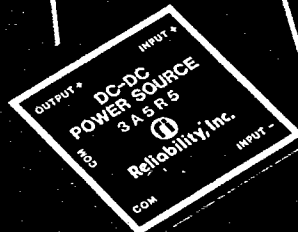
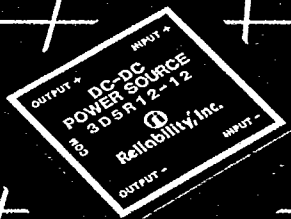


# 3 & 5 WATT REGULATED

DC/DC CONVERTERS ASD SERIES



## FEATURES

- Input/Output isolated
- Continuous short circuit protected, self recovering
- Line regulation 0.02%
- Load regulation 0.02%
- Pi input filter
- No derating to 71°C
- Single and dual outputs
- PC mountable
- Designed to meet FCC Sect 15 Sub Part J, A & B
- 100% burned-in and triple tested
- 3 year warranty

## GENERAL DESCRIPTION

The A and D Series of DC/DC converters provide tight regulation and accuracy in a compact, cost effective package. The series operates from nominal inputs of 5, 12 or 24VDC with single and dual output voltages. Outputs feature extremely low noise due to the use of high quality, reliable components. The series provides 3 to 6 watts of output power with high efficiency for a converter of this type. The A and D Series are designed for board level DC power applications such as A/D and D/A converters, operational and instrument amplifiers, and portable data acquisition equipment.

**GENERAL ELECTRICAL SPECIFICATIONS**

(Specifications at Nominal Input and 25°C)

| PARAMETER                   | LIMIT                          | CONDITIONS                         |
|-----------------------------|--------------------------------|------------------------------------|
| Input Filter                | Pi Filter                      | All Device Types                   |
| Input/Output Isolation      |                                |                                    |
| Voltage                     | 500VDC (Min.)                  | All Units                          |
| Resistance                  | 10 <sup>3</sup> megohms (Min.) |                                    |
| Output Voltage Accuracy     | ± 1%                           | Factory Set                        |
| Load Regulation             | 0.02% (Max.)                   | NL to FL ±12V and ±15V             |
|                             |                                | Output Models                      |
|                             | 0.1% (Max.)                    | 5V Output Models                   |
| Line Regulation             | 0.02% (Max.)                   | Low Line to High Line at Full Load |
| Output Voltage Stability    | 0.02%/°C                       | Typical                            |
| Output Noise/Ripple         | 40mV, P-P (Max.)               | 20 HZ-20MHZ Bandwidth              |
| Short Circuit Protection    | Current Limited                | All Units                          |
| Duration                    | Continuous                     |                                    |
| Thermal Overload Protection | Dual Output Units              |                                    |
| Foldback Current Limiting   | Single Output Units            |                                    |
| Switching Frequency         | 25 KHZ                         |                                    |
| Operating Temperature       | -25° to +71°C                  |                                    |
| Derating                    | None                           | To 71°C                            |
| Storage Temperature         | -35°C to +125°C                |                                    |

**SELECTION GUIDE  
STANDARD PRODUCTS**

| DEVICE TYPE | INPUT VOLTAGE RANGE (VDC) | NL INPUT CURRENT ma (MAX.) | FL INPUT CURRENT A (MAX.) | OUTPUT VOLTAGE VDC | OUTPUT CURRENT ma (MAX.) | PACKAGE |
|-------------|---------------------------|----------------------------|---------------------------|--------------------|--------------------------|---------|
| 3A5RN5      | 4.5 - 5.5                 | .300                       | 1.20                      | + or - 5           | 600                      | A       |
| 3D5RN5      | 4.5 - 5.5                 | .300                       | 1.20                      | + or - 5           | 600                      | D       |
| 3A5RN12-12  | 4.5 - 5.5                 | .200                       | 1.60                      | ± 12               | ± 150                    | A       |
| 3D5RN12-12  | 4.5 - 5.5                 | .200                       | 1.60                      | ± 12               | ± 150                    | D       |
| 3A5RN15-15  | 4.5 - 5.5                 | .200                       | 1.90                      | ± 15               | ± 150                    | A       |
| 3D5RN15-15  | 4.5 - 5.5                 | .200                       | 1.90                      | ± 15               | ± 150                    | D       |
| 5A5RN5      | 4.5 - 5.5                 | .300                       | 1.82                      | + or - 5           | 1000                     | A       |
| 5D5RN5      | 4.5 - 5.5                 | .300                       | 1.82                      | + or - 5           | 1000                     | D       |
| 5A5RN12-12  | 4.5 - 5.5                 | .300                       | 2.40                      | ± 12               | ± 250                    | A       |
| 5D5RN12-12  | 4.5 - 5.5                 | .300                       | 2.40                      | ± 12               | ± 250                    | D       |
| 5A5RN15-15  | 4.5 - 5.5                 | .300                       | 2.40                      | ± 15               | ± 200                    | A       |
| 5D5RN15-15  | 4.5 - 5.5                 | .300                       | 2.40                      | ± 15               | ± 200                    | D       |
| 3A12RN5     | 10.8 - 13.2               | .090                       | .46                       | + or - 5           | 600                      | A       |
| 3D12RN5     | 10.8 - 13.2               | .090                       | .46                       | + or - 5           | 600                      | D       |
| 3A12RN12-12 | 10.8 - 13.2               | .100                       | .55                       | ± 12               | ± 150                    | A       |
| 3D12RN12-12 | 10.8 - 13.2               | .100                       | .55                       | ± 12               | ± 150                    | D       |
| 3A12RN15-15 | 10.8 - 13.2               | .100                       | .65                       | ± 15               | ± 150                    | A       |
| 3D12RN15-15 | 10.8 - 13.2               | .100                       | .65                       | ± 15               | ± 150                    | D       |

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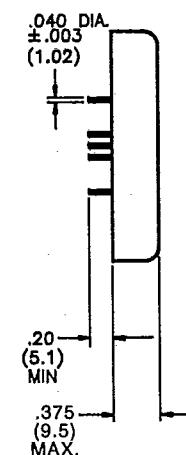
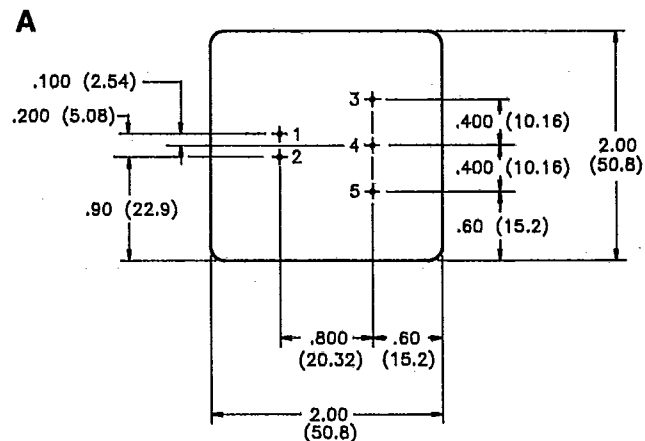
**Reliability**

## SELECTION GUIDE STANDARD PRODUCTS

| DEVICE TYPE | INPUT VOLTAGE RANGE (VDC) | NL INPUT CURRENT A (MAX.) | FL INPUT CURRENT A (MAX.) | OUTPUT VOLTAGE VDC | OUTPUT CURRENT ma (MAX.) | PACKAGE |
|-------------|---------------------------|---------------------------|---------------------------|--------------------|--------------------------|---------|
| 5A12RN5     | 10.8 - 13.2               | .090                      | .72                       | + or - 5           | 1000                     | A       |
| 5D12RN5     | 10.8 - 13.2               | .090                      | .72                       | + or - 5           | 1000                     | D       |
| 5A12RN12-12 | 10.8 - 13.2               | .100                      | .85                       | ± 12               | ± 250                    | A       |
| 5D12RN12-12 | 10.8 - 13.2               | .100                      | .85                       | ± 12               | ± 250                    | D       |
| 5A12RN15-15 | 10.8 - 13.2               | .100                      | .85                       | ± 15               | ± 200                    | A       |
| 5D12RN15-15 | 10.8 - 13.2               | .100                      | .85                       | ± 15               | ± 200                    | D       |
| 3A24RN5     | 21.6 - 26.4               | .050                      | .25                       | + or - 5           | 600                      | A       |
| 3D24RN5     | 21.6 - 26.4               | .050                      | .25                       | + or - 5           | 600                      | D       |
| 3A24RN12-12 | 21.6 - 26.4               | .050                      | .28                       | ± 12               | ± 150                    | A       |
| 3D24RN12-12 | 21.6 - 26.4               | .050                      | .28                       | ± 12               | ± 150                    | D       |
| 3A24RN15-15 | 21.6 - 26.4               | .050                      | .34                       | ± 15               | ± 150                    | A       |
| 3D24RN15-15 | 21.6 - 26.4               | .050                      | .34                       | ± 15               | ± 150                    | D       |
| 5A24RN5     | 21.6 - 26.4               | .050                      | .35                       | + or - 5           | 1000                     | A       |
| 5D24RN5     | 21.6 - 26.4               | .050                      | .35                       | + or - 5           | 1000                     | D       |
| 5A24RN12-12 | 21.6 - 26.4               | .050                      | .45                       | ± 12               | ± 250                    | A       |
| 5D24RN12-12 | 21.6 - 26.4               | .050                      | .45                       | ± 12               | ± 250                    | D       |
| 5A24RN15-15 | 21.6 - 26.4               | .050                      | .45                       | ± 15               | ± 200                    | A       |
| 5D24RN15-15 | 21.6 - 26.4               | .050                      | .45                       | ± 15               | ± 200                    | D       |

## MECHANICAL DIMENSIONS AND PIN CONNECTIONS

A

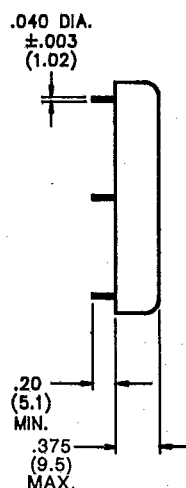
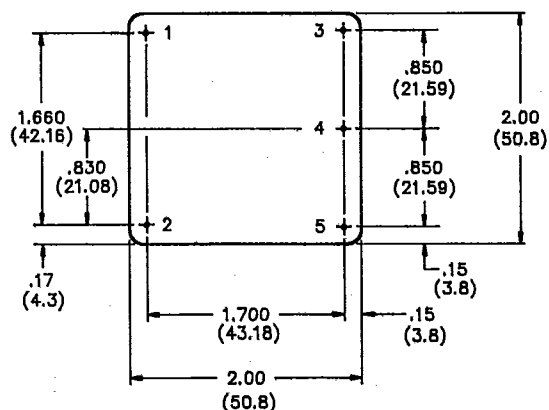


| PIN | SINGLE OUTPUT |
|-----|---------------|
| 1   | + INPUT       |
| 2   | - INPUT       |
| 3   | + OUTPUT      |
| 4   | COMMON        |
| 5   | COMMON        |

| PIN | DUAL OUTPUT |
|-----|-------------|
| 1   | + INPUT     |
| 2   | - INPUT     |
| 3   | + OUTPUT    |
| 4   | COMMON      |
| 5   | - OUTPUT    |

D



Note: All dimensions in parentheses are mm.  
Tolerances unless otherwise specified: .XX ±.03  
.XXX ±.010