

# EC2AN

## 1.0 TO 1.5 WATT DC-DC CONVERTERS



### Features

- 24-Pin DIP Package
- Pi Input Filter
- Unregulated Outputs
- Low Ripple and Noise
- 70% Efficiency

| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT NO LOAD | INPUT CURRENT FULL LOAD | CASE |
|--------------|---------------|----------------|----------------|-----------------------|-------------------------|------|
| EC2A01N      |               | 5 VDC          | 220mA          | 115 mA                | 330 mA                  |      |
| EC2A02N      |               | 12 VDC         | 125 mA         | 115 mA                | 420 mA                  |      |
| EC2A03N      | 5 VDC         | 15 VDC         | 100 mA         | 115 mA                | 420 mA                  | A    |
| EC2A04N      |               | ±12 VDC        | ±62 mA         | 115 mA                | 420 mA                  |      |
| EC2A05N      |               | ±15 VDC        | ±50 mA         | 115 mA                | 420 mA                  |      |
| EC2A11N      |               | 5 VDC          | 220 mA         | 45 mA                 | 120 mA                  |      |
| EC2A12N      |               | 12 VDC         | 125 mA         | 45 mA                 | 165 mA                  |      |
| EC2A13N      | 12 VDC        | 15 VDC         | 100 mA         | 45 mA                 | 165 mA                  | A    |
| EC2A14N      |               | ±12 VDC        | ±62 mA         | 45 mA                 | 165 mA                  |      |
| EC2A15N      |               | ±15 VDC        | ±50 mA         | 45 mA                 | 165 mA                  |      |

### Specifications

#### INPUT SPECIFICATIONS:

|                          |         |
|--------------------------|---------|
| Input Voltage Range..... | ±10%    |
| Input Filter.....        | Pi Type |

#### OUTPUT SPECIFICATIONS:

|                                               |                |
|-----------------------------------------------|----------------|
| Voltage Accuracy.....                         | ±3.0% max.     |
| Ripple and Noise, 20MHz BW <sup>1</sup> ..... | 100mV p-p max. |
| Short Circuit Protection.....                 | Momentary      |
| Line Regulation <sup>2</sup> .....            | ±1.2%          |
| Load Regulation <sup>3</sup> , EC2A01N.....   | ±8.0%          |
| All Other Models.....                         | ±6.0%          |

#### GENERAL SPECIFICATIONS:

|                                      |                                                   |
|--------------------------------------|---------------------------------------------------|
| Efficiency.....                      | 60%~80%                                           |
| Isolation Capacitance.....           | 30pF                                              |
| Isolation Resistance.....            | 10 <sup>9</sup> ohms                              |
| Switching Frequency.....             | 20KHz, min                                        |
| Operating Temperature Range.....     | -25°C to + 71°C                                   |
| Case Temperature (Plastic case)..... | 95°C max.                                         |
| (Copper case).....                   | 100°C max.                                        |
| Cooling.....                         | Free-Air Convection                               |
| Storage Temperature Range.....       | -40°C to + 100°C                                  |
| Dimensions .....                     | 1.25 x 0.8 x 0.4 inches<br>(31.8 x 20.3 x 10.2mm) |
| Weight.....                          | 11.8g                                             |

#### ISOLATION VOLTAGE:

|                               |                   |
|-------------------------------|-------------------|
| 500 VDC min.....              | Standard Models   |
| 3K VDC min <sup>4</sup> ..... | Suffix "H" Models |

#### CASE MATERIAL:

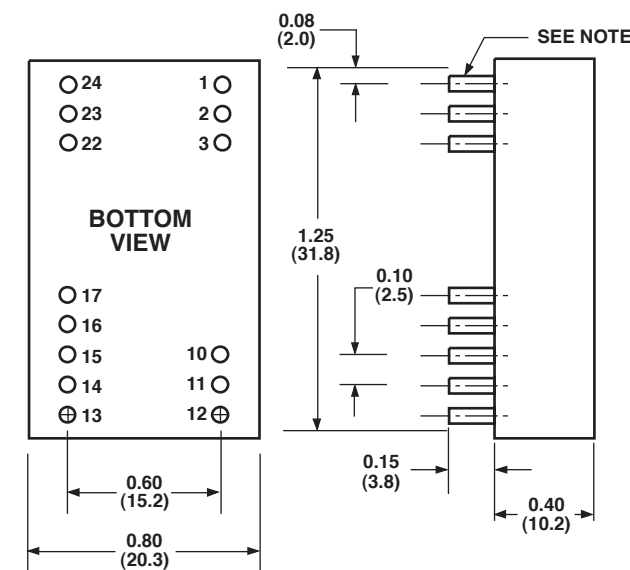
|                        |                                              |
|------------------------|----------------------------------------------|
| Standard Models.....   | Non-Conductive Black Plastic                 |
| Suffix "M" Models..... | Black Coated Copper with Non-Conductive Base |

#### NOTE:

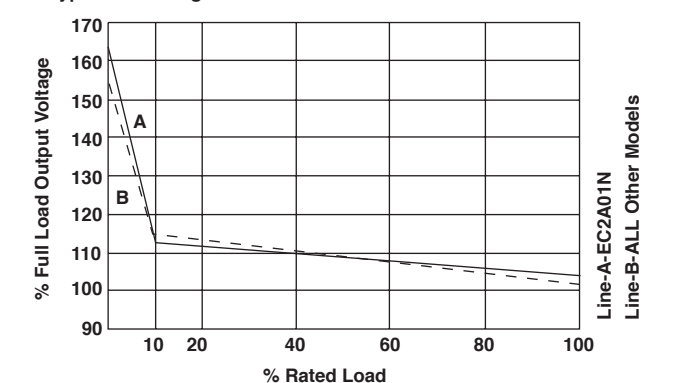
1. 15  $\mu$ F 35V, Tantalum Capacitor Across Each Output.
2. Line regulation is per 1.0% change in input voltage.
3. Load regulation is for load change from 100% to 20% See graph of load regulation.
4. Suffix "HM" 1.5K VDC Instead of 3K VDC Isolation

### CASE A

NOTE: Pin Size is 0.02" Inch (0.5mm) DIA  
All Dimensions In Inches(mm)  
Tolerance .xx= ±0.02, .xxx= ±0.010



Typical Load Regulation



PIN CONNECTION

| Pin  | 500 VDC       |             | Pin      | 1.5K & 3K VDC |             |
|------|---------------|-------------|----------|---------------|-------------|
|      | Single Output | Dual Output |          | Single Output | Dual Output |
| 1 24 | +V Input      | +V Input    | 1 2,3    | +V Input      | +V Input    |
| 2 23 | NC            | -V Output   | 22,23,24 | -V Input      | -V Input    |
| 3 22 | NC            | Common      | 10 11    | NP            | Go Output   |
| 10   | -V Output     | Common      | 12       | -V Output     | -TP         |
| 11   | +V Output     | +V Output   | 13       | +V Output     | -V Output   |
| 12   | -V Input      | -V Input    | 14       | NP            | NP          |
| 13   | -V Input      | -V Input    | 15       | NP            | +V Output   |
| 14   | +V Output     | +V Output   | 16       | NP            | +TP         |
| 15   | -V Output     | Common      | 17       | +TP           | NP          |

\*NP-NO PIN

\*NC-NO CONNECTION WITH PIN

\*TP-TEST POINT

\*GO-GROUND

All Specifications Typical At Nominal Line, Full Load and 25°C Unless Otherwise Noted.