



# EC4AW-H6 SERIES

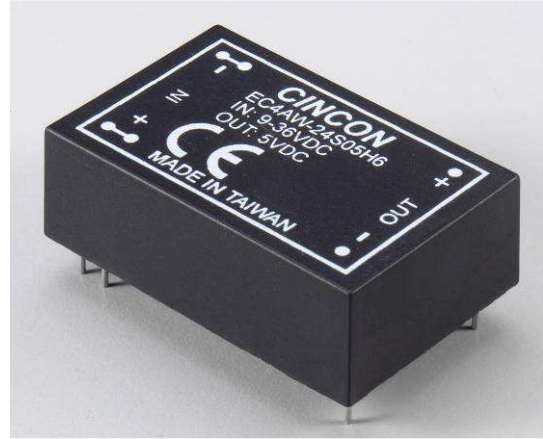
## 5-6 WATT

### DC-DC CONVERTERS



## FEATURES

- \* 5-6W Isolated Output
- \* DIP-24 Package
- \* Regulated Outputs
- \* Efficiency to 85%
- \* Continuous Short Circuit Protection
- \* I/O Isolation Voltage 6000VDC
- \* Reinforced Insulation Rated For Working Voltage 300VAC
- \* 5  $\mu$ A Leakage Current
- \* EMI Meets EN55022 Class A
- \* Safety Meets UL60950-1 and UL60601-1



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.		CAPACITOR LOAD MAX.
			MIN.(4)	MAX.	NO LOAD	FULL LOAD	(2)	(3)	
EC4AW-24S05H6	9-36 VDC	5 VDC	100 mA	1000 mA	10 mA	260 mA	81	80	1000 $\mu$ F
EC4AW-24S12H6	9-36 VDC	12 VDC	50 mA	500 mA	10 mA	295 mA	85.5	85	500 $\mu$ F
EC4AW-24D12H6	9-36 VDC	$\pm$ 12 VDC	25 mA	$\pm$ 250 mA	15 mA	298 mA	84.5	84	250 $\mu$ F
EC4AW-24D15H6	9-36 VDC	$\pm$ 15 VDC	20 mA	$\pm$ 200 mA	15 mA	298 mA	84.5	84	200 $\mu$ F
EC4AW-48S05H6	18-72 VDC	5 VDC	100 mA	1000 mA	5 mA	130 mA	81	80	1000 $\mu$ F
EC4AW-48S12H6	18-72 VDC	12 VDC	50 mA	500 mA	5 mA	149 mA	85	84	500 $\mu$ F
EC4AW-48D12H6	18-72 VDC	$\pm$ 12 VDC	25 mA	$\pm$ 250 mA	8 mA	150 mA	84	83	250 $\mu$ F
EC4AW-48D15H6	18-72 VDC	$\pm$ 15 VDC	20 mA	$\pm$ 200 mA	8 mA	149 mA	85	84	200 $\mu$ F

#### NOTE:

1. Nominal Input Voltage 24 or 48VDC
2. Measured at 12VDC for 24Vin Models, 24VDC for 48Vin Models
3. Measured at Nominal Input Voltage
4. Operation Under Minimum Load Will not Damage The Converter, But It May not Meet All Specifications

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

Input Voltage Range	24Vin	9-36V
	48Vin	18-72V
Under Voltage Protection	24Vin power up	8.8V typ.
	24Vin power down	8V typ.
	48Vin power up	17V typ.
	48Vin power down	16V typ.
Leakage Current		5uA max.
Input Filter		Pi Type
Input Surge (100ms max.)	24Vin	50V max.
	48Vin	100V max.

## OUTPUT SPECIFICATIONS:

Voltage Accuracy	±1.5% max.
Voltage Balance (Dual)	±2.0% max.
Transient Response: 75% - 100% Step Load Change	
Error Band	±6% Vout nominal
Recovery Time	< 500us
Ripple & Noise, 20MHz BW (with 0.1uF MLCC)	5V ..... 100mV pk-pk max.
	12V/15V ... 1% pk-pk max.
Temperature Coefficient	±0.05%/°C
Line Regulation (note1)	±0.5% max.
Load Regulation	Single (note2) ..... ±0.5% max.
	Dual (note3) ..... ±1.0% max.
Cross Regulation(Dual output) Load cross variation 25%/100%	±5% max.
Output Short Circuit Protection	Continuous
Start up time	1.5ms typ.

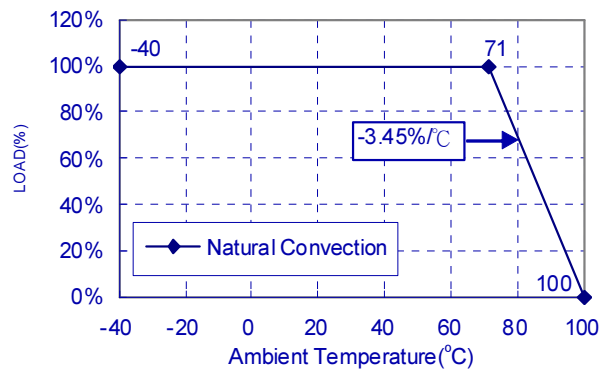
## GENERAL SPECIFICATIONS:

Efficiency	See Table
Isolation Voltage	6000VDC min.
Isolation Resistance	10 <sup>9</sup> ohm min.
Isolation Capacitance	40pF typ.
Reinforced Insulation	Creepage Distances ..... 8mm min.
	Air Clearances ..... 8mm min.
Switching Frequency	100KHz min.
Operating Ambient Temperature	-40°C to +71°C
De-rating, Above 71°C	Linearly to Zero power at 100°C
Case Temperature (note4)	100°C max.
Storage Temperature	-40°C to +100°C
EMI	Conductive EMI Meet EN55022 Class A
Humidity	95% RH max. Non condensing
MTBF	MIL-HDBK-217-F, GB, 25°C, Full Load ..... 1430Khrs typ.
Dimensions	1.25x0.80x0.40 inches (31.8x20.3x10.2 mm)
Case Material	Non-Conductive Black Plastic
Weight	13.1g

## NOTE:

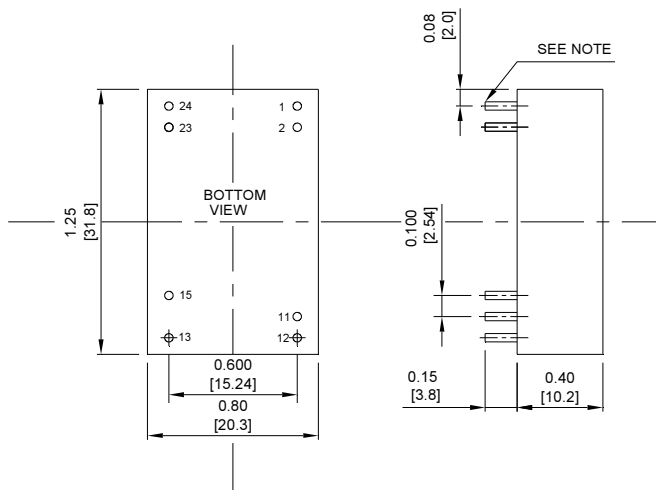
1. Measured from high line to low line.
2. Measured from full load to 10% load.
3. Measured from full load to 25% load.
4. Maximum case temperature under any operating condition should not be exceeded 100°C.

Typical Derating curve for Natural Convection



## 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



PIN CONNECTION		
Pin	Single Output	Dual Output
1	+V Input	+V Input
2	+V Input	+V Input
11	NP	Common
12	-V Output	NP
13	+V Output	-V Output
15	NP	+V Output
23	-V Input	-V Input
24	-V Input	-V Input

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