



# EC4AW SERIES

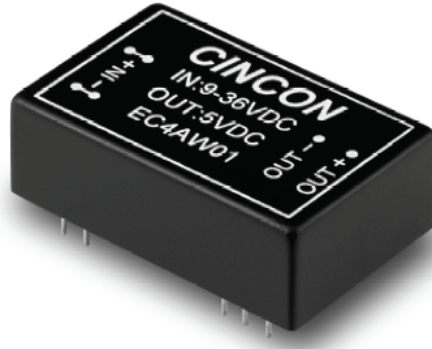
## 3.3-6 WATT 4:1 INPUT RANGE

### DC-DC CONVERTERS



## FEATURES

- \* 3.3-6W Isolated Output
- \* DIP-24/SMD Package
- \* Efficiency to 83%
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Pi Input Filter
- \* Continuous Short Circuit Protection
- \* Without Tantalum Capacitor Inside



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		% EFF.		CAPACITOR LOAD MAX.
				NO LOAD	FULL LOAD	(2)	(3)	
EC4AW01	9-36 VDC	5 VDC	1000 mA	5 mA	254 mA	84	82	1000uF
EC4AW02	9-36 VDC	12 VDC	470 mA	5 mA	283 mA	85	83	470uF
EC4AW03	9-36 VDC	15 VDC	400 mA	5 mA	301 mA	85	83	400uF
EC4AW04	9-36 VDC	±12 VDC	±230 mA	7.5 mA	280 mA	85	82	230uF
EC4AW05	9-36 VDC	±15 VDC	±190 mA	7.5 mA	293 mA	85	81	190uF
EC4AW06	9-36 VDC	±5 VDC	±500 mA	5 mA	251 mA	85	83	500uF
EC4AW07	9-36 VDC	3.3 VDC	1000 mA	5 mA	176 mA	80	78	1000uF
EC4AW11	18-72 VDC	5 VDC	1000 mA	5 mA	132 mA	83	79	1000uF
EC4AW12	18-72 VDC	12 VDC	470 mA	5 mA	143 mA	86	82	470uF
EC4AW13	18-72 VDC	15 VDC	400 mA	5 mA	154 mA	86	81	400uF
EC4AW14	18-72 VDC	±12 VDC	±230 mA	7.5 mA	143 mA	85	80	230uF
EC4AW15	18-72 VDC	±15 VDC	±190 mA	7.5 mA	148 mA	85	80	190uF
EC4AW16	18-72 VDC	±5 VDC	±500 mA	5 mA	130 mA	84	80	500uF
EC4AW17	18-72 VDC	3.3 VDC	1000 mA	5 mA	93 mA	79	74	1000uF

### NOTE:

1. Nominal Input Voltage: 24 or 48 VDC.
2. Measured at 12VDC for 24Vin, 24VDC for 48Vin.
3. Measured at Nominal Input Voltage.

# 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

Ripple & Noise, 20MHz BW ..... 100mV 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.

Start up time ..... 30 ms typ.

## GENERAL SPECIFICATIONS:

Efficiency ..... See Table

Isolation Resistance ..... 10<sup>9</sup> ohm min.

Switching Frequency ..... 200KHz min.

Operating Ambient Temperature Range ..... -40°C to +85°C

De-rating, Above 71°C ..... Linearly to Zero power at 100°C

Case Temperature ..... 100°C max

Cooling ..... Natural Convection

Storage Temperature Range ..... -40°C to +100°C

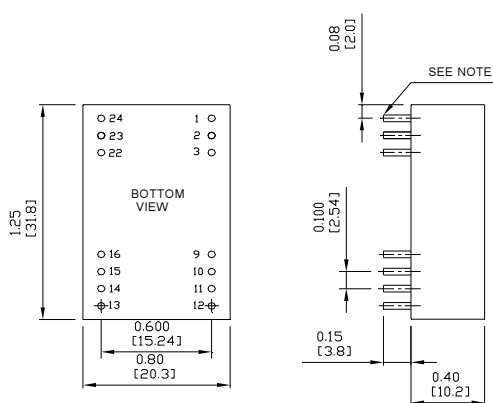
Dimensions ..... DIP ..... 1.25x0.80x0.40 inches(31.8x20.3x10.2 mm)

..... SMD ..... 1.25x0.80x0.45 inches(31.8x20.3x11.4 mm)

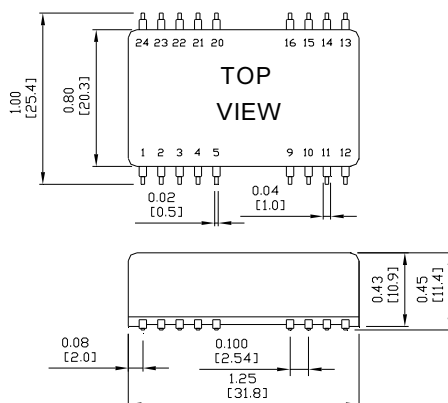
Weight ..... 12.5g

## Case A Dimensions:

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



## CASE AS



## ISOLATION VOLTAGE:

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

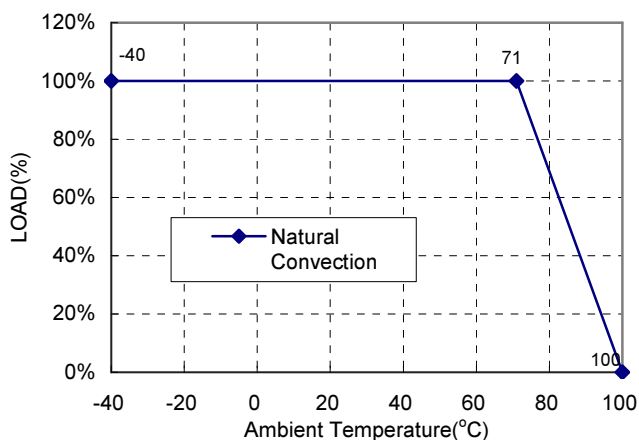
## CASE MATERIAL:

Standard Models ..... Non-Conductive Black Plastic  
 Suffix "HM" 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 100°C

Typical Derating curve for Natural Convection



Pin	PIN CONNECTION			
	Single Output		Dual Output	
	DIP	SMD	DIP	SMD
1,24	NP	NC	NP	NC
2,3	-V Input		-V Input	
4,5	NP	NC	NP	NC
9	NC		Common	
10,15	NC		NC	
11	NC		-V Output	
12,13	NP	NC	NP	NC
14	+V Output		+V Output	
16	-V Output		Common	
20,21	NP	NC	NP	NC
22,23	+V Input		+V Input	

\* NC-NO CONNECTION WITH PIN  
 \* NP-NO PIN