



EC4AW-H6 SERIES

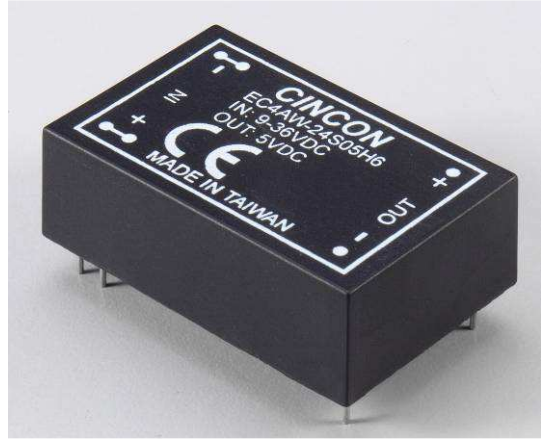
5-6 WATT

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 uA Leakage Current
- * EMI Meets EN55022 Class A
- * Safety Meets UL60950-1 and UL60601-1
- * CE Mark Meets 2004/108/EC



| 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 | 1000uF |
| EC4AW-24S12H6 | 9-36 VDC | 12 VDC | 50 mA | 500 mA | 10 mA | 295 mA | 85.5 | 85 | 500uF |
| EC4AW-24D12H6 | 9-36 VDC | ±12 VDC | 25 mA | ±250 mA | 15 mA | 298 mA | 84.5 | 84 | 250uF |
| EC4AW-24D15H6 | 9-36 VDC | ±15 VDC | 20 mA | ±200 mA | 15 mA | 298 mA | 84.5 | 84 | 200uF |
| EC4AW-48S05H6 | 18-72 VDC | 5 VDC | 100 mA | 1000 mA | 5 mA | 130 mA | 81 | 80 | 1000uF |
| EC4AW-48S12H6 | 18-72 VDC | 12 VDC | 50 mA | 500 mA | 5 mA | 149 mA | 85 | 84 | 500uF |
| EC4AW-48D12H6 | 18-72 VDC | ±12 VDC | 25 mA | ±250 mA | 8 mA | 150 mA | 84 | 83 | 250uF |
| EC4AW-48D15H6 | 18-72 VDC | ±15 VDC | 20 mA | ±200 mA | 8 mA | 149 mA | 85 | 84 | 200uF |

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. |

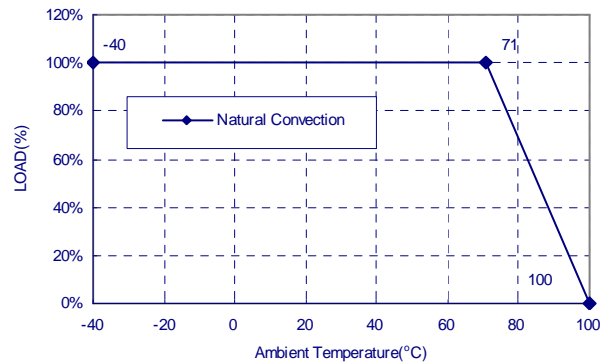
GENERAL SPECIFICATIONS:

| | |
|-------------------------------------|---|
| Efficiency | See Table |
| Isolation Voltage | 6000VDC min. |
| Isolation Resistance | 10 ⁹ ohm min. |
| Isolation Capacitance | 40pF typ. |
| Reinforced Insulation | Creepage Distances |
| | Air Clearances |
| 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-STD-217-F, GB, 25°C, Full Load |
| | T.B.D hrs |
| Dimensions | 1.25x0.80x0.40 inches (31.8x20.3x10.2 mm) |
| Case Material | Non-Conductive Black Plastic |
| Weight | T.B.D g |

NOTE:

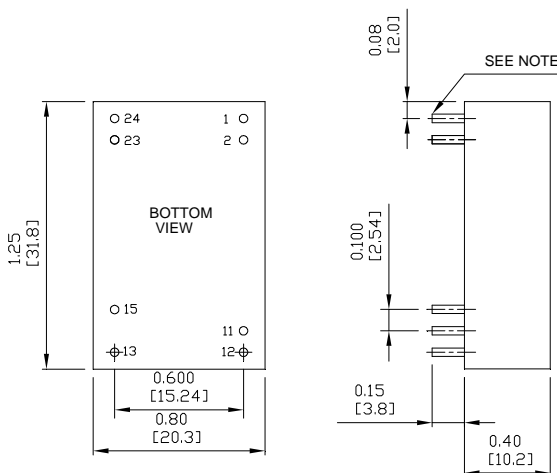
1. Measured from high line to low line.
2. Measured from full load to 10% load.
3. Measured from full load to 25% load.
4. Maximum case temperature under any operating condition should not be exceeded 100°C.

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