

# AL60A

120 Watts

## AL60A Enhanced Series

|                |             |
|----------------|-------------|
| Total Power    | 120 Watts   |
| Input Voltages | 48V or 300V |
| # of Outputs   | Single      |



### SPECIAL FEATURES

- High efficiency - up to 86%
- 500 KHz fixed frequency
- 85°C baseplate operating temperature (with no derating)
- Low output ripple and noise
- Excellent transient response
- Safety isolated low voltage control and monitoring
- High reliability
- Wide input voltage range
- Parallelable with accurate current sharing
- Adjustable output voltage and current limit
- Regulation to zero load
- Temperature monitor output

### ENVIRONMENTAL

Operating temperature (baseplate):  
-20°C to +85°C

Storage temperature: -40°C to +105°C

Overtemperature shutdown: 90°C typical

MTBF: > 1 million hours (50°C baseplate)

### SAFETY

|            |                                |                  |
|------------|--------------------------------|------------------|
| <b>UL</b>  | UL 1950                        | E182206 & E32002 |
| <b>CSA</b> | CSA22.2-234<br>CSA22.2-950     | LR53982C         |
| <b>VDE</b> | IEC 950 20396-3336-1003 & 1009 |                  |
| <b>EN</b>  | 60950                          |                  |
| <b>CE</b>  | CEMark (LVD)                   |                  |

### ELECTRICAL SPECIFICATIONS

#### Input

Input Range ..... 180 to 400 VDC or 36 to 72 VDC

Efficiency ..... 83% typical (5V @ 20A);  
85% typical (12V @ 9A)

#### Control

Voltage Adjust ..... 90 to 110% Vo

Enable ..... TTL compatible (low to enable)

Clock Input (external sync) .... 3.3 to 5.5Vp-p @ 1MHz ± 10%

Temperature Monitor Output . 10 mV/°K (2.73V = 0°C)

Current Monitor Output ..... 0 to 1mA (1mA = 100% Io Rated)

#### Output

Load Regulation ..... 0.2% typical down to no load

Line Regulation ..... 0.1% typical

Noise/Ripple ..... 75 mV typical (output below 5V)  
2% typical (output 5V and over)

Remote sense ..... Up to 0.5V

Output Voltage

Adjust Range ..... ±10% of nominal output

Transient Response ..... 4% typical deviation with  
250µs recovery (25-75% full load)

Current Share Accuracy ..... 5% typical

Overvoltage Protection ..... 125% nominal Vo

Current Limit ..... 110% Io max

### NOTES

Nominal values apply with sense pins connected and other control pins unconnected.

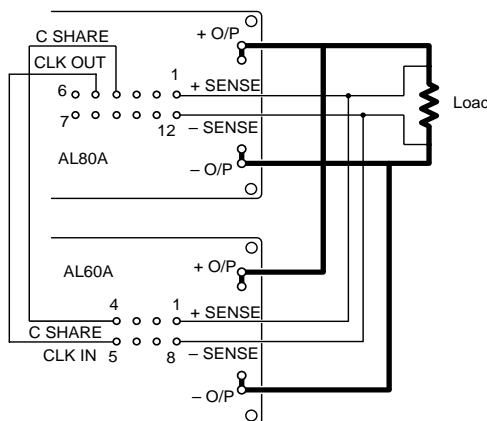
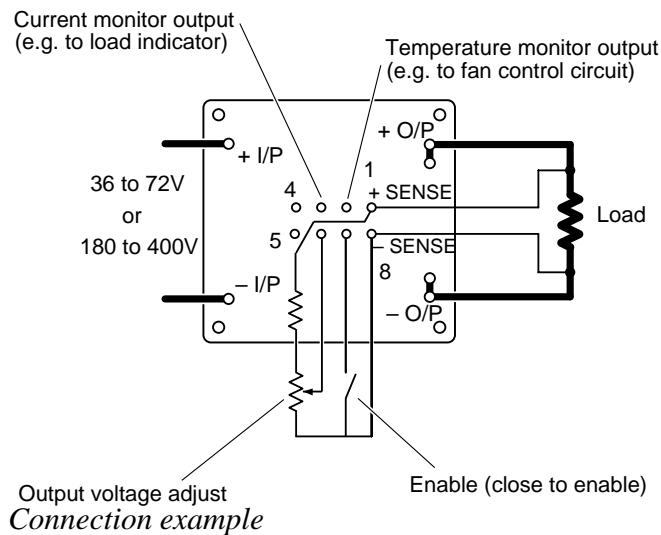
Specifications subject to change without notice.

## ORDERING INFORMATION

| Input Voltage | Output Voltage | Output Current | Model Number      | Input Voltage | Output Voltage | Output Current | Model Number      |
|---------------|----------------|----------------|-------------------|---------------|----------------|----------------|-------------------|
| 300V          | 2.0V           | 20A            | AL60A-300L-020F20 | 48V           | 2.2V           | 30A            | AL60A-048L-022F30 |
| 300V          | 3.3V           | 25A            | AL60A-300L-033F25 | 48V           | 3.3V           | 25A            | AL60A-048L-033F25 |
| 300V          | 5V             | 20A            | AL60A-300L-050F20 | 48V           | 5V             | 10A            | AL60A-048L-050F10 |
| 300V          | 12V            | 9A             | AL60A-300L-120F09 | 48V           | 5V             | 20A            | AL60A-048L-050F20 |
| 300V          | 15V            | 8A             | AL60A-300L-150F08 | 48V           | 12V            | 6A             | AL60A-048L-120F06 |
| 300V          | 24V            | 3A             | AL60A-300L-240F03 | 48V           | 12V            | 9A             | AL60A-048L-120F09 |
|               |                |                |                   | 48V           | 15V            | 8A             | AL60A-048L-150F08 |

Please contact Astec for information on other output voltages, power ranges and configurations.

## CONNECTIONS



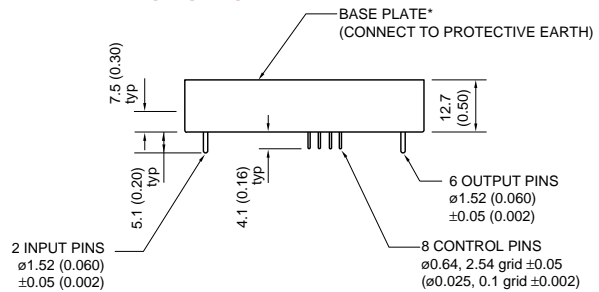
*Parallel connection example between AL80A and AL60A*

## PIN ASSIGNMENTS

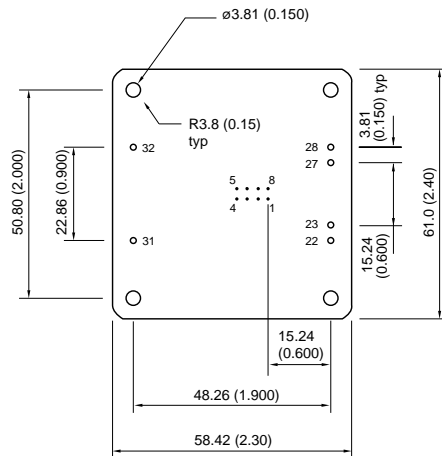
| Input   | Output  | Control Pins |
|---------|---------|--------------|
| 31. +ve | 22. +ve | 1. +SENSE    |
| 32. -ve | 23. -ve | 2. TEMP MON  |
|         | 27. -ve | 3. C MON     |
|         | 28.     | 4. C SHARE   |
|         |         | 5. CLK IN    |
|         |         | 6. V ADJ     |
|         |         | 7. ENABLE    |
|         |         | 8. -SENSE    |

Secondary side controls

## DIMENSIONS



\*Must be connected to protective earth



- Notes:
- All dimensions in mm and (inches)
  - Baseplate must be connected to protective earth
  - General tolerance: .X ±0.5 (0.02)  
.XX ±0.25 (0.010)
  - Surface Flatness: Concave 0.12mm max  
Convex 0.38mm max

Viewed from pins side. Dimensions in mm (inches)

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