



## EC3AW SERIES

### 3 WATT 4:1 INPUT RANGE

### DC-DC CONVERTERS



## FEATURES

- \* 3W Isolated Output
- \* DIP-24/SMD Package
- \* Efficiency to 77%
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Pi Input Filter
- \* Continuous Short Circuit Protection
- \* Safety Meets IEC/EN/UL 62368-1



| MODEL NUMBER <sup>(1)</sup> | INPUT VOLTAGE <sup>(2)</sup> | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT |           | % EFF. <sup>(3)</sup> | CASE   |
|-----------------------------|------------------------------|----------------|----------------|---------------|-----------|-----------------------|--------|
|                             |                              |                |                | NO LOAD       | FULL LOAD |                       |        |
| EC3AW01□                    | 9-36 VDC                     | 5 VDC          | 600 mA         | 15 mA         | 174 mA    | 72                    | DIP-24 |
| EC3AW02□                    | 9-36 VDC                     | 12 VDC         | 250 mA         | 15 mA         | 165 mA    | 76                    | DIP-24 |
| EC3AW03□                    | 9-36 VDC                     | 15 VDC         | 200 mA         | 15 mA         | 165 mA    | 76                    | DIP-24 |
| EC3AW04□                    | 9-36 VDC                     | ±5 VDC         | ±300 mA        | 25 mA         | 179 mA    | 70                    | DIP-24 |
| EC3AW05□                    | 9-36 VDC                     | ±12 VDC        | ±125 mA        | 25 mA         | 174 mA    | 72                    | DIP-24 |
| EC3AW06□                    | 9-36 VDC                     | ±15 VDC        | ±100 mA        | 25 mA         | 174 mA    | 72                    | DIP-24 |
| EC3AW07□                    | 9-36 VDC                     | 3.3 VDC        | 600 mA         | 15 mA         | 117 mA    | 70                    | DIP-24 |
| EC3AW11□                    | 18-72 VDC                    | 5 VDC          | 600 mA         | 7.5 mA        | 87 mA     | 72                    | DIP-24 |
| EC3AW12□                    | 18-72 VDC                    | 12 VDC         | 250 mA         | 7.5 mA        | 81 mA     | 77                    | DIP-24 |
| EC3AW13□                    | 18-72 VDC                    | 15 VDC         | 200 mA         | 7.5 mA        | 81 mA     | 77                    | DIP-24 |
| EC3AW14□                    | 18-72 VDC                    | ±5 VDC         | ±300 mA        | 12 mA         | 88 mA     | 71                    | DIP-24 |
| EC3AW15□                    | 18-72 VDC                    | ±12 VDC        | ±125 mA        | 12 mA         | 87 mA     | 72                    | DIP-24 |
| EC3AW16□                    | 18-72 VDC                    | ±15 VDC        | ±100 mA        | 12 mA         | 87 mA     | 72                    | DIP-24 |
| EC3AW17□                    | 18-72 VDC                    | 3.3 VDC        | 600 mA         | 7.5 mA        | 58 mA     | 70                    | DIP-24 |

#### NOTE:

1. □ Can be None, M, H, HM, MS or HMS.
2. Nominal Input Voltage 24 or 48 VDC
3. Typical Value at Nominal Input Voltage and Full Load.

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

Input Voltage Range ..... 24V ..... 9-36V  
 ..... 48V ..... 18-72V  
 Input Filter ..... Pi Type

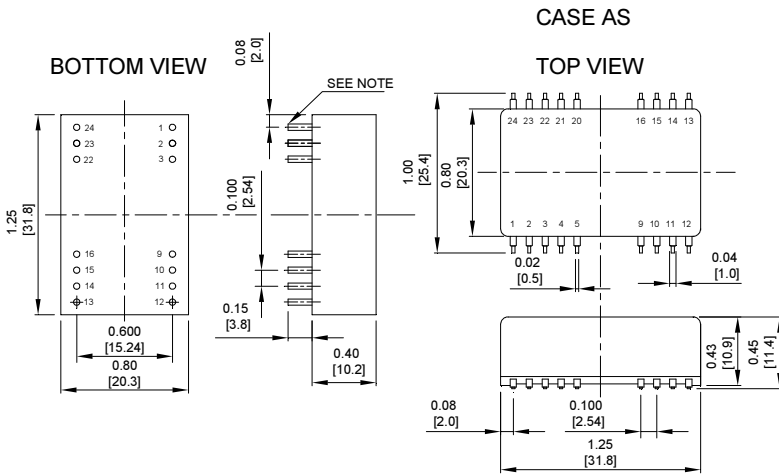
## OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±2.0% max.  
 Voltage Balance (Dual) ..... ±1.0% max.  
 Temperature Coefficient ..... ±0.05%/°C max.  
 Ripple & Noise, 20MHz BW Single & ±5V ..... 100mV pk-pk max.  
 Dual ..... 1% pk-pk max.  
 Short Circuit Protection ..... Continuous  
 Line Regulation Single/Dual (note1) ..... ±0.5% max.  
 Load Regulation Single (note2) ..... ±0.5% max.  
 Dual (note3) ..... ±1.0% max.

## GENERAL SPECIFICATIONS:

Efficiency ..... See Table  
 Isolation Resistance ..... 10<sup>9</sup> Ohm min.  
 Switching Frequency ..... 100KHz min.  
 Operating Ambient Temperature Range ..... -25°C to +71°C  
 De-rating, Above 71°C (Plastic Case) ..... Linearly to Zero Power at 95°C  
 De-rating, Above 71°C (Copper Case) ..... Linearly to Zero Power at 100°C  
 Case Temperature (Plastic case note6) ..... 95°C max.  
 (Copper case note6) ..... 100°C max.  
 Cooling ..... Natural Convection  
 Storage Temperature Range ..... -40°C to +100°C  
 Dimensions ..... DIP ..... 1.25x0.80x0.40 inches (31.8x20.3x10.2 mm)  
 SMD ..... 1.25x0.80x0.45 inches (31.8x20.3x11.4 mm)  
 Weight ..... 12.5g

## Case A Dimensions:



## ISOLATION VOLTAGE:

500 VDC min. .... Standard Models  
 3K VDC min. (note4) ..... Suffix "H" Models  
 1.5K VDC min. .... Suffix "HM" Models

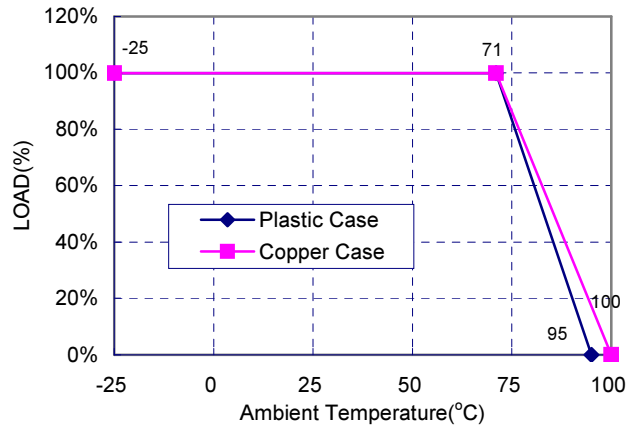
## CASE MATERIAL:

Standard Models ..... Non-Conductive Black Plastic  
 Suffix "M" Models (note5) ..... Black Coated Copper with Non-Conductive Base

## NOTE:

1. Measured from high line to low line.
2. Measured from full load to 10% load.
3. Measured from full load to 1/4 load.
4. Non-Conductive black plastic only.
5. Suffix "S" to the model number with SMD packages.
6. Maximum case temperature under any operating condition should not be exceeded 95°C (Plastic Case), 100°C (Copper Case).

Typical Derating curve for Natural Convection



| 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    |               | 1,24  | NP            | NC  | NP          | NC  |
| 2,23           | NC            |     | -V Output   |               | 2,3   | -V Input      |     | -V Input    |     |
| 3,22           | NC            |     | Common      |               | 4,5   | NP            | NC  | NP          | NC  |
| 4              | NP            | NC  | NP          | NC            | 9     | NC            |     | Common      |     |
| 5              | NP            | NC  | NP          | NC            | 10,15 | NC            |     | NC          |     |
| 9              | NP            | NC  | NP          | NC            | 11    | NC            |     | -V Output   |     |
| 10,15          | -V Output     |     | Common      |               | 12,13 | NP            | NC  | NP          | NC  |
| 11,14          | +V Output     |     | +V Output   |               | 14    | +V Output     |     | +V Output   |     |
| 12,13          | -V Input      |     | -V Input    |               | 16    | -V Output     |     | Common      |     |
| 16             | NP            | NC  | NP          | NC            | 20,21 | NP            | NC  | NP          | NC  |
| 20,21          | NP            | NC  | NP          | NC            | 22,23 | +V Input      |     | +V Input    |     |

\* NP-NO PIN  
 \* NC-NO CONNECTION WITH PIN  
 NOTE: Pin Size is 0.02 ±0.002 Inch (0.5±0.05 mm) DIA  
 All Dimensions In Inches (mm)  
 Tolerances Inches: X.XX= ±0.02, X.XXX= ±0.010  
 Millimeters: X.X= ±0.5, X.XX= ±0.25