



# SPECIFICATION

## SilverStone 120W DC-DC Converter

### END-0500

#### 1.0 INPUT REQUIREMENTS

##### 1.1 DC input requirements

The input voltage, requirements for continuous operation are stated below.

Table 1 DC Input Line Requirements

Parameter	Min	Nom.	Max	Unit
Input voltage	15	19	24	VDCrms

##### 1.2 Inrush current regulation

12 A @ 15Vrms

#### 2.0 OUTPUT REQUIREMENTS

##### 2.1 Static load:

Output	Voltage	Minimum load	Nominal load	Peak load
1	+5V	0A	5A	7A
2	+12V	0A	6A	8A
3	-12V	0A	0.2A	0.2A
4	3.3V	0A	5A	7A
5	+5VSB	0A	1.5A	2A

Note: Peak load of each voltage could last for up to 10 seconds.



## 2.2 Output voltage:

The output voltage shall be statically regulated for all combinations of load, line and environment including cross regulation as shown.

Output	Voltage	Range	Tolerance
1	+5V	+4.75V~5.25V	+/-5%
2	+12V	+11.4V~12.6V	+/-5%
3	-12V	-11.4V~-12.6V	+/-5%
4	3.3V	+3.14~+3.47V	+/-5%
5	+5VSB	+4.75V~5.25V	+/-5%

## 2.3 Ripple and Noise

Output	Voltage	Maximum peak to peak ripple & Noise
1	+3.3V	100m Vp-p
2	+5V	100m Vp-p
3	+12V	200m Vp-p
4	-12V	200m Vp-p
5	+5VSB'	200m Vp-p

## 2.4 Standard Voltage

Standard Voltage: 19V±1 DC

## 2.5 Efficiency

1. Power supply efficiency minimum 80% at normal AC main voltage and full load .
2. No load input current : DC 100mA max

## 2.6 Remote on/off control

When the logic level "PS-ON" is low, the DC outputs are to be enabled.

When the logic level is high or open collector, the DC outputs are to be disabled.

## 2.7 Power good signal turn on delay time (100ms~500ms)

## 2.8 Turn-On SEQUENCE:

### 2.9 Rise Time:

At 15Vdc or 24Vdc, DC output rise time from 10% to 90% of  $V_o \leq 20ms$



### **3. PROTECTION**

#### **3.1 SHORT CIRCUIT PROTECTION**

With input power source at 165W max. power limiting, when shorting at 3.3V, 5V & 5VSB, it should not have any component damage for indefinitely period of time. The power supply shall shut down

#### **3.2 Over-Voltage Protection**

3.3V Limit at 3.9V-4.6V, 5V limit at 5.6-6.4V max, 12V limit at 13.2-14.2V With SCR active and short circuit of input power source. The power supply shall shut down and no damage

### **4.0 ENVIRONMENT**

#### **4.1 Operation**

Temperature	0 to 40 °C
Relative Humidity	20 to 80% RH

#### **4.2 Shipping and Storage**

Temperature	-20 to 80 °C
Relative Humidity	10 % to 90% RH

### **5.0 MTBF ( MEAN-TIME-BETWEEN FAILURES ) CALCULATION**

The demonstrated MTBF shall be 40,000 hours of continuous operation at 25°C, Full load. 80% confidence limit and nominal line. The MTBF of the power supply shall be calculated in accordance with MIL-STD-217F.

### **6.0 MECHANICAL REQUIREMENTS**

#### **6.1 Physical Dimension**

146 mm (W) × 35mm (H) × 45 mm (D)



## 6.2 Connectors Define

### M/B 24PIN connector (M/B 20PIN in split mode)

18AWG wire	Signal	Pin	Pin	Signal	18AWG wire
Orange	+3.3V	13	1	+3.3V	Orange
Orange(22AWG)	+3.3Vsense	13	2	+3.3V	Orange
Blue (18AWG)	-12VDC	14	3	COM	Black
Black	COM	15	4	+5VDC	Red
Green(18AWG)	PS-ON	16	5	COM	Black
Black	COM	17	6	+5VDC	Red
Black	COM	18	7	COM	Black
Black	COM	19	8	PWRGOOD	Grey (18AWG)
White	N/C	20	9	+5Vsb	Purple
Red	+5VDC	21	10	+12V	Yellow
Red	+5VDC	22	11	+12V	Yellow
Red (22AWG)	+5Vsense	22	12	+3.3V	Orange
Red	+5VDC	23			
Black	COM	24			

### ATX 12V 4PIN

18AWG wire	Signal	Pin	Pin	Signal	18AWG wire
Black	GND	1	3	+12V	Yellow
Black	GND	2	4	+12V	Yellow

### 4PIN peripheral connector (HDD)

### 4PIN floppy connector (FDD)

18 AWG wire	Signal	Pin	Pin	Signal	22AWG wire
Yellow	+12V	1	1	+5VDC	Red
Black	COM	2	2	COM	Black
Black	COM	3	3	COM	Black
Red	+5VDC	4	4	+12V	Yellow

### SATA connector

18AWG wire	Signal	Pin
Orange	+3.3V	5
Black	COM	4
Red	+5V	3
Black	COM	2
Yellow	+12V	1