

# John G Peck Ltd - Military and Aerospace Overview



Specialist Distributor  
of Power Electronic  
Components

# Profile and who we represent



- Specialist Distributor of Power Electronic Components
- Privately owned company formed in 1983
- Turnover £8 million (2021)
- 1000m<sup>2</sup> office, warehouse and test facility in Loughborough, UK
- 10 employees
- Wide product portfolio supporting all power electronics applications
- Customer base from global OEM's through to service and spares
- High level of UK support (Application • technical • sales • stock • logistics)
- ISO9001:2015 accredited



Power Semiconductors for Industrial, Military and Aerospace applications (Thyristor • Diode • Silicon Carbide • Custom modules)



Electrolytic capacitors for Industrial, Aerospace, Defence, Rail and Medical applications (Tantalum • Ceramic • RF • Film • Aluminium)



Electrical protection, cooling, busbars and capacitors (Laminated busbars • Flexible busbars • Heatsinks • Liquid cooling plates • Fuses • Capacitors)



Current and Voltage sensors



Polyester and Polypropylene film Capacitors in axial, boxed or tag packages

## Company Philosophy

To provide our customers a competitive, first class service in Power Electronics based products on behalf of the global manufacturers we represent.

JGPL focus on a small number of quality suppliers without conflict of product lines.

This strategy ensures full commitment of suppliers and enables us to forge strong relationships with both customers and manufacturers.

## Our Service

Major companies such as Powerex and Mersen have entrusted the supply and support of their key OEM accounts to JGPL for many years.

Full technical support is provided by our experienced engineering team and direct manufacturer support.

UK stock holding, bespoke packing or labelling, call off and just-in-time orders are services offered.

Volume purchasing combined with stock holding, keep overheads low, prices competitive and enable a flexible approach.

# Applications for our products

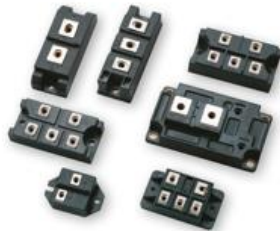
## Power Semiconductors

Designed and manufactured by  
**POWEREX**

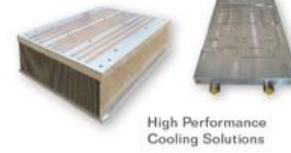


IGBT  
MOSFET  
Silicon Carbide  
Thyristors  
Diodes  
Power Modules

Increased Qualification  
Burn-In Testing  
High Temp Materials  
Custom Topologies  
Custom Packages



## Cooling, Protection, Busbars and Capacitors



High Performance  
Cooling Solutions



Designed and manufactured by  
**MERSEN**

Laminated, Flexible  
and Standard Busbars

Designed and manufactured by  
**Wooding**



Film and Electrolytic  
Capacitors

Designed and manufactured by  
**EXXELIA**

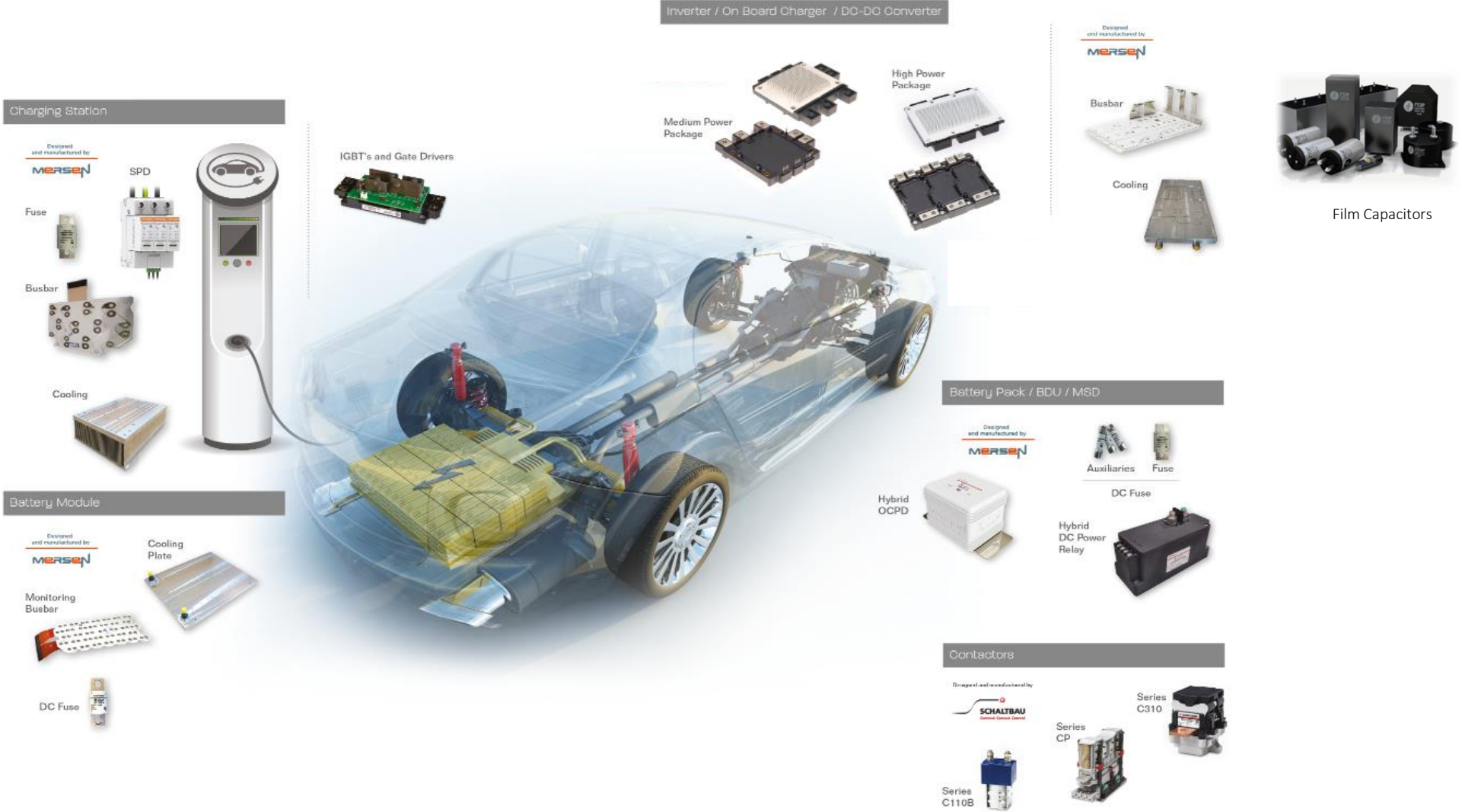


Designed and manufactured by  
**MERSEN**

Fuses, Holders  
and Surge Protection



# Applications for our products



**Charging Station**

- Designed and manufactured by **MERSEN**
- SPD
- Fuse
- Busbar
- Cooling

**Battery Module**

- Designed and manufactured by **MERSEN**
- Monitoring Busbar
- Cooling Plate
- DC Fuse

**Inverter / On Board Charger / DC-DC Converter**

- IGBT's and Gate Drivers
- Medium Power Package
- High Power Package

**Battery Pack / BDU / MSD**

- Designed and manufactured by **MERSEN**
- Hybrid OCPD
- Auxiliaries
- Fuse
- DC Fuse
- Hybrid DC Power Relay

**Busbar**

- Designed and manufactured by **MERSEN**

**Cooling**

**Film Capacitors**

**Contactors**

- Designed and manufactured by **SCHALTBAU**
- Series C110B
- Series CP
- Series C310

# Applications for our products

## PRODUCTS FOR INDUSTRIAL APPLICATIONS

AC & DC Drives  
Servo Drives  
Switched Reluctance Drives  
Power Supplies

Welding  
Lasers PSU  
Medical Equipment  
Induction Heating  
Bespoke applications

### IGBT, Drivers and SiC modules



### Thyristors, Diodes and Power Modules



### Electrolytic, Film and Snubber Capacitors



### Cooling, Protection and Busbars



### Current and Voltage Sensors



### Resistors



# Product Ranges



## Diodes

General Purpose  
Voltage: 100V to 6500V  
Current: 100A to 12,000A

Fast Recovery  
Voltage: 200V to 3600V  
Current: 125A to 1500A

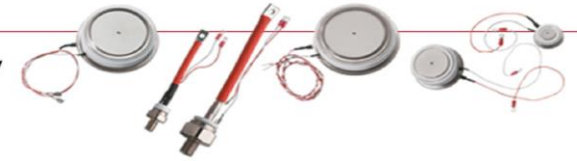


Standard and fast switching types  
Stud and Capsule packages

## Thyristors

Phase Control SCRs  
Voltage: 100V to 6500V  
Current: 40A to 5000A

Inverter Grade SCRs  
Voltage: 200V to 2000V  
Current: 40A to 2100A



## Power Modules (Thyristor and Diode)

POW-R-BLOK™  
Voltage: 600V to 11,000V  
Current: 20A to 2500A

POW-R-BRIK™  
Voltage: 1200V to 5000V  
Current: 300A to 1585A



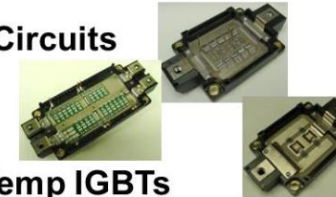
## Silicon Carbide and Custom Power Modules

### Chip Carrier (HV IGBT & FWD)



Custom modules, topologies and high reliability products

### Custom Circuits



Military and Aviation modules

Access to Mitsubishi and other manufacturers chips



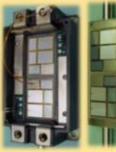



### Extend Temp IGBTs







Silicon Carbide from multiple sources

# Product Ranges



<b>Semiconductor Chips:</b>  <ul style="list-style-type: none"> <li>• Exclusive access to Mitsubishi silicon</li> <li>• Powerex Rectifier, Thyristor &amp; Darlingtons</li> <li>• Silicon-carbide</li> </ul>	<b>Packaging Technology:</b>  <ul style="list-style-type: none"> <li>• Aluminum nitride (190W/mK)</li> <li>• Alumina (35W/mK)</li> </ul>	<b>Baseplate Selection:</b> <ul style="list-style-type: none"> <li>• Copper</li> <li>• Aluminum filled silicon carbide</li> <li>• Molybdenum</li> <li>• Aluminum filled graphite</li> <li>• Aluminum</li> </ul> 
<b>Interconnections:</b>  <ul style="list-style-type: none"> <li>• Wire bonding</li> <li>• Ribbon bonding</li> <li>• Power overlay</li> </ul>	<b>Packages:</b>  <ul style="list-style-type: none"> <li>• Picture frame</li> <li>• Custom development including plastic and hermetic</li> <li>• 3D printing</li> </ul>	<b>Reliability Testing:</b>  <ul style="list-style-type: none"> <li>• HTRB, blocking life, burn-in</li> <li>• Power cycling</li> <li>• Temperature cycling</li> <li>• HAST &amp; moisture resistance</li> <li>• Shock &amp; vibration</li> </ul>

<b>Rectifier &amp; Thyristor</b> 	<b>Modules- Both Custom and Industry Standard</b>  IGBT HVIGBT MOSFET
<b>Integrated Power Products</b> 	<b>Demanding Applications in Traction, Military and Aviation</b> 



- Extended the temperature range
- Hermeticity/ Added moisture resistance
- Specialized circuit configurations
- Higher Blocking Voltage/ Higher Voltage isolation
- Special Packaging (Height, Length, Width, Weight)
- Integrated Heatsinks (liquid or air cool)
- Increased Junction Temperature
- Added Intelligence (sensors)





## Laminated Busbars



Flexible Battery Busbars with integrated sensors



DC link and Power connection Busbars



Circular Busbars

## Fuses and Electrical Protection



DC fuses and EV protection relays



Semiconductor Fuses

## Capacitors



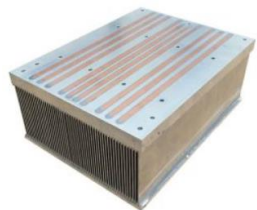
Film Capacitors



Electrolytic Capacitors

Established capacitor manufacturers, Fisher and Tausche (Germany) plus Leclanche (Switzerland), are now part of the MERSEN Group

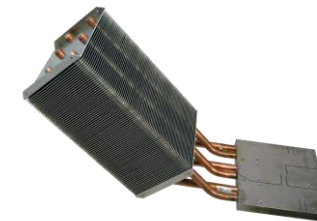
## Heatsinks and Cooling



High Performance Air Cooled



Liquid cooled heatsinks and cold plates



Heat Pipes

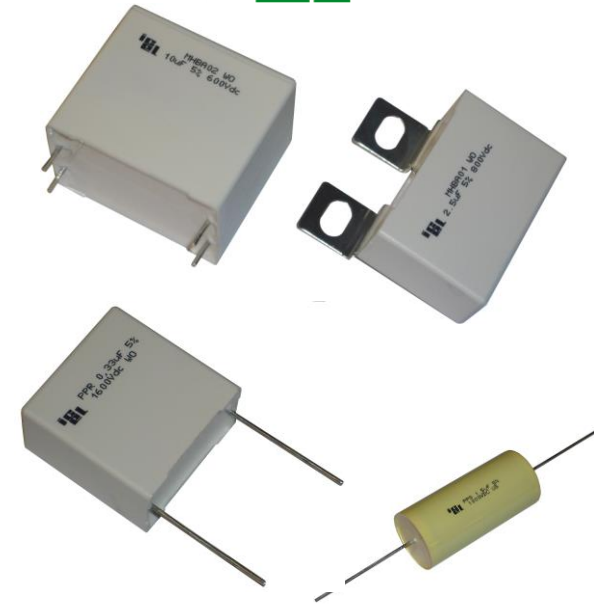
# Product Ranges



Electrolytic and Film Capacitors



Electrolytic and Film Capacitors



Snubber capacitors

# Product Ranges

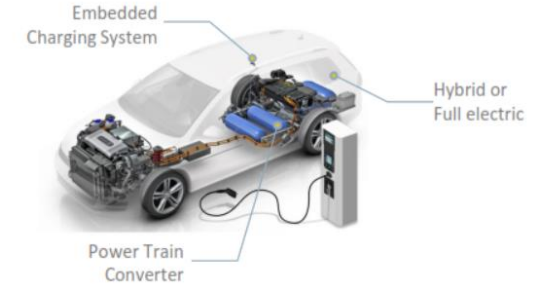


## Aviation

Airbus Group	Bombardier	Safran
Leonardo	Gulfstream	Collins Aerospace
Boeing	Dassault	Rolls Royce
Lockheed	Embraer	Thales

## Electric Vehicle

Renault	Valeo
BMW	Continental
VW	Magneti Marelli
Audi	BAE Electric Buses



Lightweight	High-Reliability	No Obsolescence	High Energy density	Industrialization for High Volume series
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COTS, Built-to-print & Custom designs

Small, Medium and Large volumes

Experts in Power Applications

High Reliability markets where weight matters

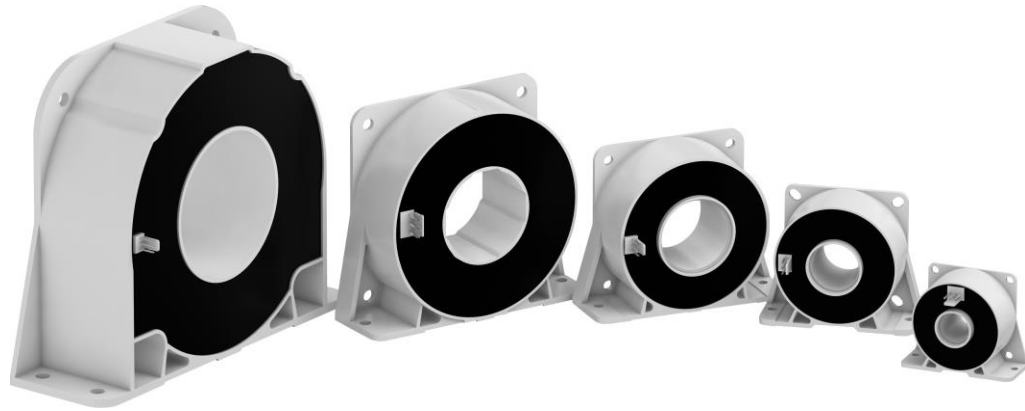
Design & Engineering Support

No Obsolescence for Long Programs

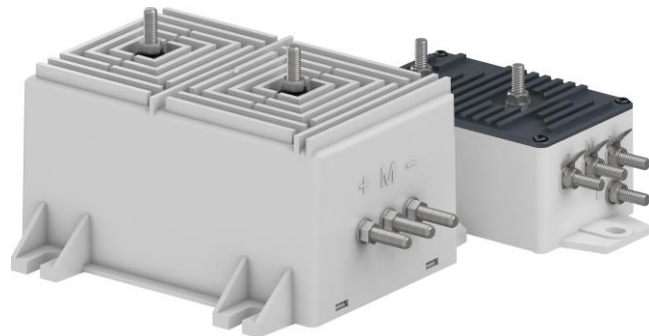
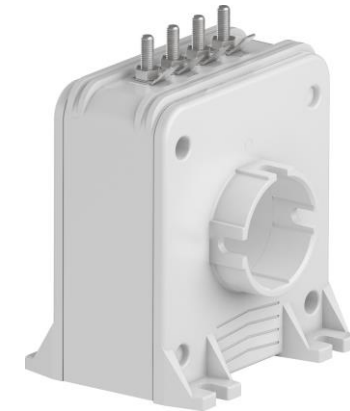
400Hz & Partial Discharge

Confined Electronics? High temperature offer

# Product Ranges



Current measurement  
Hall effect technology  
Closed Loop



Voltage Sensors



Current Sensors  
Full Electronic Technology

John G Peck Ltd an independent and financially sound company with 37 years experience in Power Electronics.

Offers a wide range of quality products from leading global brands.

Offers technical support from a strong engineering team working closely with customers. Where necessary suppliers' application engineers can be called upon for added support.

Is highly focussed on service, fast response and logistic support backed by over £2 million of UK held buffer stock.

We have a flexible and pragmatic approach to supporting our customers' growth.

# Contact us

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