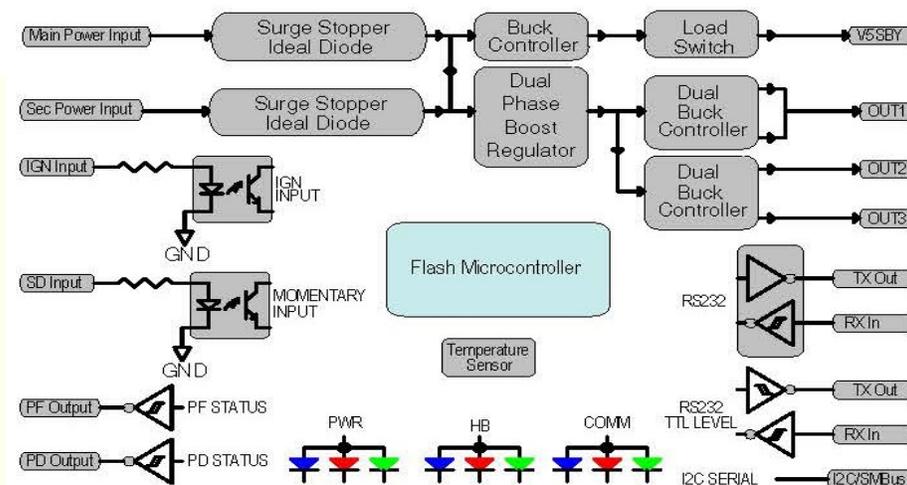


## HPSP-XYZ Description:

The HPSP-XYZ is a high power, high performance PC/104 size DC to DC converter with three programmable outputs and a 5VSBY 1A output. The HPSP-XYZ has a wide input range of 6-50V(>6:1) and is ideal for battery and unregulated input applications. The HPSP-XYZ is specifically designed for vehicular applications and includes heavy-duty transient surge stoppers that clamp the input voltage to safe levels while maintaining normal power supply operation. Dual power inputs provide connections for main power and a secondary (backup) power source.

The HPSP-XYZ has advanced power supply management (APSM) that allows timed on/off control of the outputs and permit each output to be individually turned on and off. The APSM provides notification of changes to main power and secondary power status, temperature and output voltages and current.

The HPSP-XYZ can be ordered with each output set to the customers requirements. See ordering information for details.



## Specifications

- Outputs:**  
 OUT1: 11 to 25V @ 6A (default 24V)  
 OUT2: 3.2 to 5.5V @ 7A (default 5V)  
 OUT3: 1.5 to 15V @ 5A (default 12V)  
 5VSBY @ 1A  
**Note:** Outputs can be factory set to customers requirements.
- Dual Input Power Connections**  
 6 to 50VDC with transient surge stopper on Main and Secondary power inputs. Both inputs can be connected to same source to increase load capability.
- Opto-coupled On/Off control**  
 Maintained action (IGN)  
 & Pushbutton (momentary)
- Serial interface ports**  
 1 x RS232 buffered  
 1 x TTL RS232 (non-buffered)
- Digital temperature sensor**  
 One on board. Supports seven external I<sup>2</sup>C temperature sensors
- RGB Color LED status indication**  
 Power, Heartbeat and Communications status
- Environmental**  
**Size:** 90 x 96 x 15mm (PC/104 footprint)  
**Weight:** 207 grams  
**Temperature:** -40°C to +85°C (as measured on heat spreader)  
**Shock & Vibration:** MIL-STD-810 levels

## Built Rugged for Hostile Environments

### Description of Operation:

The Main and Secondary power inputs have heavy-duty surge stoppers that clamp the applied voltages to a safe level when transients and load dumps occur. The Main and Secondary inputs also feature ideal diode controllers and Mosfets which reduces heat dissipation in comparison to conventional Schottky diodes. The input with the higher voltage is used to power the HPSP-XYZ switching regulators. The output of the ideal diode Mosfets is called VmainC.

A dual phase boost regulator raises the input voltage to a level that is equal to or greater than the highest output voltage requirement (OUT1, OUT2 or OUT3) plus one volt. If the input voltage is above the highest output voltage (plus one volt) the boost regulator passes the input power to the output regulators. The output of the boost regulator is called Vbst.

A dual phase synchronous buck regulator generates the OUT1 power rail by reducing the Vbst level to the required level as set by the on-board microcontroller.

The OUT2 and OUT3 power rails are generated with synchronous buck regulators reducing the Vbst level to the required level for OUT2 and OUT3 by the on-board microcontroller.

A high efficiency switching regulator creates a 5V maintenance power rail "Vcc5C" from VmainC. The Vcc5C is used to power the on-board microcontroller, digital temperature sensor, RS232 serial port driver, RGB LEDs and I/O buffers.

The 5VSBY power output is supplied from the Vcc5C power rail. An electronic switch monitors the current and automatically turns off the 5VSBY output if the current exceeds 1.5A. The on-board microcontroller can be turn on the 5VSBY output automatically when power is available or a Host CPU can instruct the on-board microcontroller to turn On/Off the 5VSBY output via the RS232 serial port.

### Special Operational Notes:

Maximum output power is limited by the Main and Secondary surge stopper maximum current limit of 12 amps. At low input voltages the load requirements might exceed the power handling of a single input. To increase the power handling for low input voltage applications the Main and Secondary inputs can be wired in parallel thus doubling the power available for the output loads.

### Ordering Information:

**Model: HPSP-XYZ[-CC]-PBF;** Three adjustable outputs (shipped set to factory default levels) and 5VSBY 1A output. PC/104 size.

**Model: HPS-x-y-z[-CC]-PBF;** OUT1, OUT2 & OUT3 set to specified voltages.

Where:

"-x" is OUT1 voltage between 11 to 25 volts

"-y" is OUT2 voltage between 3.2 and 5.5 volts

"-z" is OUT3 voltage between 1.5 and 15 volts

**Note:** Outputs must be specified in the above order.

### Conformal Coat Options

Where [-CC] is the conformal coating selection.

"-CS" is silicon conformal coating

"-CU" is urethane conformal coating

"-CH" is Humiseal #1B73 conformal coating

**Example:** HPSP-XYZ-CS-PBF; Silicon conformal coated.



Authorized Distributor

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