



EC4AB SERIES

5-6 WATT 2:1 INPUT RANGE

DC-DC CONVERTERS



FEATURES

- * 5-6W Isolated Output
- * DIP-24/SMD Package
- * Efficiency to 84%
- * Regulated Outputs
- * Pi Input Filter
- * Continuous Short Circuit Protection
- * Meets EN55032 Class B, Conducted
- * Remote On/Off (Option)
- * Safety Meets IEC/EN/UL 62368-1



| MODEL NUMBER ⁽¹⁾ | INPUT VOLTAGE ⁽²⁾ | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT | | % EFF. ⁽³⁾ | CASE |
|-----------------------------|------------------------------|----------------|----------------|---------------|-----------|-----------------------|--------|
| | | | | NO LOAD | FULL LOAD | | |
| EC4AB01□ | 9-18VDC | 5VDC | 1000 mA | 7.5 mA | 548 mA | 76 | DIP-24 |
| EC4AB02□ | 9-18VDC | 12VDC | 470 mA | 7.5 mA | 588 mA | 80 | DIP-24 |
| EC4AB03□ | 9-18VDC | 15VDC | 400 mA | 7.5 mA | 617 mA | 81 | DIP-24 |
| EC4AB04□ | 9-18VDC | ±12VDC | ±230 mA | 12 mA | 568 mA | 81 | DIP-24 |
| EC4AB05□ | 9-18VDC | ±15VDC | ±190 mA | 12 mA | 586 mA | 81 | DIP-24 |
| EC4AB06□ | 9-18VDC | ±5VDC | ±500 mA | 12 mA | 548 mA | 76 | DIP-24 |
| EC4AB07□ | 9-18VDC | 3.3VDC | 1000 mA | 7.5 mA | 382 mA | 72 | DIP-24 |
| EC4AB11□ | 18-36VDC | 5VDC | 1000 mA | 5 mA | 264 mA | 79 | DIP-24 |
| EC4AB12□ | 18-36VDC | 12VDC | 470 mA | 5 mA | 283 mA | 83 | DIP-24 |
| EC4AB13□ | 18-36VDC | 15VDC | 400 mA | 5 mA | 298 mA | 84 | DIP-24 |
| EC4AB14□ | 18-36VDC | ±12VDC | ±230 mA | 7.5 mA | 284 mA | 81 | DIP-24 |
| EC4AB15□ | 18-36VDC | ±15VDC | ±190 mA | 7.5 mA | 290 mA | 82 | DIP-24 |
| EC4AB16□ | 18-36VDC | ±5VDC | ±500 mA | 7.5 mA | 264 mA | 79 | DIP-24 |
| EC4AB17□ | 18-36VDC | 3.3VDC | 1000 mA | 5 mA | 188 mA | 73 | DIP-24 |
| EC4AB21□ | 36-72VDC | 5VDC | 1000 mA | 2 mA | 132 mA | 79 | DIP-24 |
| EC4AB22□ | 36-72VDC | 12VDC | 470 mA | 2 mA | 143 mA | 82 | DIP-24 |
| EC4AB23□ | 36-72VDC | 15VDC | 400 mA | 2 mA | 154 mA | 81 | DIP-24 |
| EC4AB24□ | 36-72VDC | ±12VDC | ±230 mA | 3 mA | 142 mA | 81 | DIP-24 |
| EC4AB25□ | 36-72VDC | ±15VDC | ±190 mA | 3 mA | 148 mA | 80 | DIP-24 |
| EC4AB26□ | 36-72VDC | ±5VDC | ±500 mA | 3 mA | 132 mA | 79 | DIP-24 |
| EC4AB27□ | 36-72VDC | 3.3VDC | 1000 mA | 3 mA | 94 mA | 73 | DIP-24 |

NOTE:

1. □ Can be None, M, H, HM, MS, HMS, HT, HMT or HMTS.
2. Nominal Input voltage 12, 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 | 12V | 9-18V |
| | 24V | 18-36V |
| | 48V | 36-72V |

Positive Logic Remote On/Off (See note6)

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 | 3.3V/5V 100mV pk-pk max. |
| | 12V/15V 1% pk-pk max. |
| Short Circuit Protection | Continuous |
| Line Regulation Single/Dual (note1) | ±0.5% max. |
| Load Regulation (note2) Single | ±0.5% max. |
| | Dual (note3) ±1.0% max. |

GENERAL SPECIFICATIONS:

| | |
|--|---|
| Efficiency | See Table |
| Isolation Resistance | 10 ⁹ 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 note 8) | 95°C max. |
| | (Copper case note 8) 100°C max. |
| Cooling | Natural Convection |
| Storage Temperature Range | -40°C to +100°C |
| EMI/RFI | Conductive EMI Meet EN55032 Class B |
| Dimensions | DIP 1.25x0.80x0.50 inches (31.8x20.3x12.7 mm) |
| | SMD 1.25x0.80x0.55 inches (31.8x20.3x14.0 mm) |
| Weight | 15g |

ISOLATION VOLTAGE:

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

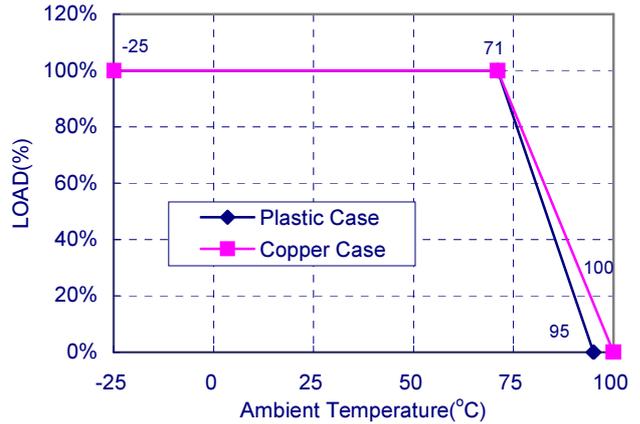
CASE MATERIAL:

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

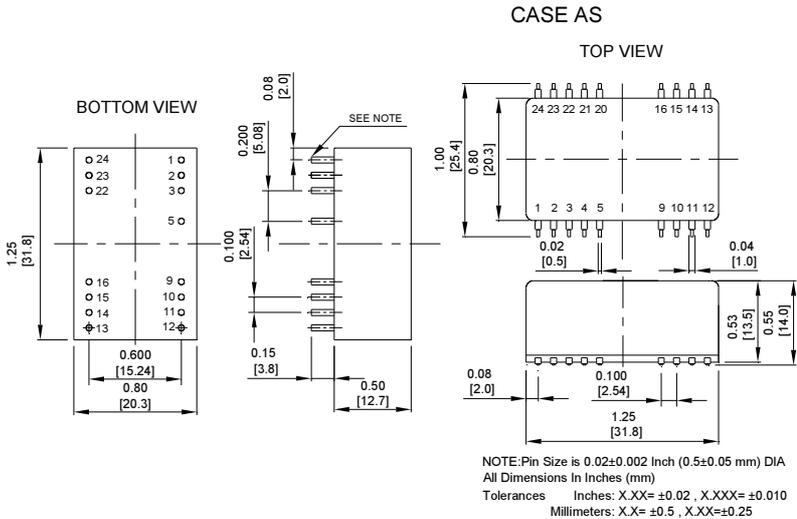
NOTE:

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 "T" to the model number with remote on/off for "H"/"HM" versions only.
6. Logic Compatibility CMOS or Open Collector TTL, ref. to -Vin
 Module on >5.5VDC or open circuit
 Module off 0 to <1.8Vdc.
 Shutdown idle 10mA
 Control common referenced to input minus
7. Suffix "S" to the model number with SMD packages.
8. 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



Case A Dimensions:



| PIN CONNECTION | | | | | | | | | |
|----------------|---------------|-----|-------------|-----|---------------|----------------------|----------------------|----------------------|----------------------|
| Pin | 500 VDC | | | | 1.5K & 3K VDC | | | | |
| | Single Output | | Dual Output | | Single Output | | Dual Output | | |
| | DIP | SMD | DIP | SMD | Pin | 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 | NP | NC | NP | NC |
| 4 | NP | NC | NP | NC | 5 | NP/ Remote On/Off | NC/ Remote On/Off | NP/ Remote On/Off | NC/ Remote On/Off |
| 5 | NP | NC | NP | NC | 9 | NC | | Common | |
| 9 | NP | NC | NP | NC | 10,15 | NC | | NC | |
| 10,15 | -V Output | | Common | | 11 | NC | | -V Output | |
| 11,14 | +V Output | | +V Output | | 12,13 | NP | NC | NP | NC |
| 12,13 | -V Input | | -V Input | | 14 | +V Output | | +V Output | |
| 16 | NP | NC | NP | NC | 16 | -V Output | | Common | |
| 20 | NP | NC | NP | NC | 20,21 | NP | NC | NP | NC |
| 21 | NP | NC | NP | NC | 22,23 | +V Input | | +V Input | |

* NC-NO CONNECTION WITH PIN
 * NP-NO PIN
 * Remote On/Off (Option)