

### 110 Watts

- Complete AC/DC Power Supply
- No Extra Components Required
- Base Plate Cooled
- -40 to +85 °C Base Plate Temperature
- Low Profile in Full Brick Package
- High Efficiency - Up to 91%
- Universal Input
- <0.3 W No Load Input Power
- Optional Heatsink Available
- Over Current, Over Voltage and Over Temperature Protection
- 3 Year Warranty



#### Dimensions:

**ASB110:**  
4.6 x 2.4 x 0.67" (116.8 x 61 x 17 mm)

The ASB110 series is a range of complete low profile, full brick, base-plate cooled AC-DC power supplies which require no external components. The series includes a complete built in EMC filter and AC Fuse as well as bulk storage capacitor providing a complete AC-DC power solution ready for installation into end applications. The ASB110 offers high efficiency to minimise waste heat and heat sinking requirements and operates from -40 °C to +85 °C on the module base-plate.

### Models & Ratings

| Output Power | Output Voltage | Output Current | Noise and Ripple | Efficiency <sup>(1)</sup> | Model Number <sup>(2)</sup> |
|--------------|----------------|----------------|------------------|---------------------------|-----------------------------|
| 110 W        | 12.0V          | 9.17 A         | 120 mV           | 90.0%                     | ASB110PS12                  |
|              | 15.0V          | 7.33 A         | 150 mV           | 90.0%                     | ASB110PS15                  |
|              | 24.0V          | 4.58 A         | 240 mV           | 91.0%                     | ASB110PS24                  |
|              | 28.0V          | 3.93 A         | 280 mV           | 91.0%                     | ASB110PS28                  |
|              | 36.0V          | 3.06 A         | 360 mV           | 91.0%                     | ASB110PS36                  |
|              | 48.0V          | 2.29 A         | 480 mV           | 90.5%                     | ASB110PS48                  |

### Notes

1. Typical efficiency with 230 VAC input and full load.
2. Add suffix '-HK-' to receive with optional heat-sink fitted.

### Input

| Characteristic        | Minimum                                | Typical | Maximum | Units | Notes & Conditions   |
|-----------------------|--|---------|---------|-------|--|
| Input Voltage         | 85                                     |         | 264     | VAC   | Derate linearly from 100% load at 90 VAC to 90% load at 85 VAC |
| Input Frequency       | 47                                     |         | 63      | Hz    |  |
| Input Current         |  | 1.1/0.6 |         | A     | 115 VAC/Measured at 230 VAC                                    |
| Inrush Current        |  |         | 70      | A     | 230 VAC, cold start at 25 °C                                   |
| Power Factor          |  | >0.9    |         |       | Full load  |
| Earth Leakage Current |  |         | 500     | µA    | 264 VAC, 60 Hz   |
| No Load Input Power   |  |         | 0.3     | W     |  |
| Input Protection      | Internal T3.15A/250 VAC fitted in line |         |         |       |  |

### General

| Characteristic  | Minimum | Typical        | Maximum | Units             | Notes & Conditions           |
|---|---------|----------------|---------|-------------------|------------------------------|
| Efficiency  |         | 90             |         | %                 | See Models and Ratings table |
| Isolation: Input to Output<br>Input to Ground<br>Output to Ground |         |                | 3000    | VAC               |                              |
|   |         |                | 1500    | VAC               |                              |
|   |         |                | 500     | VDC               |                              |
| Switching Frequency   |         | 70-130 / 50-90 |         | kHz               | PFC / PWM                    |
| Power Density   |         | 14.8           |         | W/in <sup>3</sup> |                              |
| Mean Time Between Failure   | 160     |                |         | kHrs              | MIL-HDBK-217F at 25 °C GB    |
| Weight  |         | 0.51 (230)     |         | lb (g)            |                              |

### Output

| Characteristic           | Min.                                      | Typ. | Max. | Units   | Notes & Conditions   |
|--------------------------|---|------|------|---------|--|
| Output Voltage           | 12  |      | 48   | VDC     | See Models and Ratings table   |
| Initial Set Accuracy     |   | 1    |      | %       | At 60% load  |
| Minimum Load             |   |      |      |         | No minimum load required   |
| Start Up Delay           |   |      | 1.3  | s       |  |
| Start Up Rise Time       |   |      | 20   | ms      |  |
| Hold Up Time             | 10  |      |      | ms      | Full load and 115 VAC  |
| Line Regulation          |   |      | ±0.5 | %       |  |
| Load Regulation          |   |      | ±0.5 | %       |  |
| Transient Response       |   |      | 2    | %       | Maximum deviation, recovering to less than 1% within 300 µs for 25% step load                                      |
| Ripple and Noise         |   |      | 1    | % pk-pk | 20 MHz bandwidth, measured with 20 MHz Bandwidth and 10 µF electrolytic in parallel with 0.1 µF ceramic capacitor. |
| Overload Protection      | 130                                       |      | 210  | %       |  |
| Overvoltage Protection   | 110                                       |      | 140  | %       | Recycle mains to reset   |
| Short Circuit Protection | Trip and restart (hiccup), auto resetting |      |      |         |  |
| Thermal Protection       | Measured internally, auto resetting       |      |      |         |  |
| Temperature Coefficient  |   | 0.02 |      | %/°C    |  |

### Environmental

| Characteristic        | Minimum   | Typical | Maximum | Units | Notes & Conditions                        |
|-----------------------|---|---------|---------|-------|---|
| Operating Temperature | -40   |         | +85     | °C    | Baseplate Temperature, see derating curve |
| Cooling               | Conduction Cooled via Baseplate                                     |         |         |       |   |
| Operating Humidity    | 5   |         | 90      | %RH   | Non-condensing                            |
| Storage Temperature   | -40   |         | +85     | °C    |   |
| Operating Altitude    |   |         | 5000    | m     |   |
| Shock                 | IEC68-2-27, 30 g, 11 ms half sine, 3 times in each of 6 axes        |         |         |       |   |
| Vibration             | IEC68-2-6, 10-500 Hz, 2 g 10 mins/sweep, 60 mins for each of 3 axes |         |         |       |   |

### EMC: Emissions

| Phenomenon       | Standard    | Test Level | Notes & Conditions |
|------------------|-------------|------------|--------------------|
| Emissions        | EN55032     | Level B    |                    |
| Harmonic Current | EN61000-3-2 | Class A    |                    |
| Voltage Flicker  | EN61000-3-3 |            |                    |

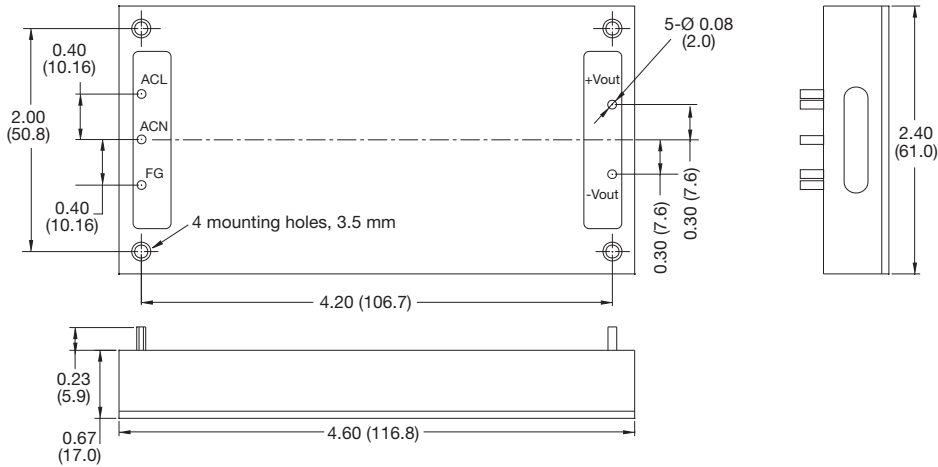
### EMC: Immunity

| Phenomenon             | Standard     | Test Level           | Criteria | Notes & Conditions      |
|------------------------|--------------|----------------------|----------|-------------------------|
| ESD                    | EN61000-4-2  | 3/2                  | A        | ±8 kV air/±4 kV contact |
| Radiated               | EN61000-4-3  | 3 V/m                | A        |                         |
| EFT/Burst              | EN61000-4-4  | 3                    | A        |                         |
| Surge                  | EN61000-4-5  | Installation Class 3 | A        |                         |
| Conducted              | EN61000-4-6  | 3 V                  | A        |                         |
| Dips and Interruptions | EN61000-4-11 | Dip: 100% 10 ms      | A        |                         |
|                        |              | Dip: 30% 500 ms      | A/B      | High Line/Low Line      |
|                        |              | Int:100% 5000 ms     | B        |                         |

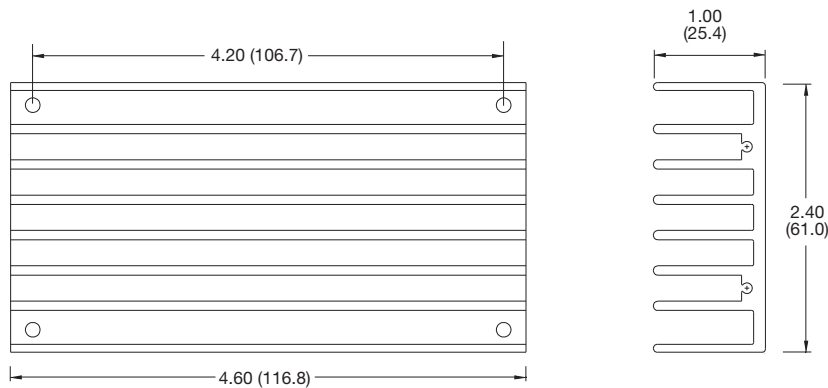
### Safety Approvals

| Safety Agency | Safety Standard        | Notes & Conditions |
|---------------|------------------------|--------------------|
| UL            | UL60950-1, UL62368-1   |                    |
| TUV           | EN60950-1, EN62368-1   |                    |
| CB            | IEC60950-1, IEC62368-1 |                    |

### Mechanical Details



### Optional Heatsink (IFH HEATSINK)

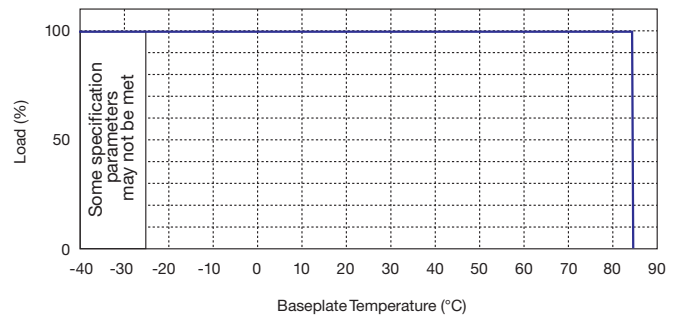
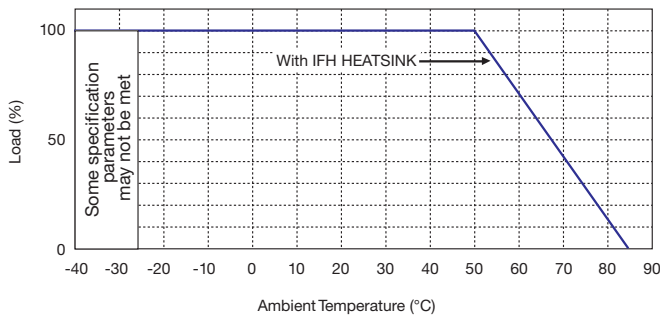


### Notes

1. Dimensions shown in inches (mm).
2. Weight: 0.51 lb (230 g)
3. Pin diameter:  $0.08 \pm 0.002$  ( $2.0 \pm 0.05$ )
4. Pin pitch tolerance:  $\pm 0.014$  ( $\pm 0.35$ )
5. Case tolerance:  $\pm 0.02$  ( $\pm 0.5$ )
6. Baseplate is connected to FG Pin

### Application Notes

#### Derating Curve



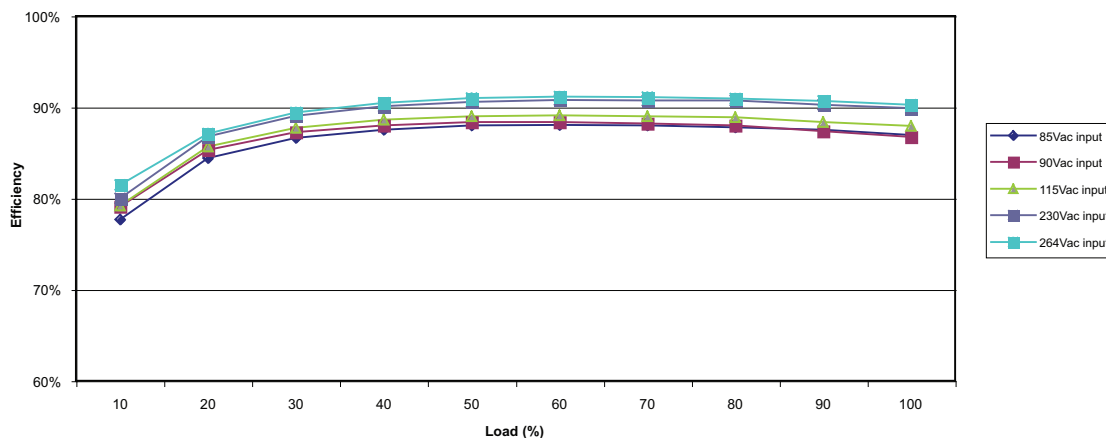
### Notes

When ASB110 is fitted with IFH HEATSINK and mounted in horizontal position with heatsink upper most, the base plate temperature will typically be 85 °C in an ambient of 50 °C.

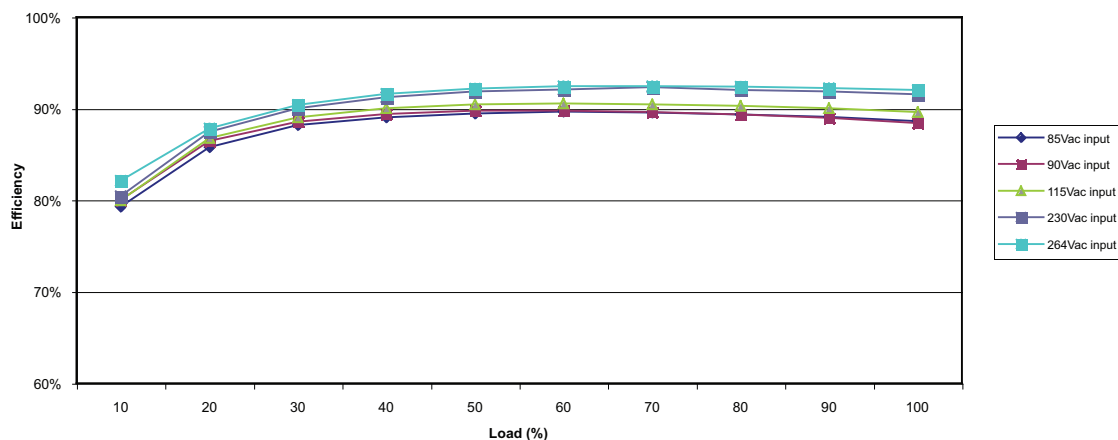
### Application Notes

#### Efficiency Curves

##### ASB110PS12



##### ASB110PS24



#### Lifetime

