribution markets, integrating high performance cooling, signal & power bus bars, and semiconductor protection fuses
- **Electrical Protection and Control (EPC)**
  - EPC provides a reliable and differentiating global platform of electrical protection and controls components and services serving OEMs, panel builders, utilities, contractors, and end-users in LV and MV power distribution markets

EPC Product Portfolio

UL Fuses & Fusegear

- Low Voltage Fuses
- Medium Voltage Fuses
- DC Fuses
- Solar Fuses
- Fuse Holders, PDBs
- PV Combiner Boxes
- Fused Coordination Panels



IEC Fuses & Fusegear

- Low Voltage Fuses
- Medium Voltage Fuses
- DC Fuses
- Solar Fuses
- Fuse Holders
- PV Combiner Boxes
- DIN Fuse Switch Disconnectors



Surge Protection

- UL SPD
- IEC SPD
- Solar SPD
- Components (TPMOV®)



Switches & Contactors

- High-Current AC & DC Switches
- Contactors
- Fix Traction Systems
- Disconnect Switches



Power Transfer for Rail Vehicles

- Earth Return Current Units
- Current Collectors
- Fuse Boxes
- Connection Boxes
- On-board Switches



SPM Product Portfolio

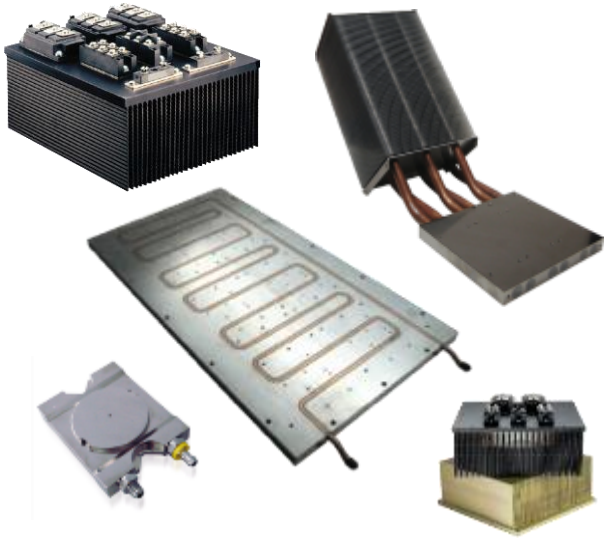
Special Purpose & Semiconductor Protection Fuses

- UL Round and Square Body
- British Standard AC Protection
- IEC Cylindrical and Square Body (French / DIN)
- AC Low and Medium Voltage
- DC Rated For Traction



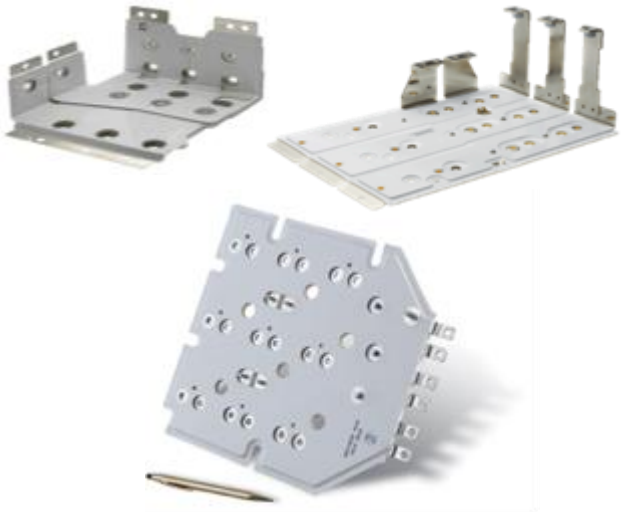
Cooling

- Air and Liquid Cooled Heatsinks
- Heat-pipe Assemblies
- Heat Exchangers
- Enclosed Cooling Systems

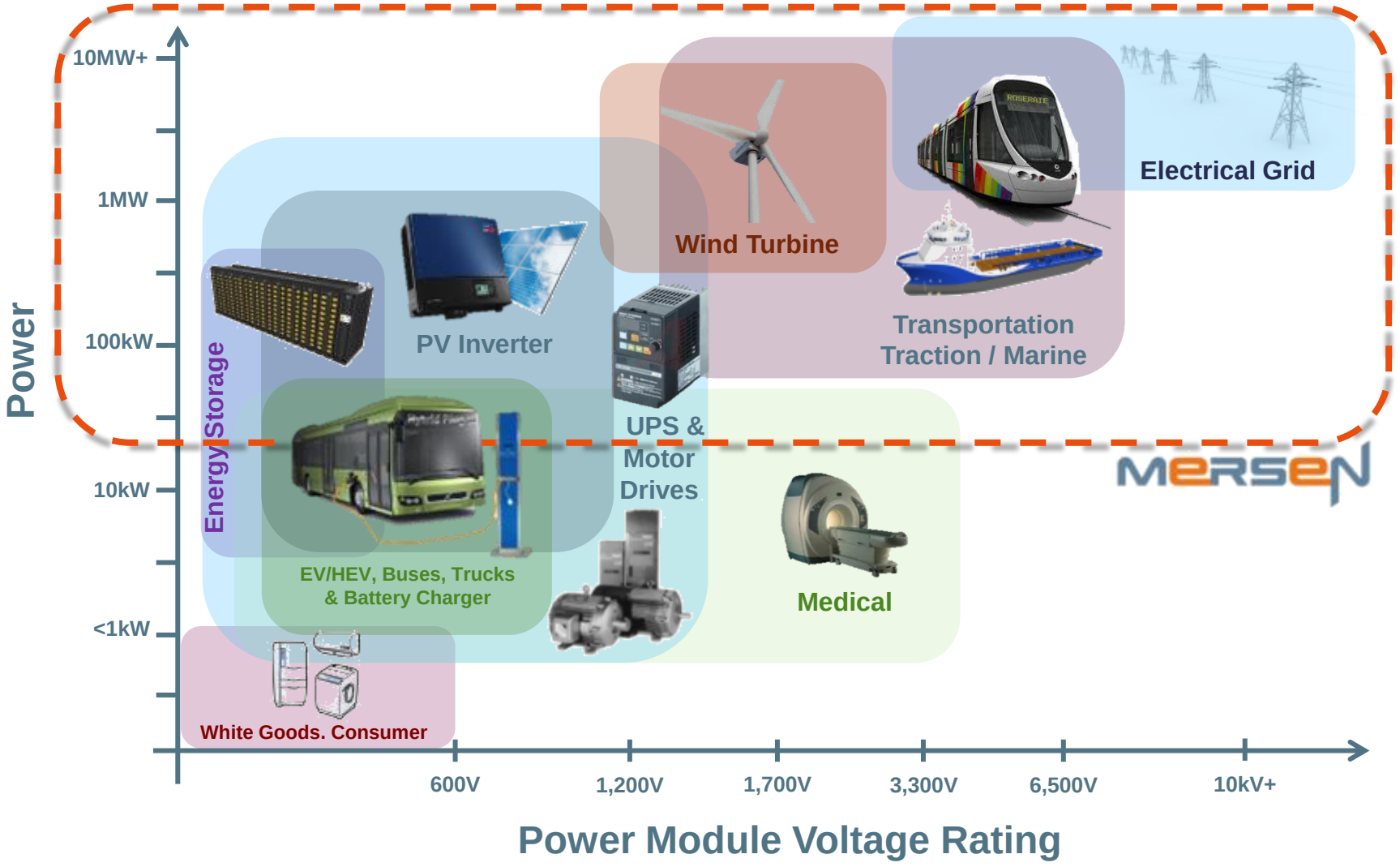


Bus Bar

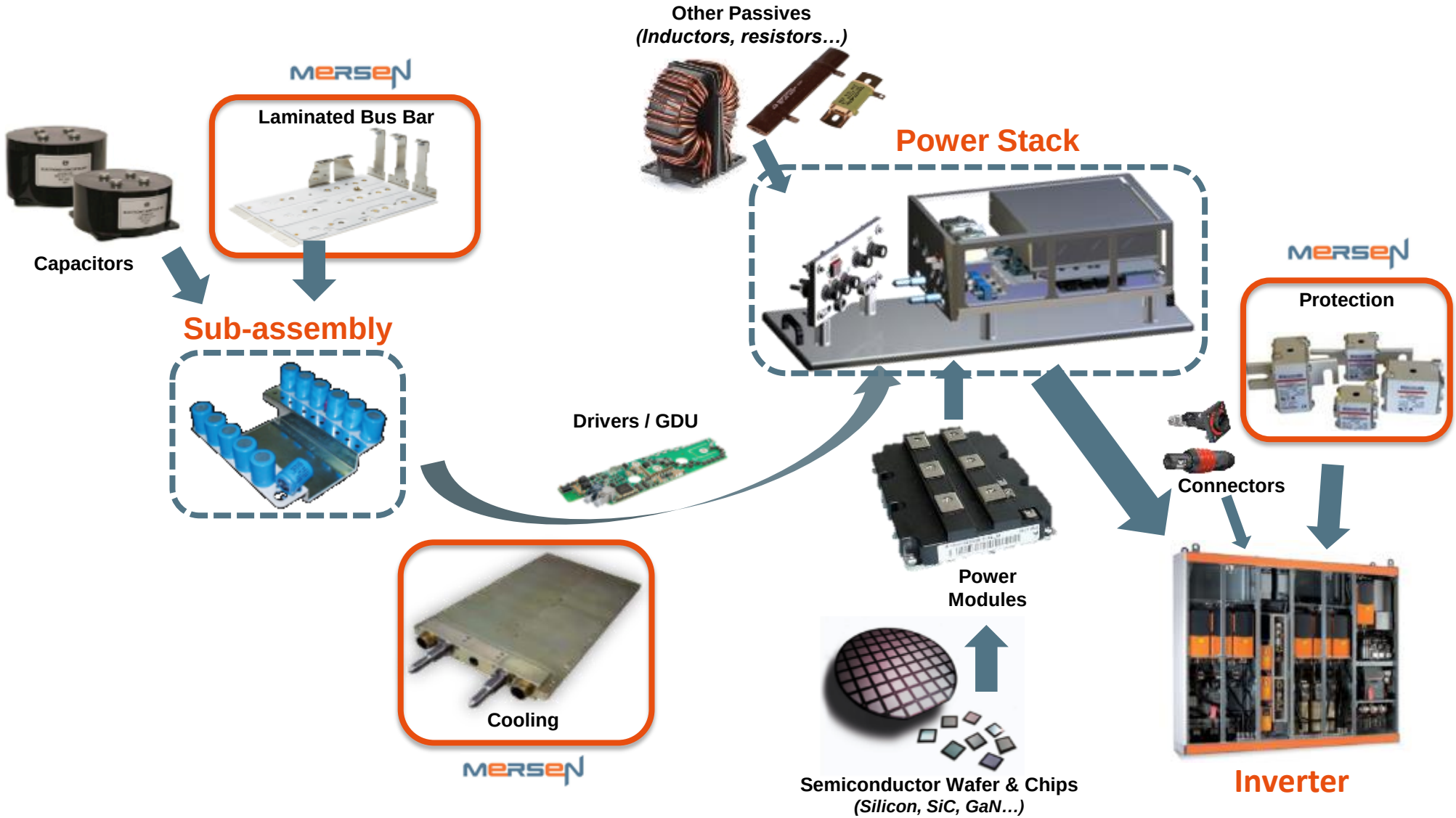
- Laminated / Multi-layer
- Flexible / High Temperature
- Powder Coated



SPM Expertise: Medium & High-Power Applications



SPM Value-Chain Positioning
Toward Integrated Architecture



MERSEN EXPERTISE

WE BRING EXPERTISE TO OUR CUSTOMERS WITH PRODUCTS AND SOLUTIONS DESIGNED TO MEET OR EXCEED THEIR EXPECTATIONS



WE DIFFERENTIATE BY HELPING OUR CUSTOMERS:

- Protect electrical systems and people who use them
- Improve electrical safety, performance, and reliability
- Reduce system downtime
- Develop technical solutions that increase competitiveness
- Reduce investment costs, total cost of ownership, and working capital
- Increase global capacity
- Seize opportunities in emerging markets


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