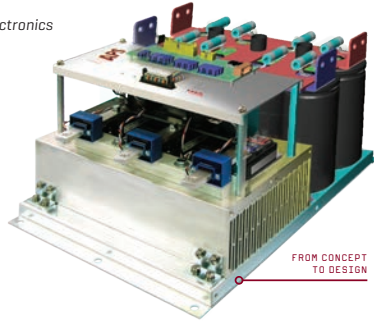
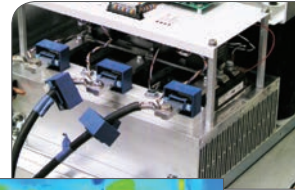


Field-proven, Time-tested Designs

APS has a proven track record of delivering robust, reliable power stack solutions, leveraging more than twenty years of know-how and experience designing brand-labeled power semiconductor assemblies and systems for the world's largest semiconductor manufacturers and OEM partners.

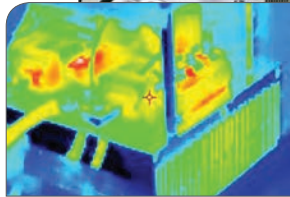


FROM CONCEPT TO DESIGN



All APS PowerStacks are subjected to rigorous design and qualification processes including electrical and thermal simulation through integrated assembly and complete full power testing with performance verification.

- + Compliant with IEEE and UL 1741 standards
- + Compliant with environmental standards (IEC 60721-3)
- + ISO9001:2015 Registered



Design-In Support

Need power solutions? Just ask an APS engineer!

- + Innovative power products
- + Highly reliable and efficient solutions
- + Highest-quality products

INDUSTRIES SERVED

APS power products are used to improve efficiency, reliability, and quality of the electric power in:

- + Oil & Gas
- + Motors & Drives
- + Distributed Generation
- + Alternative Energy – Solar, Wind & Wave
- + Transportation – Rail, Aerospace & Marine
- + Heavy Industries – Steel, Mining, Welding & Plating
- + Power Transmission & Distribution
- + Energy Storage – Battery Charging
- + Industrial Power Systems

ABOUT US

Applied Power Systems, Inc. is an industry-leading manufacturer of advanced power conversion products, power electronic controls and high power semiconductor thermal management solutions. Focused exclusively on power electronics, APS provides innovative, leading-edge, quality-engineered products to satisfy the most demanding requirements and withstand the harshest environments.

OUR PRODUCTS

APS's comprehensive standard high power products include IGBT Inverter Stacks, AC/DC, DC/DC, DC/AC Converters, Motor Drives and Controls, Battery Chargers, AC Phase Controllers, Ultra-Precise Power Supplies, High Power Rectifier Bridges, Fiberoptic Interfaces, Snubber Boards and Gate Driver Boards for IGBTs, SCRs and MOSFETs, along with a full complement of high power semiconductor assemblies, heatsink kits and clamps.

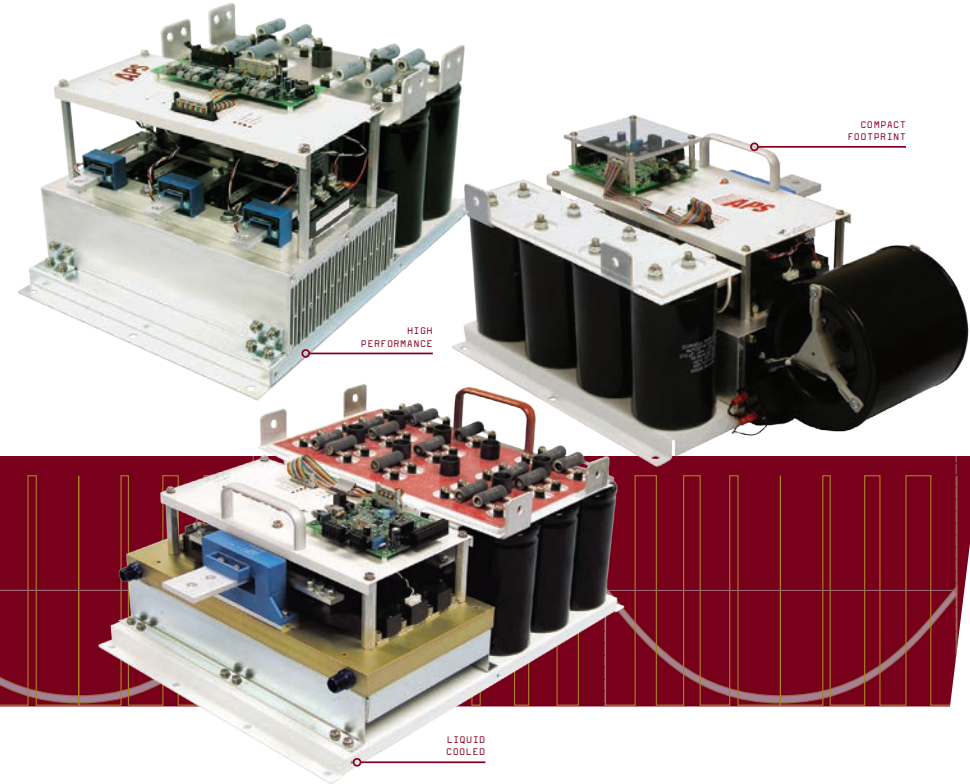


APPLIED POWER SYSTEMS, INC.
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Integrated Advanced PowerStacks

From simple plug-and-play to advanced **total control** IGBT power stacks.



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HIGH PERFORMANCE

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40W267 Keslinger Road / P.O. Box 393
LaFox, IL 60147-0393



Advanced PowerStacks

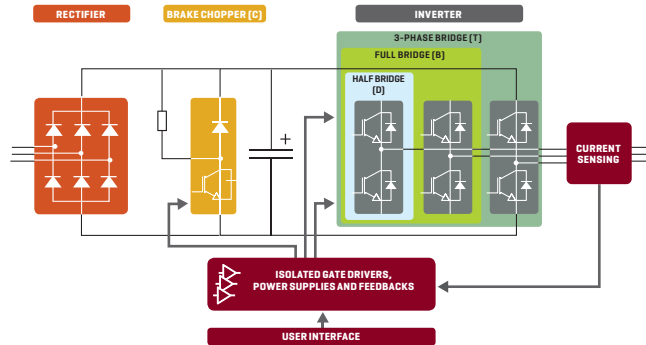
Fully Integrated IGBT PowerStacks
Rated from 10kW to over 500 kW

PowerStack OVERVIEW

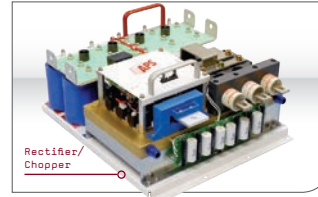
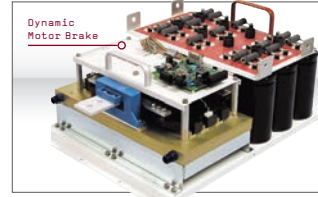
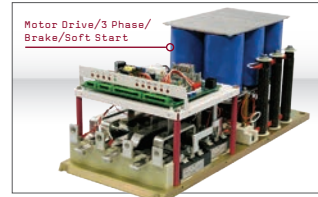
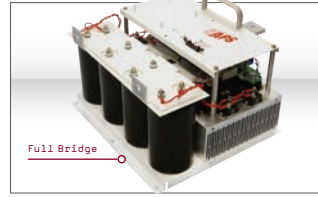
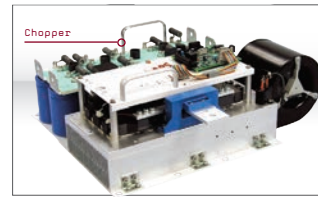
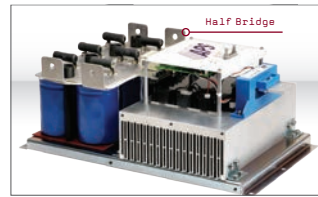
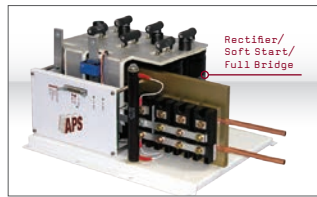
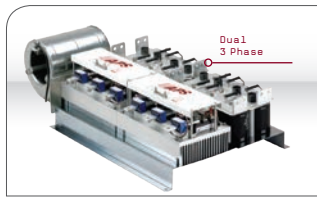
- Fully integrated
- Rated from 10kW to over 500kW
- Modular design (rectifier/DC-link/inverter)
- Incorporates IGBT modules on optimized thermal platforms with laminated planar busbars, DC link capacitors, open- or closed-loop current sensors, isolated gate drivers, isolated gate drive power supplies, resistors and cooling systems
- Available in all circuit configurations and topologies; half bridge, full bridge, chopper, single-phase bridge and complete 3-phase bridge
- Can be connected in parallel for higher output power
- Easily scalable to accommodate different size IGBTs while providing safe and reliable operation in power inverter applications controlling currents ranging from tens to thousands of amps

PowerStack shortens customer development cycle time and lowers cost by providing drop-in, fully tested IGBT power stacks integrating power components, gate drivers and heat sink in a single unit. These modular IGBT stacks offer cost effectiveness and improve system reliability. Integrated IGBT PowerStacks enable fast time to market in challenging market environments.

INTEGRATED POWERSTACK



FEATURES	HIGH PERFORMANCE
<ul style="list-style-type: none"> Advanced RealTime Protection for: <ul style="list-style-type: none"> OverCurrent Short Circuit OverVoltage OverTemperature UnderVoltage lockout Desaturation detection Fault reporting Soft overcurrent shutdown Optimized deadtime generation Active Miller clamp DC Link Voltage feedback Phase Current feedback Temperature feedback Up to 20kHz operation Air or liquid cooled 	<p>High performance PowerStacks are available in a small footprint with high power output; nominal currents up to 2800A are available to realize compact inverter systems.</p>
	REAL-TIME PROTECTION
	Monitors all key operating parameters to maintain specified limits and perform fail-safe shutdown.
	DESIGN FLEXIBILITY
	System manufacturers can implement fast and smooth design-ins for high volume solar, wind, hybrid electric vehicle high-power uninterruptible power supply and high-efficiency motor drive applications.
	MODULARITY
	Easy paralleling allows multiple PowerStack inverters to be connected in parallel to support higher power applications.
	CUSTOMIZATION
	<p>Customized designs can be provided to meet specific requirements to complement existing off-the-shelf PowerStacks. Options include fans for forced air cooling, liquid cooling, fiberoptic interfaces and snubbers. Based controlled solutions can be provided with analog- or digital-comb controller boards and DSP controllers.</p> <p>APS also offers Diode and SCR-based rectifier products; buck and boost converters; or customized systems specific to your needs.</p>



Total INTEGRATION - PowerStacks provide IGBTs on an optimized thermal platform with a very low inductance laminated busbar and choice of electrolytic or film capacitor banks. PowerStacks integrated gate drivers provide optimized dead time generation and safe electrical isolation between primary and secondary side for all switching, control and monitoring functions. This saves the user costs of adding expensive circuits for electrical isolation.

Total PROTECTION - PowerStacks incorporate the industry's leading fault protection suite to ensure they operate safely and within specified limits. By monitoring phase current, DC link voltage, IGBT on-state voltage and operating temperature, PowerStacks provide real-time protection and safely shut down when any fault is sensed.

Total CONTROL - Phase currents, DC link voltage and operating temperature are continuously monitored. Isolated analog signals of all operating parameters are fed back to the customer for real-time monitoring and control which allows system designers to quickly and easily develop highly efficient and intrinsically safe applications.

Designed with attention to supply chain logistics, both standard and customer-specific designs are implemented with an eye towards preventing reliance on any single supplier which prevents supply chain disruptions and eliminates sole-source components.

PowerStacks ORDERING GUIDE

IGBT POWERSTACK
IAP = Air Cooled
IAPL = Liquid Cooled

RATED OUTPUT CURRENT
2-4 digits of output current rating

CIRCUIT CONFIGURATION
B = Full Bridge
C = Chopper
D = Half Bridge
T = Three Phase

Product # I A P 1 0 0 T 1 2 0 H - X X

RATED DEVICE VOLTAGE
060 = 600V
120 = 1200V
170 = 1700V

THERMAL PERFORMANCE
BLANK = Standard Heatsink
H = High Performance Heatsink

OPTIONS
01 = Blower
02 = Half-Control SCR Rectifier Input
04 = Full-Control SCR Rectifier Input
06 = Diode Rectifier Input
08 = Dual Inverter
10 = Fiberoptic Interface
20 = Soft-Start
40 = Full Controls

75	900
100	1000
150	1200
200	1400
300	1600
400	1800
450	2000
600	2400
800	2800