



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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GE



End-to-End Embedded Power

Product Selection Guide



Critical Power

Who We Are

At GE's Critical Power business we help our data center, computing, communications and digital content-provider customers wrestle with the exponential and insatiable demand for ever-increasing data, communications and processing capacity.

Our customers challenge us to efficiently and reliably power increasing capacity, and to quickly scale better and smarter data infrastructures – with power solutions that keep their energy costs in check and ensure that data and applications flow 24x7.

What We Do

Embedded Power

- Products for AC-DC OEM embedded power for datacom, telecom, medical and industrial applications.
- Products for DC-DC OEM conversion for board mounted power applications in communications, computing, storage, industrial, medical and military markets.
- Full custom capabilities in both AC-DC and DC-DC product lines.

Power Switching

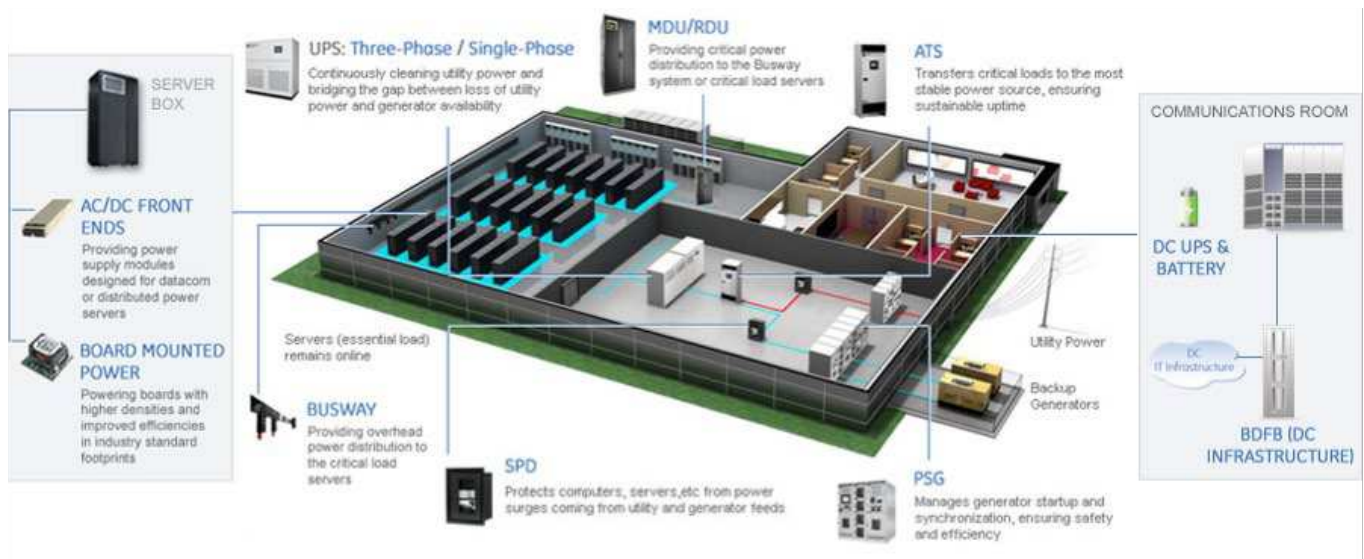
- Products for emergency standby, back-up power supply management and spike or surge protection plus installation and maintenance services for markets including datacenters, hospitals, telecommunications, financial institutions, transportation and industrial applications.

Uninterruptible Power Supplies (UPS)

- Products and services to provide a continuous supply of power and conditioning for mission-critical applications plus global installation and maintenance services in markets including datacenters, hospitals, financial institutions, telecommunications networks, wind energy, transportation and industrial.

DC Energy Systems

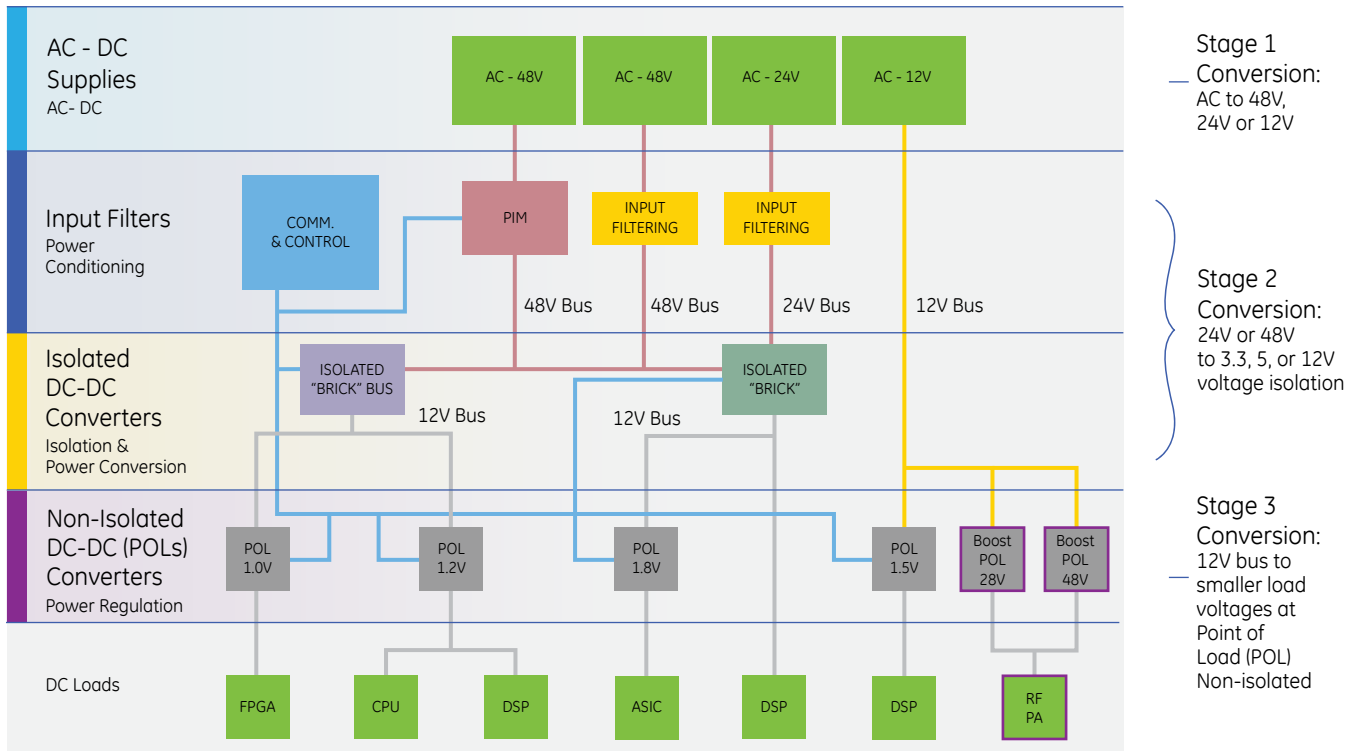
- Solutions for telecommunications, wireless and cable broadband service providers that leverage our extensive experience in turnkey project management, engineering, installation and maintenance services.



GE's Critical Power business brings end-to-end power solutions for a variety of markets including data centers, as in the example above.

Embedded Power Total Power Solution

GE's Critical Power business provides end-to-end power solutions that offer size, efficiency and cost advantages while reducing risk with standards-based power components.



Distributed Power Architecture (DPA)

- The Distributed Power Architecture (DPA) is commonly used on today's circuit pack designs. The DPA has replaced multiple isolated power supplies with one single power supply that feeds multiple point of load (POL) converters. The DPA has brought with it the benefits of lower cost, weight, and space along with a better quality of power. Shown above is a typical DPA architecture.
- In Stage 1 of power conversion, an AC-DC power supply is used to convert a line voltage to a DC bus voltage of 48V, 24V, or 12V to the circuit pack
- If 48 or 24V is fed to the circuit pack, the power rail is then converted to 12V or 5V through an isolated DC-DC converter. This is what we call stage 2 conversion. As a side note, if 12V is fed to the circuit pack as shown on the right side of the circuit pack, the isolated converter used in Stage 2 is not required. Conversion can proceed directly to Stage 3.
- Stage 3, the final conversion stage, is used to reduce the 12V or 5V bus to the various voltages required to drive the individual semiconductor loads.
- Total Efficiency is the product of efficiency from each stage multiplied together:
(Stage 2) 94% * (Stage 3) 93% = 89% Total Efficiency
- DPA is valuable because it
 - Provides customers with standard product solutions
 - High efficiency solutions are available that are competitive with older single-stage solutions
 - Provides greater system flexibility to mix and match load voltages from a single voltage bus

See How Our Line Of Embedded Power Solutions “Fit” Your Design Needs

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Total Cost of Ownership:

GE Critical Power Embedded Power products and solutions create AC-DC and DC-DC power solutions that give back valuable printed circuit board and server cabinet real estate to system designers.

In communications, data center and super computing markets, where exponential growth in processing capacity is matched with growing power requirements, we engineer many of the industry’s most compact and efficient power solutions – designed to take advantage of unusable board or cabinet space.



Vertical Industry Solutions

GE's Critical Power business power solutions are used in thousands of applications across a broad array of global industries:

- Data Centers
- Integrated Solutions
- Broadcasting
- Smart Buildings
- Displays, Lighting and Signage
- Aerospace and Aviation
- Industrial Automation and Process Control
- Medical Devices
- Instrumentation, Test and Measurement
- Robotics

Data Centers

With close to half the total cost of power for a data center being utilized for cooling, the importance of utilizing power products that are highly efficient takes on an ever more critical role. Operators demand not only efficiency and density, they also require their power solutions to be smart. The GE Total Efficiency* (TE) architecture reduces energy loss and lowers cooling costs, as well as addresses issues from the electrical service entrance to the building all the way down to the point of loads on the motherboard. GE Critical Power offers true end-to-end consideration of power optimization based on our proven experience and expertise in batteries, power distribution, surge protection, DC energy systems, AC-DC power supplies, and DC-DC board mounted power. Our goal is to deliver a solution that is more safe, reliable and energy efficient than alternatives from our competitors.

Integrated Solutions

Data Center power infrastructure can be complex to integrate and optimize. Data centers can also consume a large amount of space requiring big amounts of power to be distributed across long distances. In short, the power solutions must be tightly integrated and work seamlessly with the infrastructure, the network and the data equipment to not only help reduce operating costs, but to also help conserve space.

Whatever the requirements, GE engineers can help design a highly efficient and integrated solution that serves the entire data center, not just portions. By engaging with GE to integrate the entire solution, data center operators can be assured that care will be taken to make the entire data center efficient, not just the individual power conversion steps. For example, GE can evaluate the entire power budget and help design solutions that reduce conversion steps that result in unnecessary energy loss. GE can also recommend highly efficient power distribution schemes which result in a lowering of overall distribution energy losses while increasing network reliability.



Vertical Industry Solutions (Cont.)

Broadcasting

TV and radio transmitters are likely to be one of the more costly items that a typical station owns, not only in its initial purchase price, but also due to on-going operational costs. The electrical power efficiency of the transmitter plays an important part in the overall total cost of ownership (TCO) equation. Early digital TV transmitters had a power efficiency in the 15% to 18% range. This means that a 10kW transmitter consumed about 66kW of electrical energy, converting only 10kW of that energy to useful RF and 56kW as waste heat. For digital television, several power amplifier techniques have been developed that dramatically improve efficiency. Broadcast manufacturing industries are taking important steps and investing in new technologies to improve efficiency and reduce the TCO for TV and radio transmission systems. As newer and more efficient solid state RF devices become available, they allow designers to integrate them with other energy saving techniques to further improve overall efficiency. Today, advanced PA technology along with more efficient power supplies, optimized cooling systems and other techniques are combined for optimized solutions. On-going development will lead to even higher efficiency transmission systems in the future.

Smart Buildings

In many of today's smart buildings, power is being shifted from the devices that once required separate AC power, to devices that can both communicate and be powered over a single Power over Ethernet (PoE) cable. Enterprise devices such as badge scanners, 802.11n wireless access points, laptops, RFID device, pan-tilt-zoom security cameras, video phones and point-of-sale terminals take advantage of GE's PoE rectifiers, the CP2000AC54TEP, CP2725AC54TEP and MPR0854FP. These rectifiers provide 48 volt power required for smart building systems. The new solutions have a highly reliable, hot-pluggable and hot-swappable footprint and are easily integrated into switch architectures that support multiple redundant rectifiers on a common DC bus, in various redundancy schemes including N+1 or N+N arrangements. In addition, flexible communication interfaces allow the switch designer to choose the most effective way to communicate with the power supplies. Enterprise customers benefit from a solution specifically created for highly redundant environments, thereby reducing operating and service costs.

- Building Security Systems
- Fire Safety Systems
- HVAC Systems
- Video Surveillance

Displays, Lighting and Signage

With the ever increasing demand for more efficient lighting solutions, LED lighting requires both constant-voltage and constant-current for its products. GE's power modules for lighting applications feature shielding from power disturbances, ruggedized designs, high efficiencies and high reliability in a small form factor. The open frame and conduction cooled fanless AC-DC rectifiers such as CLP0224, CCR0512 are also suitable for outdoor lighting and signage applications, as are the wide-input voltage ProLynx* Point of Load modules.

- Backlighting
- Indoor Lighting
- Outdoor Multimedia Displays
- Digital Signage
- Stadium Lighting
- Solar Lighting

Vertical Industry Solutions (Cont.)

Aerospace and Aviation

Electronics in the aviation industry are rapidly requiring increased capability and complexity while demanding a more compact design. Ranging from cockpit avionics and lighting systems to elaborate multimedia entertainment systems for commercial jets, the need for small, efficient, and reliable power electronics modules is critical. These new systems need a mixture of voltages and control frequencies. As design engineers continue to integrate more functionality into their innovative designs, the ability to support a complex mixture of output voltages will become even more important. Using standard, commercially available power supplies yields space savings, simpler designs, and less cabling when the DC output is fed directly into the backplane as opposed to using an external power supply. GE's SlimLynx* Point of Load modules provide industry-leading power density and efficiency, in a slim and compact form factor.

- Cockpit Avionics
- Aircraft Control Panels
- In-Flight Entertainment (IFE)
- Navigation Systems
- Lighting Systems



Vertical Industry Solutions (Cont.)

Industrial Automation and Process Control

Industrial automation uses information technology and control systems to manage machinery, valves, actuators and assembly lines, therefore reducing the need for human intervention and eliminating costly errors. Power supplies for industrial automation and control applications require a wide operating temperature range and extended shock and vibration testing. GE's power modules offer sequencing, reliability, and remote on/off facilities to ensure continuous efficient operation in the power design. Our ruggedized power supplies meet MIL STD 810F for extended shock and vibration testing, up to 50Grms, offer excellent thermal management up to 105°C, and maintain low ripple/noise operation. The industrial AC-DC rectifiers from GE such as the CAR0424 and CLP0224 deliver 24V as output voltage suited to operate valves and actuators, and work with the wide input ProLynx* Point of Load modules to simplify board design. GE's Tranquell* DIN Rail Series Surge Protective Devices help minimize power-related problems by protecting sensitive automation control equipment from harmful transients.

- Conveyor Systems
- Motor Control Applications
- Factory Automation (PLCs)
- Switching Systems
- Transportation / Railway
- Remote Monitoring Equipment
- Security Systems
- Human Machine Interface

Medical Devices

Sophisticated power solutions for ultrasound, dialysis, and diagnostic equipment require stringent parameters such as low output ripple and EMI noise, which, if left unconditioned, can disrupt the performance and accuracy of the end equipment. These highly sensitive systems require more sophisticated power solutions – a key strength for GE's Critical Power business. Given the sometimes long FDA approval cycles in the healthcare industry, our expertise in powering medical products provides solutions to complex system requirements which enable designers to improve product cycle times while reducing their time-to-market. The DLynx* Point of Load modules efficiently power circuit board electronics and accelerate product development schedules.

- Laboratory and Analytical
- Eye Care Equipment
- Medical Imaging
- Dental Equipment

Instrumentation, Test and Measurement

Test and measurement systems are ubiquitous in electronic devices and maximize the productivity of engineers and technicians responsible for packaged-part characterization in applications ranging from early device research through development, quality verification, and failure analysis. Automated test equipment systems are routinely used in electronics manufacturing operations, the semiconductor industry, and factory environments. GE's DLynx* and DLynx II* Point of Load power modules provide the power designer the latest tools and performance for power, with key features such as increased current, increased accuracy, and extended PMBus™ command set.

- Semiconductor Test Equipment
- Automated Test Equipment
- Oscilloscopes
- Microscopes

Robotics

Power supplies for robotics applications require small size, high levels of shock and vibration resistance and a wide operating temperature range. A high degree of efficiency and reliability is also necessary. The GE DLynx* family provides some of the most compact Point of Load DC-DC converters available with outstanding performance, control, and reliability.

- Manufacturing Systems
- Gantry Robots
- Industrial Robots
- Packaging Systems
- Warehouse Management





ATENÇÃO:
NÃO ABRA QUANDO
ENERGIZADO

TESTE DE RICO
Tecla F4

Controlador Programável

>	7	8	9	▲
<	4	5	6	▼
F1	1	2	3	F3
F2	N/S	0	EV	F4

PST + EXT
- RST

PST + EXT
- RST

PST + EXT
- RST

PST + EXT
- RST

EMERGÊNCIA



NÍVEL BAIXO



TANQUE

Industrial Products

CC1600 (1600W, 52Vout) AC-DC Fanless, Sealed, Potted & Conduction Cooled

Features

- Compact form factor with 16W/in³ density
- 11.52" (L) x 5.29" (W) x 1.83" (H) (includes connector length)
- Rugged for outdoor and indoor applications
- Standalone and mountable
- Input and Output Connector block for easy connections
- Efficiency greater than 94% (for high line)
- 1600W from nominal 200-240Vac @ 55C baseplate
- 1200W from nominal 120-120Vac @ 45C baseplate
- Output voltage programmable from 42V-58Vdc
- Floating output for positive and negative polarity
- DC-OK external LED signal
- Over-temp protection, Under voltage, Over-voltage protections
- Remote ON/OFF control of the main output via RS485
- Precision measurement reporting of input/output voltage and current
- Power factor correction meets EN/IEC 61000-3-2 and EN60555-2
- Redundant, parallel operation with active load sharing
- UL ,CSA C22.2 , VDE/TUV compliance
- CE & RoHS2 compliant
- ESD Level4: 8KV_{contact}/15KV_{air}
- Lightning surge Level4: 4KV_{common}/2KV_{diff}



Comcode: CC1600AC52SXZ01A

Applications:

- Outdoor Lighting
- Telecom
- Broadcast
- Laser

Industrial Products (Cont.)

CC3500

The CC3500AC52FB family of power supplies have an extremely wide programmable output voltage capability. Featuring high-density, fully enclosed, fan-less conduction-cooled packaging, it is designed for minimal space utilization and is highly expandable for future growth. This completely silent power supply incorporates both RS485 and dual-redundant I2C communications busses that allow it to be used in a broad range of applications.



Feature-set flexibility makes this power supply an excellent choice for applications requiring operation over a wide output-voltage range. It's robust design is intended for rugged applications where temperature extremes may be experienced. Electrical user interfaces are designed for extreme simplicity and quick installation.

MODEL	INPUT	COOLING	INPUT RANGE(V)	VOUT	IOUT	EFFICIENCY
CC3500AC52FB	AC Rear, Blind Mate	Fanless Conduction	80-185V 185-265V	18-53V	Low Line 28.3/28.9A @ 52V High Line 66/67.3A @ 52V Folds Back below 42V	96%
CC3500AC52FB-ES	AC Rear, Direct Wire	Fanless Conduction	80-185V 185-265V	18-53V	Low Line 28.3/28.9A @ 52V High Line 66/67.3A @ 52V Folds Back below 42V	96%
CC3500AC52FB-EC	AC Rear, C19	Fanless Conduction	80-185V 185-265V	9518-53V	Low Line 28.3/28.9A @ 52V High Line 66/67.3A @ 52V Folds Back below 42V	96%

Features and Benefits

- Conduction Cooled Fan-less Operation
- Ruggedized for Temperature Extremes
- Silent Running
- Wide Range Output
- Can be Paralleled for Load Sharing
- Designed for Adaptation to Cold Plate or Heat Sink
- Blind-Mate version
- Simple Screw Terminal Version
- Ability to Charge Batteries
- PMBus/I2C or RS485 Communications Capable
- High Efficiency 95%+

Industrial Products (Cont.)

Hornet Voltage Regulator

Hornet family of non-isolated board mounted switching regulators are easy to use, fully integrated power modules for demanding industrial conditions. With highly accurate output voltage setting, high efficiency, exceptional power density, extended temperature range for extreme environments and proven high reliability, Hornet switching voltage regulators are well suited for industrial applications.



Hornet series includes step-down/buck regulators that deliver 11 to 108W maximum power and step-up/boost regulators that deliver 65W maximum power.

Step Down SMT

MODEL	INPUT RANGE(V)	OUTPUT RANGE(V)	TEMP. RANGE / MIL. ST 810F	MAX POWER (W)	MAX CURRENT (UP TO) (A)	FOOTPRINT (MM)	EFFICIENCY (UP TO)
IND016	12V±20%	0.6-5.5	-40 - 105°C / 40G	16.5	3	12.2x12.2	94%
IND033	12V±20%	0.6-5.5	-40 - 105°C / 40G	33	6	12.2x12.2	94%
IND066	12V±20%	0.6-5.5	-40 - 105°C / 40G	66	12	12.2x12.2	95%
IND072	12V±20%	0.6-3.3	-40 - 105°C / 40G	72.6	20	12.2x12.2	94%
IND080	12V±20%	0.6-2.0	-40 - 105°C / 40G	80	40	13.5x33	92%
IND027W	12V±20%	3.0-9.0	-40 - 105°C / 40G	27	3	11.4x20.3	96%
IND045W	12V±20%	3.0-9.0	-40 - 105°C / 40G	45	5	11.4x20.3	94%
IND108W	12V±20%	3.0-9.0	-40 - 105°C / 40G	108	12	13.5x33	95%
IND027XW	24V±20%	3.0-18.0	-40 - 105°C / 40G	27	3	11.4x20.3	96%
IND045XW	24V±20%	3.0-18.0	-40 - 105°C / 40G	45	5	11.4x20.3	96%
IND108XW	24V±20%	3.0-18.0	-40 - 105°C / 40G	108	12	13.5x33	97%

Step Down Through Hole

MODEL	INPUT RANGE(V)	OUTPUT RANGE(V)	TEMP. RANGE	MAX POWER (W)	MAX CURRENT (A)	FOOTPRINT (MM)	EFFICIENCY (UP TO)
IND011SIP	12V±15%	0.6-5.5	-40 - 85°C	11	10	8.1x10.4	93%
IND060SIP	12V±15%	0.6-5.5	-40 - 85°C	60	2	8.4x10.4	93%

Boost / Step Up SMT

MODEL	INPUT RANGE(V)	OUTPUT RANGE(V)	TEMP. RANGE	MAX POWER (W)	MAX CURRENT (A)	FOOTPRINT (MM)	EFFICIENCY (UP TO)
ND065BHV	12V±20%	32-54	-40 - 85°C	65	4.06	11.4x27.9	94.5%
IND065BLV	12V±20%	16-34	-40 - 85°C	65	2.03	11.4x27.9	94%

Industrial Products (Cont.)

Hornet Voltage Regulator (Cont.)

Features and Benefits

- Suitable for extreme environments (-40°C to 105°C extended temperature range, operating shock per Mil Std. 810F to ±40G, and operating vibration per Mil Std. 810F for selected SMT parts)
- High reliability (qualified with 1000h High Temperature Operating Bias (HTOB), 1000h 85RH/85°C Temperature Humidity Bias (THB), 700 cycle -40 to 125°C Thermal Cycling (TC) testing.)
- Suitable for conformal coating with dip or vapor deposition. Conformal coating can provide the protection to meet Salt Fog Test per IEC 60068-2-52 (Severity 3) and Mixed Gas Flow Test per Telcordia GR-3108 Outdoor Levels
- Outstanding transient response for powering demanding loads
- High efficiency (up to 97%)
- Easy to use complete modules enabled fast design cycle and rapid TTM (Time To Market)
- Planned availability for a minimum of 10 years from product launch
- 3 year warranty, backed by GE's proven quality processes

Applications

Automation equipment, factories and manufacturing, water treatment facilities, energy exploration and refineries, building and process controls systems and automation equipment, control cabinets and rooms, conveying equipment, vending machines, material handling and packaging equipment, chemical processing plants, HVAC (heating, ventilating and air conditioning) equipment, machinery and irrigation technology.

Industrial Products (Cont.)

Resilient 3000

The RESILIENT 3000 power supply has extremely robust capability yet is easy to use, economical and has low up-front cost. Featuring high-density, ruggedized enclosure, it features an oversize high reliability fan, conformal coating and it is designed to operate over a wide temperature range. It can function either as a stand-alone power supply or it can be connected in parallel with other power supplies and managed by RS485.



Feature-set flexibility makes this power supply an excellent choice for applications requiring operation over a wide output-voltage range or for charging batteries. Its solid design is intended for rugged applications where poor AC grid conditions and temperature extremes may be experienced. The electrical user interfaces are designed for extreme simplicity for quick installation and turn-up.

MODEL	INPUT	COOLING	INPUT RANGE (V)	VOUT	IOUT	EFFICIENCY
EP3000AC48INZ	AC Rear, C19	Fan, Front to Back Airflow	90-290V	48-58V	55.5A @ 54V	95%

Features and Benefits

- Low Cost of Ownership
- Oversized high reliability fan
- Conformal Coated for use in dirty environments
- Ruggedized for Temperature Extremes
- Ruggedized for dirty AC grid conditions
- Wide Range Output
- Can be Paralleled for Load Sharing
- Simple Installation, Simple Operation
- Ability to Charge Batteries
- RS485 Communications Capable
- High Efficiency 95%+

High Voltage DC Power Family

Introducing a new family of High Voltage DC Power ready for work in the most demanding Data, Computing and Industrial applications. The family supports those applications where power density and efficiency is most critical. Standards based 380V power provides the energy needed while minimizing infrastructure costs by reducing power distribution costs and enabling energy to travel greater distances without incurring voltage drop. Designers will appreciate the density gains that using less copper will facilitate.

The CC12500 and CH12500 rectifier convert readily available 3-phase Industrial power to 380V DC for distribution to your system. These rectifiers are highly efficient and are optimized for being configured into dense power distribution solutions. For example, both power supplies are completely fanless and conduction cooled. The CH12500 is designed to be mated to a customer supplied cold plate or a finned heatsink kit is available for field installation allowing customers to use their own system fan for cooling. On the other hand, customers who already have liquid cooling in their application will appreciate the CC12500 which has a fully integrated liquid cooled built in.

The downstream component of the family consists of high voltage DC Power Entry Modules which convert the 380V DC power to 48V for use with most of today's data and Industrial equipment. We call this family the "CP-short" because it contains the familiar topology used in the CP product line which has proven so reliable, but it is packaged in a much more dense 280mm footprint. These fan cooled modules are not only compact, they are versatile as well. First, they are ready for future migration to 380V because they can be power by Universal AC Line voltage or by 380V DC input. They are ready to switch over from AC to High Voltage DC whenever you are, thereby minimizing your HVDC upgrade costs. They add further versatility by having airflow direction agility. They support front to back or back to front airflow direction. The model names are CP3000HV54TEZ-FSG (back to front airflow) and CP3000HV54TEZ-FSGR (front to back airflow).

Finally, the family is being rounded out by adding 380V DC board mounted bus converter modules in the near future.



CC12500 and CH12500 Rectifiers Features and Benefits

- 12.5kW, 360-380V DC Output, 96% Efficiency
- AC Input 3-wire, 3ph-400/480VAC
- Hot Plug, Hot Swap, with Redundant Safety Interlock
- Conduction Cooled with Optional Finned Heatsink
- Water Cooled with Dripless Quick Disconnect

- High Resistance Mid-Point Ground (HRMG) ± 190 VDC Output
- Internal HRMG Fault detector circuit
- RS-485 Communication Protocol
- Integrated heatplate, ready for mounting to cold wall

CP3000 "Short" Features and Benefits

- 3.0kW, 48-56V DC Output, 97% Efficiency
- Dual Rated AC or HVDC Input
- AC Input, 1ph, 80-264VAC
- DC Input, 180-400VDC
- Input Connector Rated for Both AC and HVDC

- Hot Plug, Hot Swap
- Super Compact Design
- Front to Back or Back to Front Airflow
- PMBus/I2C Communications

MODEL	INPUT	COOLING	INPUT RANGE (V)	VOUT	IOUT	EFFICIENCY
CH12500H3C380TEZ-GM	AC REAR	CONDUCTION	360-509VAC 3PH D	365-400VDC	33A	96%
CC12500H3C380TEZ-GM	AC REAR	WATER	360-509VAC 3PH D	365-400VDC	33A	96%
CP3000HV54TEZ-FSG	"AC or DC, Front, Anderson Saf-D-Grid"	FAN, BACK TO FRONT AIRFLOW	"90-264VAC 1PH or 180-400VDC"	48-56VDC	55A	96%
CP3000HV54TEZ-FSGR	"AC or DC, Front, Anderson Saf-D-Grid"	FAN, FRONT TO BACK AIRFLOW	"90-264VAC 1PH or 180-400VDC"	48-56VDC	55A	96%

AC-DC and DC-DC Power Supplies

Product Matrix

	MODEL	NOMINAL OUTPUT (NEGATIVE)	INPUT	DIGITAL COMM.	PROFILE	NOMINAL INPUT	MAX OUTPUT	200W	500W	1KW	1.5KW	2KW	2.5KW	3KW	3.5KW
OPEN FRAME AC-DC POWER SUPPLIES	CLP0112FP	12V	Top	Not Available	Open Frame	1PH (110/220vac)	150W	■							
	CLP0205FP	5V	Top	Not Available	Open Frame	1PH (110/220vac)	200W	■							
	CLP0212FP	12V	Top	Not Available	Open Frame	1PH (110/220vac)	200W	■							
	CLP0228FP	28V	Top	Not Available	Open Frame	1PH (110/220vac)	200W	■							
	CLP0224FP	24V	Top	Not Available	Open Frame	1PH (110/220vac)	200W	■							
	CLP0412FP	12V	Top	Not Available	Open Frame	1PH (110/220vac)	450W	■							
	CLP0424FP	24V	Top	Not Available	Open Frame	1PH (110/220vac)	450W	■							
	CLP0448FP	48V	Top	Not Available	Open Frame	1PH (110/220vac)	450W	■							
	FLP0412FP	12V, 24V 5V, 3.3V	Top	Not Available	Open Frame	1PH (110/220vac)	450W	■							
	CLP0512FP	12V	Top	Not Available	Open Frame	1PH (110/220vac)	450W	■							
AC-DC AND DC-DC FRONT ENDS (12 VOUT)	CAR0512FP	12Vdc	Rear	I2C/PMBus	1U	1PH (110/220vac)	500W	■							
	MPR0712TE	12Vdc	Rear	I2C/PMBus	1U	1PH (110/220vac)	700W	■							
	SLP0712TE	12Vdc	Front	I2C/PMBus	1U	1PH (110/220vac)	750W	■							
	CAR0812FP	12Vdc	Front	I2C/PMBus	1U	1PH (110/220vac)	850W	■							
	CAR0812DC	12Vdc	Front	I2C/PMBus	1U	48Vdc	850W	■							
	CAR1212DC	12Vdc	Rear	I2C/PMBus	1U	48Vdc	1200W	■							
	CAR1212FP	12Vdc	Rear	I2C/PMBus	1U	1PH (110/220vac)	1250W	■							
	CAR1612FP	12Vdc	Front	I2C/PMBus	1U	1PH (110/220vac)	1600W	■							
	CAR1812FP	12Vdc	Front	I2C/PMBus	1U	1PH (110/220vac)	1800W	■							
	CAR2012TE	12Vdc	Front	I2C/PMBus	1U	1PH (110/220vac)	2000W	■							
	CAR2512TE	12Vdc	Front	I2C/PMBus	1U	1PH (110/220vac)	2500W	■							
	CAR2512DC	12Vdc	Front	I2C/PMBus	1U	48Vdc	2500W	■							
	CAR3012FP	12Vdc	Front	I2C/PMBus	1U	1PH (110/220vac)	3000W	■							

Open Frame Power Supply

CLP Open Frame Power Supply

In a 2 x 4 inch footprint smaller than an iPhone®, the 12Vdc single-output CLP0212 open frame power supply delivers 80 PLUS® Gold energy efficiency. Half the size of other power supplies in this segment, the CLP series is specifically designed to handle power challenges associated with tight space and low airflow. Offering a leading 18W/in³ power density in a 1U high, fanless form factor, the CLP series addresses a broad range of applications in new products from communications, computing and data storage original equipment manufacturers.



MODEL	SIZE (W x L x H)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFFICIENCY
CLP0112FP	2" x 4" x 1.4"	90-264V	12V	150W	90%
CLP0205	2" x 4" x 1.4"	90-264V	5V	200W	90%
CLP0212FP	2" x 4" x 1.4"	90-264V	12V	200W	90%
CLP0224FP	2" x 4" x 1.4"	90-264V	24V	200W	90%
CLP0228	2" x 4" x 1.4"	90-264V	28V	200W	90%
CLP0412FP	3" x 5" x 1.4"	90-264V	12V	450W	91%
CLP0424FP	3" x 5" x 1.38"	90-264V	24V	450W	91%
CLP0428FP	3" x 5" x 1.38"	90-264V	48V	450W	90%
CLP0512FP	3" x 6" x 1.38"	90-264V	12V	550W	90%
FLP0412FP	3" x 7" x 1.45"	90-264V	12V/24V/5V/3.3V	450W	90%

Metal cover for the Open Frame CLP products are available. Please contact your GE Sales Team for more details.

1 Breakthrough Compact Design
GE's breakthrough design is 2x4. Less space but more power.

2 Reliable Fanless Cooling Feature
Conduction and convection cooling. No moving parts to fail.

3 High Power Density Solution
It can power a small router or a large outdoor billboard.

4 Wide Operating Temp For Harsh Conditions
Extended operating temperature range of -40C to 70C.

5 High Efficiency
Higher efficiency leads to lower operating expenses.

6 Integrates Easily Into Your Product Design
Compatible, compact, flexible and safe. Easily mounted in chassis.

Front End Power Supplies



CAR0812FP

- 850 watts / 12Vout
- Efficiency of 92%
- Power density of 18W/in³
- Universal AC input range with active PFC
- 8.73 x 3.38 x 1.65" / 221.7 x 85.9 x 41.9mm
- I²C / PMBus™ digital interface

CAR0812DC

- 850 watts / 12Vout
- Efficiency of 92%
- Power density of 18W/in³
- 36 – 75Vdc input range
- 8.73 x 3.38 x 1.65" / 221.7 x 85.9 x 41.9mm
- I²C/PMBus™ digital interface

CAR1212FP

- 1,200 watts / 12Vout
- High efficiency operation - up to 89%
- Power density of 16W/in³
- Universal AC input range with active PFC
- 11.20 x 4.00 x 1.65" / 284.5 x 101.6 x 41.9mm
- I²C / PMBus™ digital interface

CAR1212DC

- 1,200 watts / 12Vout
- High efficiency operation - up to 90%
- Power density of 16W/in³
- 36 - 75Vdc input range
- 11.20 x 4.00 x 1.65" / 284.5 x 101.6 x 41.9mm
- I²C / PMBus™ digital interface

CAR1612FP

- 1,600 watts / 12Vout
- Efficiency of 94.5%
- Power density of 20W/in³
- Universal AC input range with active PFC
- 12.45 x 4.00 x 1.65" / 316.23 x 101.6 x 41.9mm
- I²C / PMBus™ digital interface
- Mates with ACE164 shelf

CAR1812FP

- 1,800 watts / 12Vout
- Efficiency of 94%
- Power density of 22W/in³
- Universal AC input range with active PFC
- 12.45 x 4.00 x 1.65" / 316.23 x 101.6 x 41.9mm
- I²C / PMBus™ digital interface
- Mates with ACE184RUW shelf

CAR2012TE

- 2,000 watts / 12Vout
- Efficiency of 94.5%
- Power density of 22W/in³
- Universal AC input range with active PFC
- 12.89 x 4.00 x 1.61" / 327.46 x 101.6 x 40.89mm
- I²C / PMBus™ digital interface
- Mates with ACE184RUW shelf

CAR2012DC

- 2,500 watts / 12Vout
- High efficiency operation - up to 92%
- Power density of 25W/in³
- 36-75Vdc input range
- 15.38 x 4.00 x 1.65" / 390.5 x 101.6 x 41.9mm
- I²C / PMBus™ digital interface

Front End Power Supplies (Cont.)



CAR2512TE

- 2,500 watts / 12Vout
- Efficiency up to 94%
- Power density of 25W/in³
- Universal AC input range with active PFC
- 15.38 x 4.00 x 1.65" / 378.0 x 102.0 x 41.9mm
- I²C / PMBus™ digital interface

CAR0424FP

- 400 watts / 24Vout
- Efficiency up to 91% peak
- Top side fan
- Acoustic noise 45dbA
- 8.1 x 3.94 x 1.58" / 205.7 x 100.0 x 40.1mm
- Class B EMI (Conducted & Radiated)

CAR2024FP

- 2,000 watts / 24Vout
- High efficiency operation - up to 90.5%
- Power density of 21W/in³
- Universal AC input range with active PFC
- 14.25 x 4.00 x 1.65" / 316.2 x 101.6 x 41.9mm
- I²C / PMBus™ digital interface
- Mates with ACE204 shelf

CAR1248FP

- 1,200 watts / 48Vout
- High efficiency operation - up to 91%
- Power density of 19W/in³
- Universal AC input range with active PFC
- 11.20 x 3.44 x 1.65" / 284.5 x 87.4 x 41.9mm
- I²C / PMBus™ digital interface
- Mates with ACE125 shelf

CAR3012TE

- 3,000 watts / 12V out
- Efficiency - up to 96%
- Power density of 30W/in³
- 15.38 x 4.00 x 1.65" / 378.0 x 102.0 x 41.9mm
- I²C / PMBus™ digital interface

CAR2548FP

- 2,500 watts / 48Vout
- High efficiency operation - up to 91%
- Power density of 27W/in³
- Universal AC input range with active PFC
- 14.25 x 4.00 x 1.65" / 362.0 x 102.0 x 40.9mm
- I²C / PMBus™ digital interface
- Mates with ACE254 shelf

CAR2548TN

- 2,500 watts / -48Vout
- High efficiency operation - up to 91%
- Power density of 27W/in³
- Universal AC input range with active PFC
- 14.25 x 4.00 x 1.61" / 362.0 x 102.0 x 40.9mm
- I²C / PMBus™ digital interface
- Mates with ACE254 shelf

CAR2548DC

- 2,500 watts / 48Vout
- High efficiency operation - up to 91%
- Power density of 27W/in³
- 36-75Vdc input range
- 14.25 x 4.00 x 1.61" / 362.0 x 102.0 x 40.9mm
- I²C / PMBus™ digital interface
- Mates with ACE254 shelf

