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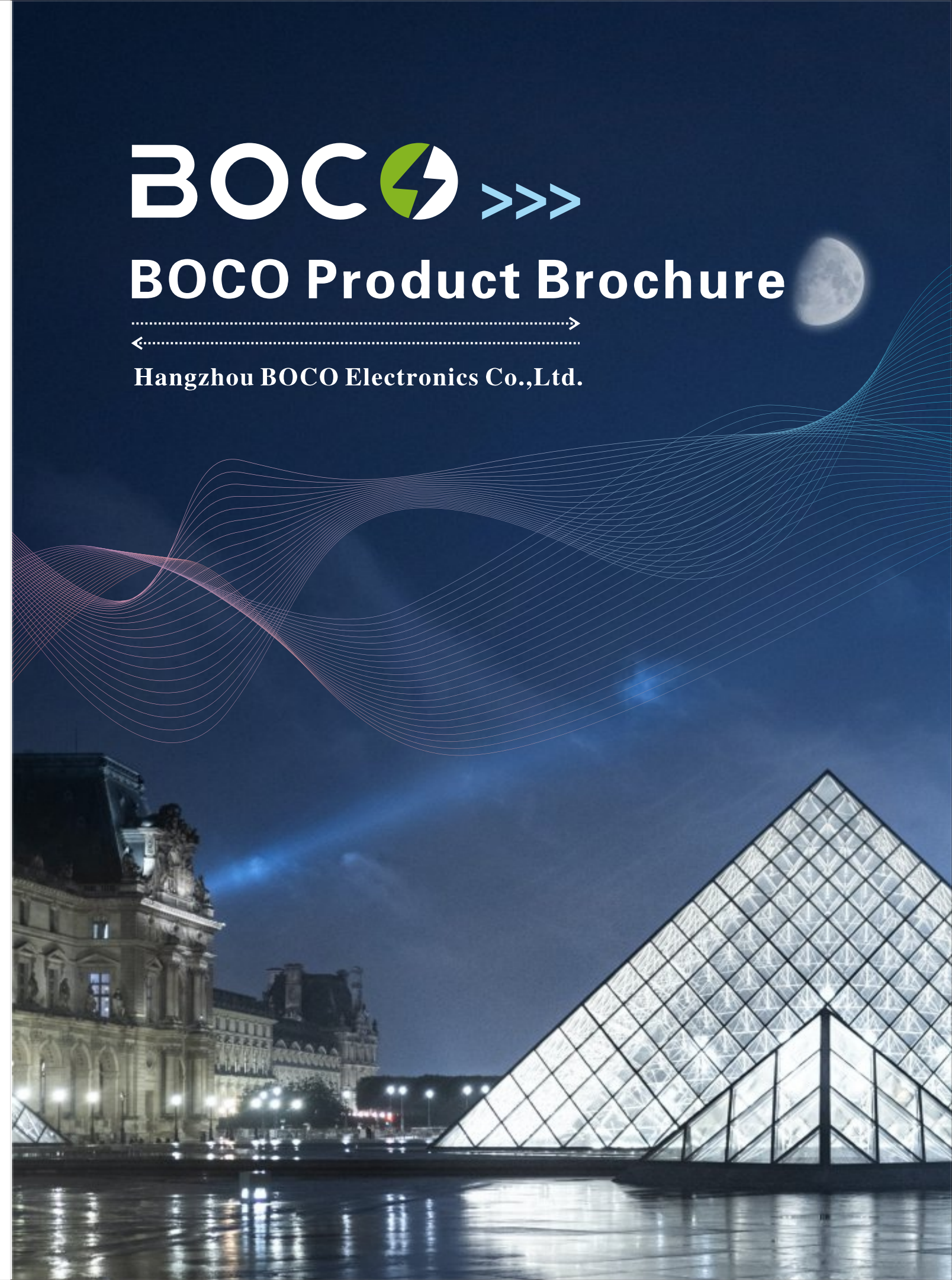
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BOCO Product Brochure



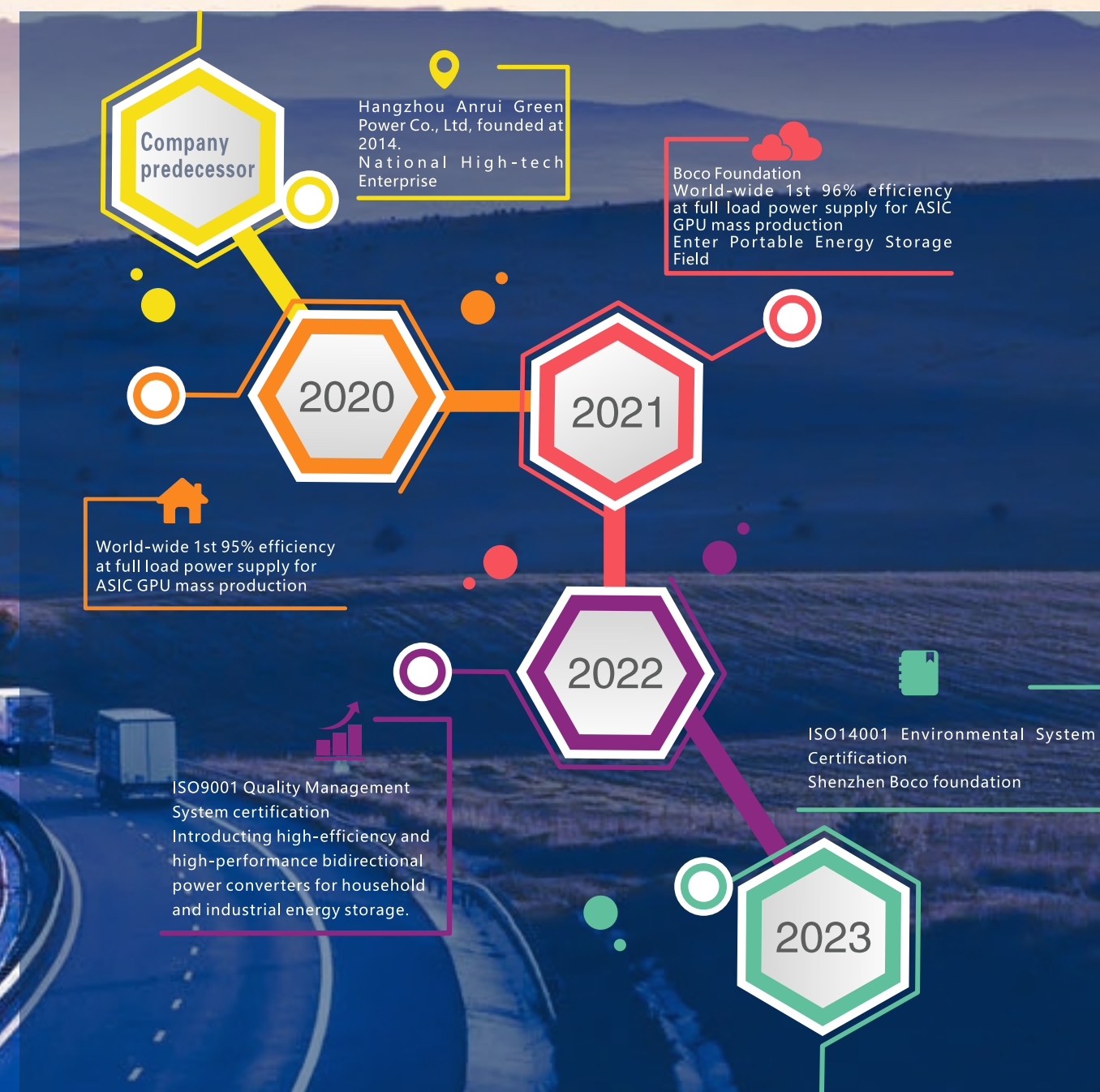
Hangzhou BOCO Electronics Co.,Ltd.



Company Profile

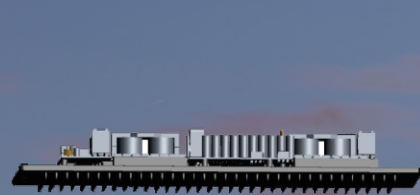
Hangzhou BOCO Electronics Co., Ltd is National High-tech Enterprise, which is a leader in the custom design and manufacture of highly reliable power conversion solutions for a wide range of applications including Household Energy Storage, Industrial & Commercial Energy Storage, Portable Energy Storage, Server, Networking, GPU & ASIC.

BOCO always take product quality and reliability as the first priority, and continue to provide high efficiency, high power density, high protection level power modules to customers.

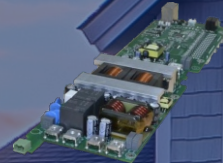


Products Series

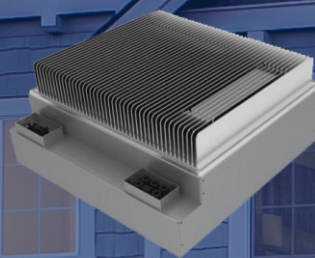
01 Energy Storage and PV&EV Power Conversion



Bidirectional DC Converter Series

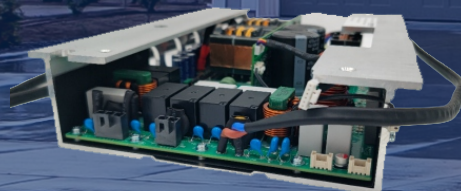


Bidirectional Buckboost DC-DC Battery Optimizer

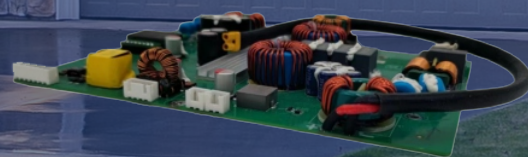


SJ400_PN series

02 Small-Power Storage Power Supply

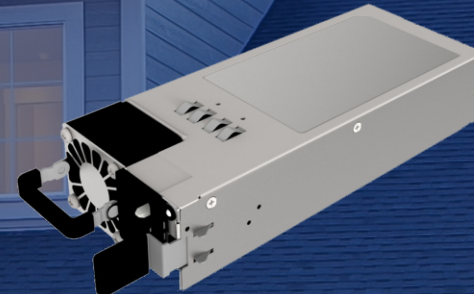


PCS Series

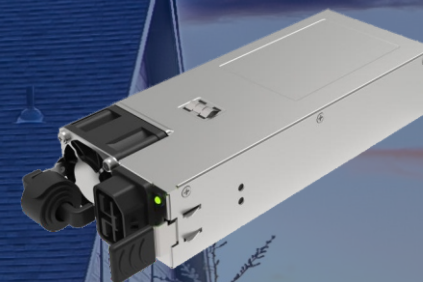


MPPT Series

03 Embedded Power Supply



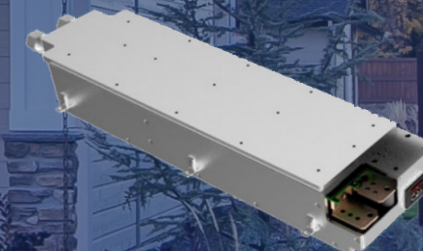
CRPS Power Supply For CPU



CRPS Power Supply For GPU_ChatGPT



Fan Cooling Power Supply For ASIC



Liquid Cooling Power Supply For ASIC



01

Energy Storage and PV&EV Power Conversion

Bidirectional DC Converter Series

Key Feature:

- Up to 97% conversion efficiency, low loss
- High power density, small size, light weight
- Modular design full digital control
- Wide input and output voltage range
- High frequency isolation, safer use
- Supports multiple modules in parallel
- Online software upgrade
- Comprehensive overvoltage, overcurrent, short circuit protection
- Natural–Air Cooling

Specification		Mars-502PB	Mars-252PB
External High Voltage Port	External Port Voltage	350–450Vdc	350–450Vdc
	Voltage Range	350–450Vdc	350–450Vdc
	Conversion Efficiency	≥96.5%	≥96.5%
	Power	5000W(continue) 7000W(10s)	2500W(continue) 3000W(10s)
Battery Port	Battery Voltage	42–57Vdc	42–57Vdc
	Charge Current	100A	50A
	Conversion Efficiency	≥97%	≥97%
	Output Power	5000W(continue) 6000W(10s)	2500W(continue) 3000W(10s)
	Discharge Current	100A, 150A (30s)	50A, 75A (30s)
Environment	Operating Temperature	–20℃–55℃	–20℃–55℃
	Operating Humidity	0%–95%	0%–95%
	Storage Temperature	–30℃–75℃	–30℃–75℃
	Storage Humidity	10%–95%	10%–95%
	Operating Altitude	3000m (max)	3000m (max)
Structure	Dimension (mm) (L × W × H)	500 × 205 × 95	260 × 160 × 125
	Weight	<6kg	<2.8kg
	Cooling	Natural ventilation, independent air duct	Natural ventilation, independent air duct
	High Voltage Port Connection	M4 Welding Terminal Block	M4 Welding Terminal Block
	Low Voltage Port Connection	M5 Welding Terminal Block	M5 Welding Terminal Block
Signal Interface	Serial Communication	RS485、CAN2.0B	RS485、CAN2.0B
	Digital IO Signal	DI × 1、DO × 1	DI × 1、DO × 1
Protection	Battery Port	OVP, UVP, short circuit, OCP	OVP, UVP, short circuit, OCP
	External Port	OVP, UVP, short circuit, OCP	OVP, UVP, short circuit, OCP



Bidirectional Buckboost DC-DC Battery Optimizer

Key Feature:

- High Efficiency
Wide range, high efficiency up to 99.2%
- High Reliability
Short circuit protection, fault current cleared in microsecond level.
- Built-in Function Integration
Control unit, contactors, fuses, current sensors
- Diversified Function
Support constant current, constant voltage charge and discharge, parallel expansion
Integrated PV MPPT algorithm
- Safety Compliance
UL1741, IEC 62477-1

Specification		Venus-482PB
External Port	Operating Voltage Range	39-57Vdc
	Voltage Range	36-75Vdc
Battery Port	Output Current	50A (max)
	Nominal Power	4800W
	Nominal Current	100A
	Efficiency	≥98%
Bidirectional Conversion		
Charge and Discharge Specification	Maximum Charging Current	100A
	Maximum Discharge Current	100A
	Surge Impulse Current	150A (max)
	Charge and Discharge Current Limit Range	0-100A
	Charge and Discharge Switching Time	0ms
Environment	Operating Temperature	-20℃-55℃
	Relative Humidity	5%-95%
	Storage Temperature	-25℃-85℃
	Atmospheric Pressure	61-113kPa
	Altitude	4000m (max)
Structure	Dimension (mm) (L × W × H)	441.1 × 112 × 38
	Cooling	Natural-air cooling integrated with housing panel
	Noise	30dB(max)
	Output Terminal	4-pin M5 Welding Terminals
	Operating Mode	Bidirectional lift voltage DC-DC, constant current/constant voltage
	Insulation Detection	Insulation resistance < 100Ω/V, protection
Signal Interface	Serial Communication	CAN, RS485



SJ400_PN Series V2G/V2H Converters

Key Feature:

- EV Battery Interface to AC Power
 - High Efficiency

Bi-directional AC/DC

Isolated Battery Power Control

Grid-tied and Standalone

Peak up to 96.5%
- Wide Voltage for EV batteries
 - High Reliability
 - Safety Compliance

150V to 930V

Short circuit resistant

OV, OC, OP, OT Protection.

UL1741, JET, IEC61477-1

Specification		Meteor-722PN	Meteor-602PN	Meteor-692PN
AC Input/Output (On-grid)	Nominal I/O Apparent Power (VA)	7200	6000	6900
	Max. I/O Apparent Power (VA)	8448	7333	8349
	Nominal AC Voltage (V)	120/240,L1/N/L2	101/202, L1/N/L2	230, L/N
	Nominal Grid Frequency (Hz)	50/60	50/60	50
	Maximum I/O Current (VA) (continuous)	32	33	33
	Operation Modes	Power peak shelving, Self-consumption		
	Control Method	I/O current regulation according to BMS/system		
	Total Harmonic Distortion _Current	<5%		
AC Output (Off-grid)	Max. Output Apparent Power (VA)	7200	6000	6900
	Peak Output Apparent Power (VA)	10800,10s	9000,10s	10350,10s
	Nominal AC Voltage (V)	120/240,L1/N/L2	101/202, L1/N/L2	230, L/N
	Max. Continuous Output Current (A)	32	33	33
	Total Harmonic Distortion (@linear load)	<3%		
	Nominal Frequency (Hz)	50/60	50/60	50
	Power factor	0.8 ahead~0.8 behind		
Battery Side	Voltage Range (V)	150~930		
	Max. Charge Current (A)	24	20	23
	Max. Discharge Current (A)	39	32.6	37.5
General	Max. Inverter Efficiency	97.50%		
	Max. Battery to Load Efficiency	96%	>96%	>96%
	Protection	OVP,OCP,Short circuit,OTP,Anti-islanding.		
	Dimension(W*H*D mm)	552*459*206.1		
	Weight (kg)	<25kg		
	Operation Temperature (° C)	-30 ~ 50		
	Relative Humidity	5~95%, no condensing		
	Altitude (m)	≤3000		
	Cooling	Natural/Forced-Air Cooling		
	Noise (dB)	≤40		
	Communication	CAN, RS485		
	Safety	UL1741, UL1741SA	JET	IEC61477-1
	EMC	FCC Part 15, Class B	VVCI class B	IEC61000-6
	Standby Power	<15W		



02

**Small-Power Storage
Power Supply**



PCS Series

Key Features:

- High efficiency and high power density
- Perfect protect funtion and high reliability
- Strong loading capacity
- Basic UPS function
- Wide output range

Description			B120SJ48-402FT-00	B120SJ32-202FC-00	B220SJ32-202FC-00	120BDC48-2000FB-94%	B230SJ48-362FT
Input/Output	Rectifier Mode	Input Voltage Range	90-140Vac	90-140VAC	200-240VAC	90-140Vac	180-264Vac
		Input Current	15A	15A	9A	15A	15A
		DC output Voltage	40-56V	27-38VDC	27-38VDC	35-56V	40-56V
		DC Output Current	33A	50A	50A	35A	40A
		Efficiency	95.00%	95.00%	95.00%	94.00%	95.00%
	Inverter Mode	Input Voltage Range	35-56V	27-38V	27-38V	35-56V	40-56V
		AC Output Voltage	100-130Vac	220VAC	220VAC	120Vac	230Vac
		Efficiency	95.00%	95.00%	95.00%	94%	95.00%
Mechanical	Dimension(mm) (L x W x H)		289x194x60(mm)	262x202x59.6(mm)	262x202x59.6(mm)	290x106x53(mm)	289x194x60(mm)
	Weight		4kg	2.9kg	2.9kg	1.6kg	4kg
	Thermal		Fan	Self-cooling/Fan	Self-cooling/Fan	Fan	Fan
	Input Soket		C6201HM-02P	C6201AV-3P	C6201AV-3P	BA3-05-8.25-03D	C6201HM-02P
	Output Terminal		C6201HM-04P/M6	XT60/C6201AF-2P/C6201AV-2P	XT60/C6201AF-2P/C6201AV-2P	Cable	C6201HM-04P/M6
Environment	Operation Temperature		-10-40℃	-10-40℃	-10-40℃	-10-40℃	-10-40℃
	Storage Temperature		-20-75℃	-20-75℃	-20-75℃	-20-75℃	-20-75℃
	Operation Humidity		10%-90%	10%-90%	10%-90%	10%-90%	10%-90%
	Altitude		3000m	3000m	3000m	3000m	3000m
Safety/EMC	Safety		UL2743	IEC62368	IEC62368	UL2743	IEC62368-1
	EMI		Class B	CLASS B	CLASS B	Class B	Class B
Others	Communication		CAN/485	RS485	RS485	CAN	CAN/485
	Control		Digital control	Digital control	Digital control	Digital control	Digital control
	Protection		OVP, OCP/SCP, OPP, OTP	OVP, OCP/SCP, OPP, OTP	OVP, OCP/SCP, OPP, OTP	OVP, OCP/SCP, OPP, OTP	OVP, OCP/SCP, OPP, OTP



MPPT Series

Key Features :

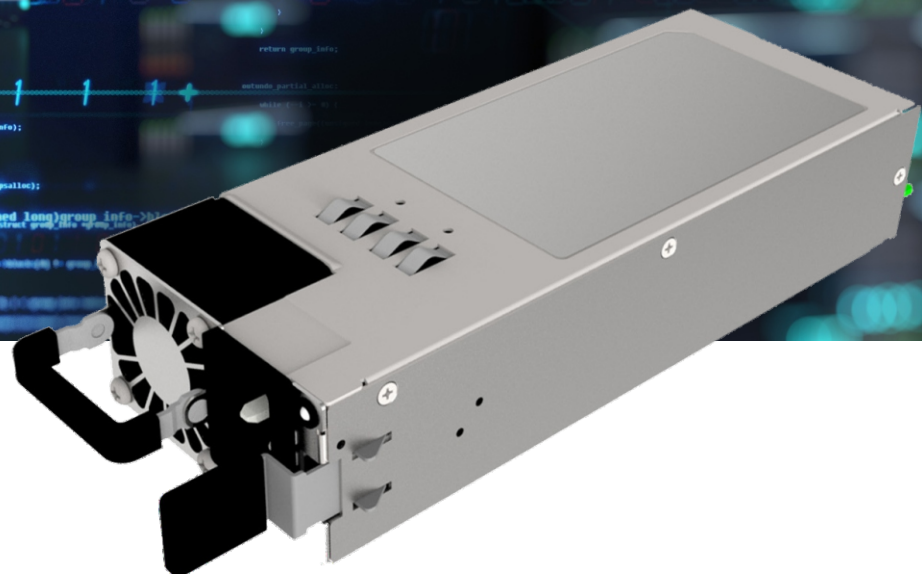
- Up to 96% efficiency
- Perfect protect funtion and high reliability
- Wide input and output range
- Digital MPPT control

Description			BBK6011-01	B150BK48-202FC	BBK8402-01FC
Input/Output	PV Mode	Input Voltage Range	12-60V	12-150V	
		Input Current	10A MAX.	20A MAX.	
		DC output Voltage	30-58V	40-56V	
		Power	600W MAX.	2000W MAX.	
		Efficiency	96.00%	96.00%	
	24V Output	Output Voltage			24V/20
		Efficiency			93.00%
	24V Output	Output voltage			13.2V Max./30A
		Efficiency			93.00%
Mechanical	Dimension(mm) (L x W x H)		182.5x142.25x25	225x88x62.5	155x105x62.5
	Weight		0.5kg	0.7kg	0.6kg
	Thermal		Fan	Fan	Fan
	Input Soket		XT30PW-M	XT60IE-M	M3 Welding terminal
	Output Terminal		XT30PW-F	M3 Welding terminal	C6201HM-02P/XT60E-M
Environment	Operation Temperature		-10-45℃	-10-45℃	-10-45℃
	Storage Temperature		-30-70℃	-20-70℃	-20-75℃
	Operation Humidity		10%-90%	10%-90%	10%-90%
	Altitude		3000m	3000m	3000m
Safety/EMC	EMI		CLASS B	CLASS B	CLASS B
	Safety		UL2743	UL2743	UL2743
Others	Communication		CAN/485	RS485	RS485
	Control		Digital control	Digital control	Anolog control

03

Embedded Power Supply For IT

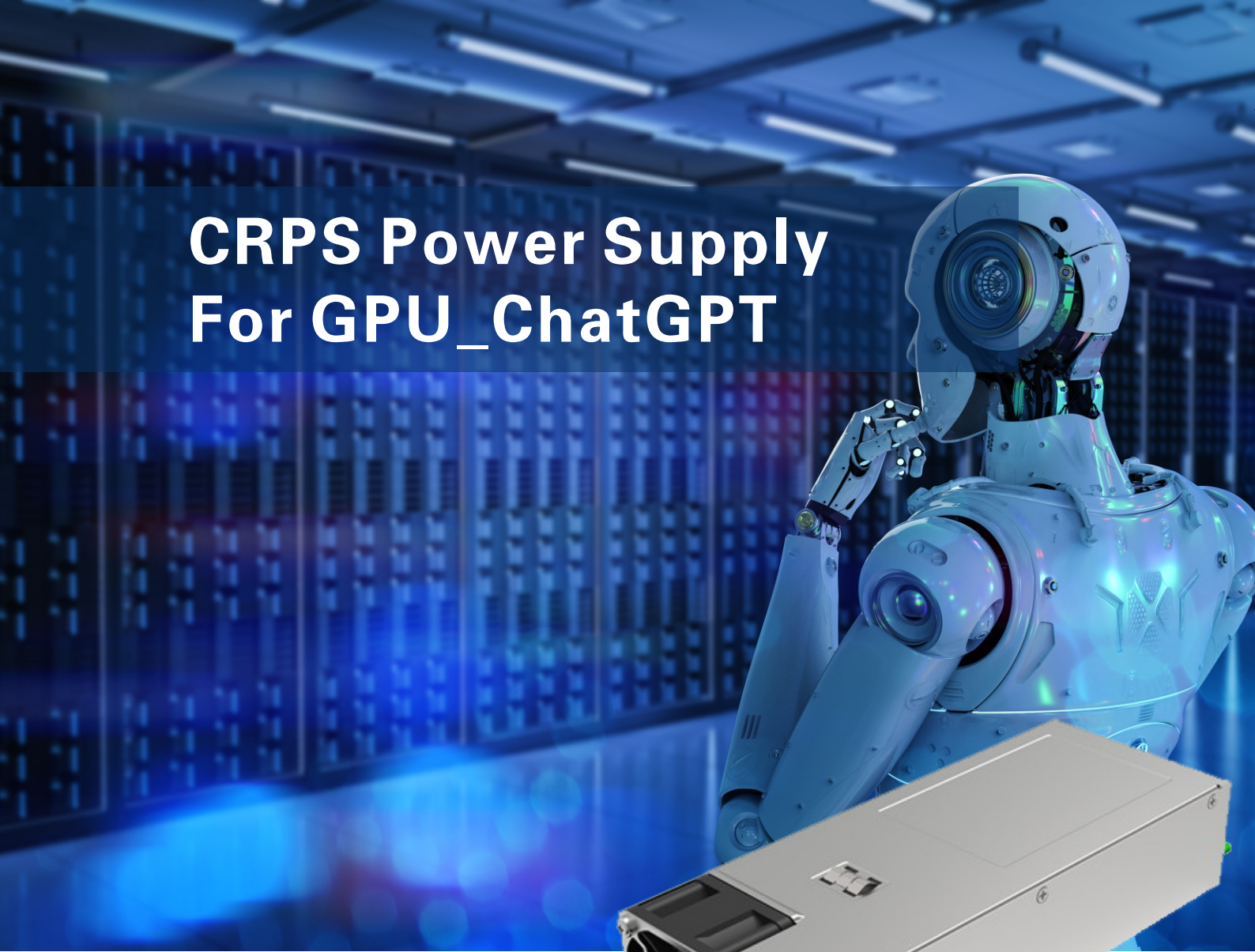
CRPS Power Supply For CPU



Key Features :

- 80+Platinum
- 80+Titanium
- Smart control
- PMbus

MODEL	BCSE1600AD-12	BCSE1600AP-12	BCSE2000AP-12	BCSE2400AT-12	BCSE3200AT-12
POWER	1600W	1600W(HL) 1000W(LL)	2000W(HL) 1000W(LL)	2400W(HL) 1200W(LL)	3200W(HL) 1600W(LL)
Input					
Nominal	48-60Vdc	100-240Vac/240Vdc			
Complete range	36-72Vdc	90-264Vac/192-310Vdc			
Frequency (AC)	N.A	50/60HZ			
Max input current	50Arms	12Arms	12Arms	16Arms	16Arms
Inlet socket	Bizlink	IEC C14	IEC C14 *Optional IEC C20	IEC C20	IEC C20
Efficiency	Peak 94%	Platinum	Platinum	Titanium	Titanium
Hold up@100% load	1ms	12ms	12ms	12ms	10ms
Vsb hold up @100% load	70ms	70ms	70ms	70ms	70ms
Main Output					
Output Power	12.2V/1600W	12.2V/1600W	12.2V/2000W	12.2V/2400W	12.2V/3200W
Regulation	± 5%	± 3%	± 3%	± 3%	± 3%
Ripple	120mVp-p				
Dynamic regulation	± 5%	± 5%	± 5%	± 5%	± 5%
Current sharing	<5%@20%-100% load				
Standly Output					
Vout/Iout	12V/2.5A	12V/3A	12V/3A	12V/2.5A	12V/2.5A
Ripple	120mVp-p				
EMC					
CE&RE	Class A	Class A	Class A	Class A	Class A
Surge	DM0.5kV/CM1kV	DM2kV/CM2kV			
Environmental Requirement					
Operating	0℃ to 50℃	-5℃ to 55℃	-5℃ to 55℃	-5℃ to 55℃	-5℃ to 55℃
MTBF	200k hours	300k hours			
Airflow					
Exhaust	√	√	√	√	√
Intake	√	√	√	√	
Dimension185mm × 73.5mm × 40mm					



CRPS Power Supply For GPU_ChatGPT

Key Features:

- 80+Titanium
- >100W/inch³ Power Density
- Smart Control

Specification		CRPS185 4500W 54V	CRPS185 3800W 12V
Brief Specification	Input Voltage Range	HL:180~264 Vac/ 180Vdc~300Vdc LL:90~140 Vac(2250W)	HL:180~264 Vac / 180Vdc~300Vdc LL:90~140 Vac(1900W)
	Frequency	47~63Hz	47~63Hz
	Output Power	4500W@220Vac~240Vac, 4200W@200Vac~219Vac	3800W@200Vac~264Vac, 3600W@180Vac~200Vac
	Output Voltage & Current	54V/83.3A	12.2V/311.5A
	Standby Output Voltage & Current	12V/2.5A	12V/2.5A
	Output Ripple	500mV	120mV
	Dynamic	± 5%	± 5%
	Efficiency	Titanium(>96%@50% load)	Titanium(>96%@50% load)
	Operating Temperature Range	-5℃~+55℃	-5℃~+55℃
	Hold Up Time	10ms	10ms @3600W
	Power Density	137.8W/inch ³	116.4W/inch ³
	Oring	Yes	Yes
	EMI	Class A with 6dB	Class A with 6dB
	Surge	± 2kV CM & DM	± 2kV CM & DM
	Special Features	Active current sharing: ± 5% accuracy OC/OV/UV/OT I ² C	Active current sharing: ± 5% accuracy OC/OV/UV/OT I ² C
Mechanical Specification	Dimension (mm) (L × W × H)	185 × 73.5 × 39	185 × 73.5 × 39
	Cooling	Internal fan	Internal fan
	Input Connector	APP SAF-D-GRID 2007GX	APP SAF-D-GRID 2007GX
	Output Connector	Golden finger	Golden finger



Fan Cooling Power Supply For ASIC

Key Features:

- High efficiency、high reliability;
- I²C communicaiton protocol;
- Over heat protection、over load protection、short circuit protection;
- FCC、ICES、CE certificaion ;

Specification		P221C/P222C	P221B/P222B	BCJ40002-02	BCJ47003-01
Input /Output	Output power	3350W	3350W	3450W	4500W
	Main output voltage	10.5-14.5V/11.5-15.5V		11.5-15.5V	10-15V
	Maximum output current	300A/280A		300A	370A
	Auxiliary output voltage	12.3V	12.3V	12.3V	48V/12V
	Auxiliary maximum output current	20A	20A	20A	4.37A/1.67A
	Input voltage range	220-240VAC	220-240VAC	220-240VAC	220-240VAC
	Efficiency	95%@100%load	96%@100%load	93%-94.5%	95%(peak efficiency)
	Power density	21.1W/in ³	21.1W/in ³	19.9W/in ³	17.0W/in ³
Structure	Dimensions (L x W x H) mm	300x131x71	300x131x71	222.0x214.8x63.3	263.6x 270.5x 63.5
	Weight	2.95kg	2.95kg	2.95kg	4.3kg
	Heat dissipation mode	Fan Cooling	Fan Cooling	Fan Cooling	Fan Cooling
	Input terminal	C20	C20	C20	dual C20
	Output terminal	M4 screw lock attached	M4 screw lock attached	M4 screw lock attached	M5 screw lock attached
Environment	Operating temperature	-40 ~ 70℃	-40 ~ 70℃	-40 ~ 55℃	-20 ~ 45℃
	Storage temperature	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃
	Operating humidity	5%-95%	5%-95%	5% ~ 95%	5% ~ 95%
	Altitude	4000m	4000m	4000m	4000m
Safety/EMC	Safety	FCC,ICES,CE-EMC, CE-LVD	FCC,ICES,CE-EMC, CE-LVD	FCC, CE-EMC, CE-LVD	FCC, CE-EMC, CE-LVD
	EMI				
	Surge				
Other	Communication	I ² C	I ² C	I ² C	I ² C
	Controls	Digital	Digital	Digital	Digital
	Protection	Over voltage, over current, short circuit, overheating			



Liquid Cooling Power Supply For ASIC



Key Features:

- High efficiency、high reliability;
- I²C communicaiton protocol;
- Overheat protection、overload protection、short circuit protection;
- FCC、ICES、CE certificaition ;

Specification		P221C/P222C Oil Cooling	BCJ52002-02	P663B	P564B
Input /Output	Output power	5000W	5200W	9000W	10000W
	Main output voltage	11.5-16.5V	11.5-15.5V	21-31V	31-47V
	Maximum output current	416A	433A	427A	300A
	Auxiliary output voltage	12.3V	12.3V	7V	7V
	Auxiliary maximum output current	2A	2.5A	2A	2A
	Input voltage range	220-240VAC	220-240VAC	380-480VAC, Three Phase	380-480VAC, Three Phase
	Efficiency	95%(peak efficiency)	95%(peak efficiency)	96% @24V/5000W	96% @36V/7000W
	Power density	29.3W/in ³	28.3W/in ³	35.2W/in ³	33.3W/in ³
Structure	Dimensions (L x W x H) mm	300x131x71	222.0x214.8x63.3	364x258.5x44.5	487.7x140x72
	Weight	2.8kg	2.8kg	5.8kg	8kg
	Heat dissipation mode	Immersion oil cooling	Immersion oil cooling	Immersion oil cooling	Water cooling
	Input terminal	C20	PA45	SA2-30	SA2-30
	Output terminal	M4 screw lock attached	M4 screw lock attached	M4 screw lock attached	M4 screw lock attached
Environment	Operating temperature	0 ~ 70℃	0 ~ 60℃	0 ~ 70℃	0 ~ 70℃
	Storage temperature	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃	-40 ~ 85℃
	Operating humidity	/	/	/	5% ~ 95%
	Altitude	4000m	4000m	4000m	4000m
Safety/EMC	Safety	FCC, CE-EMC, CE-LVD	FCC, CE-EMC, CE-LVD	FCC, CE-EMC, CE-LVD	FCC, CE-EMC, CE-LVD
	EMI				
	Surge				
Other	Communication	I ² C	I ² C	I ² C	I ² C
	Controls	Digital	Digital	Digital	Digital
	Protection	Over voltage, over current, short circuit, overheating			