



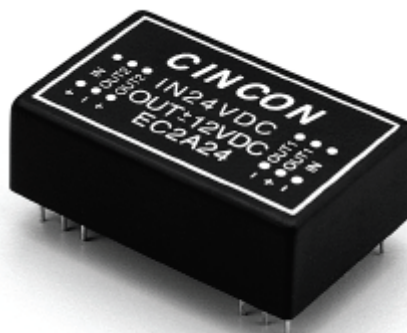
# EC2A SERIES

## 1.5 WATT

## DC-DC CONVERTERS

### FEATURES

- \* 1.5W Output Power
- \* DIP-24/SMD Package
- \* Efficiency to 50%
- \* Regulated Outputs
- \* PI Input Filter
- \* Low Ripple and Noise



| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT |           | CASE   |
|--------------|---------------|----------------|----------------|---------------|-----------|--------|
|              |               |                |                | NO LOAD       | FULL LOAD |        |
| EC2A01       | 5 VDC         | 5 VDC          | 300 mA         | 110 mA        | 620 mA    | DIP-24 |
| EC2A02       | 5 VDC         | 12 VDC         | 125 mA         | 110 mA        | 550 mA    | DIP-24 |
| EC2A03       | 5 VDC         | 15 VDC         | 100 mA         | 110 mA        | 550 mA    | DIP-24 |
| EC2A04       | 5 VDC         | ±12 VDC        | ±60 mA         | 110 mA        | 550 mA    | DIP-24 |
| EC2A05       | 5 VDC         | ±15 VDC        | ±50 mA         | 110 mA        | 550 mA    | DIP-24 |
| EC2A11       | 12 VDC        | 5 VDC          | 300 mA         | 40 mA         | 260 mA    | DIP-24 |
| EC2A12       | 12 VDC        | 12 VDC         | 125 mA         | 40 mA         | 215 mA    | DIP-24 |
| EC2A13       | 12 VDC        | 15 VDC         | 100 mA         | 40 mA         | 215 mA    | DIP-24 |
| EC2A14       | 12 VDC        | ±12 VDC        | ±60 mA         | 40 mA         | 215 mA    | DIP-24 |
| EC2A15       | 12 VDC        | ±15 VDC        | ±50 mA         | 40 mA         | 215 mA    | DIP-24 |
| EC2A21       | 24 VDC        | 5 VDC          | 300 mA         | 20 mA         | 130 mA    | DIP-24 |
| EC2A22       | 24 VDC        | 12 VDC         | 125 mA         | 20 mA         | 115 mA    | DIP-24 |
| EC2A23       | 24 VDC        | 15 VDC         | 100 mA         | 20 mA         | 115 mA    | DIP-24 |
| EC2A24       | 24 VDC        | ±12 VDC        | ±60 mA         | 20 mA         | 115 mA    | DIP-24 |
| EC2A25       | 24 VDC        | ±15 VDC        | ±50 mA         | 20 mA         | 115 mA    | DIP-24 |
| EC2A31       | 28 VDC        | 5 VDC          | 300 mA         | 20 mA         | 110 mA    | DIP-24 |
| EC2A32       | 28 VDC        | 12 VDC         | 125 mA         | 20 mA         | 100 mA    | DIP-24 |
| EC2A33       | 28 VDC        | 15 VDC         | 100 mA         | 20 mA         | 100 mA    | DIP-24 |
| EC2A34       | 28 VDC        | ±12 VDC        | ±60 mA         | 20 mA         | 100 mA    | DIP-24 |
| EC2A35       | 28 VDC        | ±15 VDC        | ±50 mA         | 20 mA         | 100 mA    | DIP-24 |
| EC2A41       | 48 VDC        | 5 VDC          | 300 mA         | 15 mA         | 65 mA     | DIP-24 |
| EC2A42       | 48 VDC        | 12 VDC         | 125 mA         | 15 mA         | 60 mA     | DIP-24 |
| EC2A43       | 48 VDC        | 15 VDC         | 100 mA         | 15 mA         | 60 mA     | DIP-24 |
| EC2A44       | 48 VDC        | ±12 VDC        | ±60 mA         | 15 mA         | 60 mA     | DIP-24 |
| EC2A45       | 48 VDC        | ±15 VDC        | ±50 mA         | 15 mA         | 60 mA     | DIP-24 |

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

Input Voltage Range .....  $\pm 10\%$   
Input Filter ..... PI Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy .....  $\pm 4.0\%$  max.  
Temperature coefficient .....  $\pm 0.02\%/^{\circ}\text{C}$   
Ripple & Noise, 20MHz BW ..... 50mV pk-pk max.  
Short Circuit Protection ..... Momentary  
Line Regulation .....  $\pm 0.3\%$   
Load Regulation .....  $\pm 0.5\%$

## GENERAL SPECIFICATIONS:

Efficiency ..... 50%  
Isolation Capacitance ..... 30pF  
Isolation Resistance .....  $10^9$  ohm  
Switching Frequency ..... 20KHz min.  
Operating Ambient Temperature Range .....  $-25^{\circ}\text{C}$  to  $+71^{\circ}\text{C}$   
De-rating, Above  $71^{\circ}\text{C}$  (Plastic Case) ..... Linearly to Zero power at  $95^{\circ}\text{C}$   
De-rating, Above  $71^{\circ}\text{C}$  (Copper Case) ..... Linearly to Zero power at  $100^{\circ}\text{C}$   
Case Temperature (Plastic case note 2) .....  $95^{\circ}\text{C}$  max.  
(Copper case note 2) .....  $100^{\circ}\text{C}$  max.  
Cooling ..... Natural Convection  
Storage Temperature Range .....  $-40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$   
Dimensions ..... DIP .....  $1.25 \times 0.80 \times 0.40$  inches (31.8x20.3x10.2mm)  
SMD .....  $1.25 \times 0.80 \times 0.45$  inches (31.8x20.3x11.4mm)  
Weight ..... 12.5g

## ISOLATION VOLTAGE:

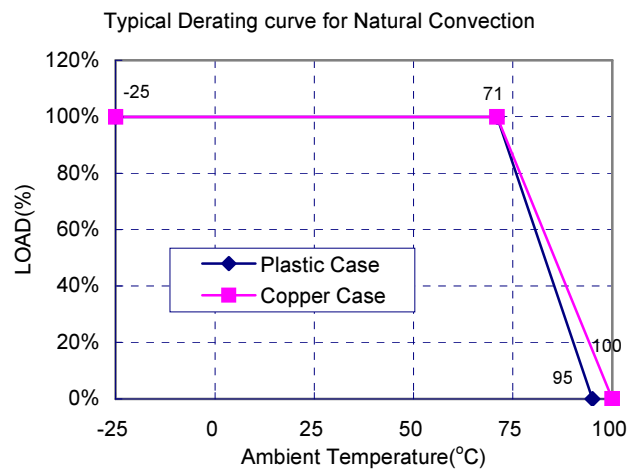
500 VDC min. .... Standard Models  
3KVDC min. .... Suffix "H" Models  
1.5KVDC min. .... Suffix "HM" Models

## CASE MATERIAL:

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

## NOTE:

1. Suffix "S" to the Model Number with SMD packages.
2. Maximum case temperature under any operating condition should not be exceeded  $95^{\circ}\text{C}$  (Plastic Case),  $100^{\circ}\text{C}$  (Copper Case).



## Case A Dimensions:

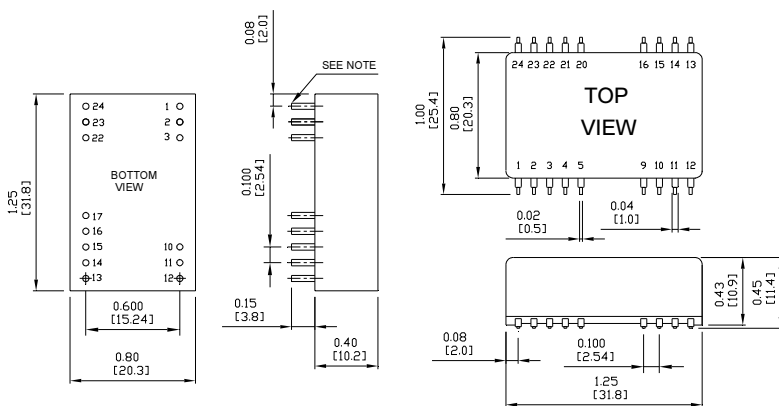
NOTE: Pin Size is 0.02" Inch (0.5mm) DIA  $\pm 0.05$

All Dimensions In Inches (mm)

Tolerances Inches: X.XX =  $\pm 0.02$ , X.XXX =  $\pm 0.010$

Millimeters: X.X =  $\pm 0.5$ , X.XX =  $\pm 0.25$

### CASE AS



| PIN CONNECTION |               |     |             |     |               |               |     |             |     |
|----------------|---------------|-----|-------------|-----|---------------|---------------|-----|-------------|-----|
| 500 VDC        |               |     |             |     | 1.5K & 3K VDC |               |     |             |     |
| Pin            | Single Output |     | Dual Output |     | Pin           | Single Output |     | Dual Output |     |
|                | DIP           | SMD | DIP         | SMD |               | DIP           | SMD | DIP         | SMD |
| 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      |     | 4             | NP            | NC  | NP          | NC  |
| 4,5            | NP            | NC  | NP          | NC  | 5             | NP            | NC  | NP          | NC  |
| 9              | NP            | NC  | NP          | NC  | 9             | NP            | NC  | NP          | NC  |
| 10             | -V Output     |     | Common      |     | 10,11         | NP            | NC  | Common      |     |
| 11             | +V Output     |     | +V Output   |     | 12            | -V Output     |     | -TP         |     |
| 12,13          | -V Input      |     | -V Input    |     | 13            | +V Output     |     | -V Output   |     |
| 14             | +V Output     |     | +V Output   |     | 14            | NP            | NC  | NP          | NC  |
| 15             | -V Output     |     | Common      |     | 15            | NP            | NC  | +V Output   |     |
| 16             | NP            | NC  | NP          | NC  | 16            | NP            | NC  | +TP         |     |
| 17             | NP            |     | NP          |     | 17            | +TP           | NP  | NP          |     |
| 20,21          | NP            | NC  | NP          | NC  | 20,21         | NP            | NC  | NP          | NC  |

\* NP-NO PIN

\* NC-NO CONNECTION WITH PIN

\* TP-TEST POINT