

# SDC110P SERIES 110 WATT DC TO DC CONVERTERS

## OUTPUT SPECIFICATIONS

|                          |  |
|--------------------------|--|
| Output Voltage:          | See Rating Chart   |
| Output Current:          | See Rating Chart   |
| Total Output Power:      | 110 watts maximum  |
| Ripple and Noise:        | 1% peak to peak max.   |
| Overvoltage Protection:  | Set at 112-132% of its nominal output voltage  |
| Overcurrent Protection:  | All outputs protected to short circuit conditions  |
| Temperature Coefficient: | All outputs, $\pm 0.04\%$ / °C maximum   |
| Transient Response:      | Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 $\mu$ s after a 25% step load change |

## GENERAL SPECIFICATIONS

|                      |   |
|----------------------|---|
| Switching Frequency: | 50kHz $\pm$ 5kHz                                |
| Efficiency:          | 70% min. at max. output power                   |
| Line Regulation:     | $\pm 0.5\%$ maximum at full load                |
| Withstand Voltage:   | 1,000 VDC from input to output                  |
| MTBF:                | 400,000 hours minimum full load at 25°C ambient |

## ENVIRONMENTAL SPECIFICATIONS

|                        |   |
|------------------------|---|
| Operating Temperature: | 0° to +70° C  |
| Storage Temperature:   | -40° C to +85° C                                    |
| Relative Humidity:     | 5% to 95% non-condensing                            |
| Derating:              | Derate from 100% at +50°C linearly to 50% at +70° C |

## FEATURES

- ◆ Low Cost
- ◆ Small, lightweight construction
- ◆ Three wide input ranges, 10-20 VDC, 18-36 VDC & 36-72 VDC
- ◆ Overvoltage protection
- ◆ Overcurrent protection
- ◆ 100% burn-in

## DESCRIPTION

The SDC110P series of DC to DC converters provide up to 110 watts of continuous output power. Available in three standard input ranges of 10-20 VDC, 18-36 VDC and 36-72 VDC, they are ideal for a variety of applications including telecoms, portable equipment and vehicle-mounted instrumentation. All units are available in compact "open PCB" or "enclosed" mechanical formats.

## INPUT SPECIFICATION

|                |  |
|----------------|--|
| Input Voltage: | 10 to 20 VDC (SDC110P "L")<br>18 to 36 VDC (SDC110P "M")<br>36 to 72 VDC (SDC110P "H") |
| Input Current: | 15A (rms) for 12 VDC<br>9.4A (rms) for 24VDC<br>4.7A (rms) for 48 VDC                  |

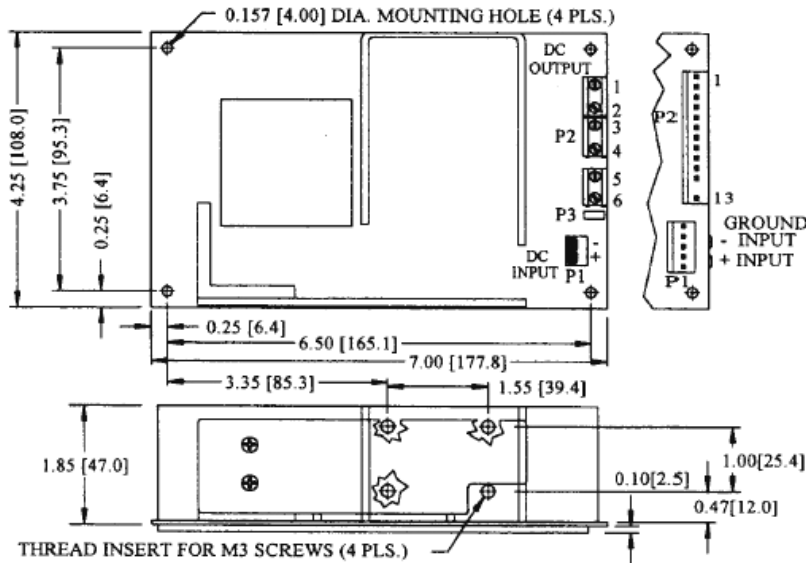


## OUTPUT VOLTAGE AND CURRENT RATING CHART

| Model       | Output #1 |      |      |      | Output #2 |      |      |       |      | Output #3 |      |      |      | Output #4 |      |      |      | Max. Power |
|-------------|-----------|------|------|------|-----------|------|------|-------|------|-----------|------|------|------|-----------|------|------|------|------------|
|             | Vnom      | Imin | Imax | Tol. | Vnom      | Imin | Imax | Ipeak | Tol. | Vnom      | Imin | Imax | Tol. | Vnom      | Imin | Imax | Tol. |            |
| SDC110P10   | 5V        | 0A   | 22A  | 3%   | (N/A)     |      |      |       |      | (N/A)     |      |      |      | (N/A)     |      |      |      | 110W       |
| SDC110P12   | 12V       | 0A   | 9A   | 2%   | (N/A)     |      |      |       |      | (N/A)     |      |      |      | (N/A)     |      |      |      | 110W       |
| SDC110P13   | 15V       | 0A   | 7.5A | 2%   | (N/A)     |      |      |       |      | (N/A)     |      |      |      | (N/A)     |      |      |      | 110W       |
| SDC110P14   | 24V       | 0A   | 4.5A | 2%   | (N/A)     |      |      |       |      | (N/A)     |      |      |      | (N/A)     |      |      |      | 110W       |
| SDC110P16   | 30V       | 0A   | 3.6A | 2%   | (N/A)     |      |      |       |      | (N/A)     |      |      |      | (N/A)     |      |      |      | 110W       |
| SDC110P23   | +5V       | 0.8A | 10A  | 3%   | +12V      | 0A   | 5A   | 9A    | 3%   | (N/A)     |      |      |      | (N/A)     |      |      |      | 110W       |
| SDC110P31   | +5V       | 0.8A | 10A  | 3%   | +12V      | 0A   | 5A   | 9A    | 3%   | -12V      | 0A   | 1A   | 4%   | (N/A)     |      |      |      | 110W       |
| SDC110P32   | +5V       | 0.8A | 10A  | 3%   | +15V      | 0A   | 4A   | 7.5A  | 3%   | -15V      | 0A   | 1A   | 4%   | (N/A)     |      |      |      | 110W       |
| SDC110P40   | +5V       | 0.8A | 10A  | 3%   | +12V      | 0A   | 5A   | 9A    | 3%   | -12V      | 0A   | 1A   | 4%   | -5V       | 0A   | 1A   | 4%   | 110W       |
| SDC110P41   | +5V       | 0.8A | 10A  | 3%   | +15V      | 0A   | 4A   | 7.5A  | 3%   | -15V      | 0A   | 1A   | 4%   | +24V      | 0A   | 1A   | 4%   | 110W       |
| SDC110P42   | +5V       | 0.8A | 10A  | 3%   | +12V      | 0A   | 5A   | 9A    | 3%   | -12V      | 0A   | 1A   | 4%   | +12V      | 0A   | 1A   | 4%   | 110W       |
| SDC110P45-1 | +5V       | 0.8A | 10A  | 3%   | +12V      | 0A   | 5A   | 9A    | 3%   | -12V      | 0A   | 1A   | 4%   | +24V      | 0A   | 1.5A | 8%   | 110W       |
| SDC110P45-2 | +5V       | 0.8A | 10A  | 3%   | +24V      | 0A   | 3A   | 5A    | 5%   | -12V      | 0A   | 1A   | 4%   | +12V      | 0A   | 1A   | 4%   | 110W       |
| SDC110P46   | +5V       | 0.8A | 10A  | 3%   | +15V      | 0A   | 4A   | 7.5A  | 3%   | -15V      | 0A   | 1A   | 4%   | -5V       | 0A   | 1A   | 4%   | 110W       |

- Notes: (1) Peak output current with 10% maximum duty cycle for less than 60 seconds.  
 (2) SDC110P "M" & "H" series are suitable only for 110 watts maximum at 20 CFM forced air cooling or 80 watts maximum at convection cooling.  
 (3) SDC110P "L" series is suitable only for 90 watts maximum at 20 CFM forced air cooling or 70 watts maximum at convection cooling.  
 (4) Suffix codes for mechanical format and input range are as follows: SDC110-XXYZC: "XX" is the model code from the above table; "Y" is the input range (L= 10 ~ 20 VDC, M = 18 ~ 36 VDC, H = 36 ~ 72 VDC); "Z" is the mechanical format (B = L-bracket, C = enclosed) and "C" is the connector code (BLANK = Molex KK type, T = miniature terminal block). Example: SDC110P31MCT (18-36 VDC input range, enclosed format and miniature terminal block).

## MECHANICAL SPECIFICATIONS



Notes:

- Dimensions shown in inch (mm)
- Tolerance 0.02 (0.5) maximum
- Molex KK type connectors:  
Input connector mates with Molex housing 09-50-3051 and Molex 2878 series crimp terminal.  
Output connector mates with Molex housing 09-50-3131 and Molex 2878 series crimp terminal.
- Miniature terminal blocks:  
Input terminals allow wires up to 2mm<sup>2</sup> (AWG #14).  
Output terminals allow wires up to 2mm<sup>2</sup> (AWG #14).
- Weight: 640 grams (PCB format)
- Mechanical details of L-bracket and enclosed formats available upon request.

## PIN CHART

| Mini. Terminal  | 1           | 2         | 3             | 4             | 5         | 6    | 7         | 8   | 9    | 10 | 11 | 12 | 13        |
|-----------------|-------------|-----------|---------------|---------------|-----------|------|-----------|-----|------|----|----|----|-----------|
| Molex Connector | 1, 2, 3     | 4, 5      | 6, 7          | 8, 9          | 10        | 11   | 12        | 13  |      |    |    |    |           |
| Model           |             |           |               |               |           |      |           |     |      |    |    |    |           |
| SDC110P10       | SDC110P12   |           |               |               |           |      |           |     |      |    |    |    |           |
| SDC110P13       | SDC110P14   | Output #1 | Return        | Return        | Output #1 | N.C. | N.C.      | Key | N.C. |    |    |    |           |
| SDC110P16       |             |           |               |               |           |      |           |     |      |    |    |    |           |
| SDC110P23       |             | Output #1 | Common Return | Common Return | Output #2 | N.C. | N.C.      | Key | N.C. |    |    |    |           |
| SDC110P31       | SDC110P32   | Output #1 | Common Return | Common Return | Output #2 | N.C. | Output #3 | Key | N.C. |    |    |    |           |
| SDC110P40       | SDC110P41   |           |               |               |           |      |           |     |      |    |    |    |           |
| SDC110P42       | SDC110P45-1 | Output #1 | Common Return | Common Return | Output #2 | N.C. | Output #3 | Key |      |    |    |    | Output #4 |
| SDC110P45-2     | SDC110P46   |           |               |               |           |      |           |     |      |    |    |    |           |

Note: All data are subject to change without notice

