



# 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 EN55022 Class B, Conducted
- \* Remote ON/OFF (Option)



| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT |           | % EFF. | 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.Nominal Input voltage 12, 24 or 48 VDC

# 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:

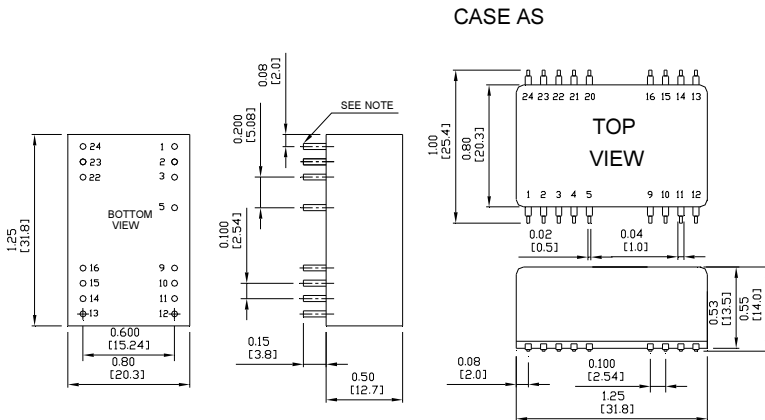
|                                     |   |
|-------------------------------------|---|
| Voltage Accuracy                    | ±2.0% max.  |
| Voltage Balance (Dual)              | ±1.0% max.  |
| Temperature Coefficient             | ±0.05%/°C   |
| Ripple & Noise, 20MHz BW            | 3.3V/5V ..... 100mV pk-pk max.<br>12V/15V ..... 1% pk-pk max. |
| Short Circuit Protection            | Continuous  |
| Line Regulation (note1) Single/Dual | ±0.5% max.  |
| Load Regulation (note2) Single      | ±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 note8) | 95°C max.  |
| (Copper case note8)                   | 100°C max.   |
| Cooling                               | Natural Convection   |
| Storage Temperature Range             | -40°C to +100°C  |
| EMI/RFI                               | Conductive EMI Meet EN55022 Class B  |
| Dimensions                            | DIP ..... 1.25x0.80x0.50 inches(31.8x20.3x12.7 mm)<br>SMD ..... 1.25x0.80x0.55 inches(31.8x20.3x14.0 mm) |
| Weight                                | 15g  |

## 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



## ISOLATION VOLTAGE:

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

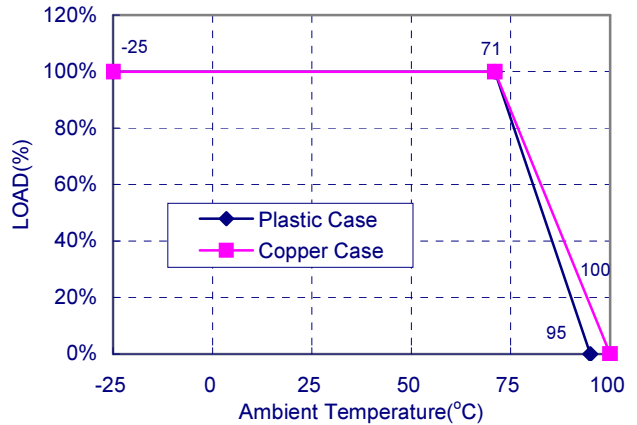
## CASE MATERIAL:

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

## NOTE:

- Measured from high line to low line.
- Measured from full load to 10% load.
- Measured from full load to 1/4 load.
- Non-conductive black plastic only.
- Suffix "T" to the model number with remote on/off for "H"/"HM" versions only.
- Logic Compatibility .... CMOS or Open Collector TTL, ref. to -Vin  
 Module on ..... >5.5VDC or open circuit  
 Module off ..... <1.8Vdc.  
 Shutdown Idle ..... 10mA  
 Control Common ..... referenced to input minus
- Suffix "S" to the model number with SMD packages.
- 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 |               |     |             |     |               |                      |                      |                      |                      |
|----------------|---------------|-----|-------------|-----|---------------|----------------------|----------------------|----------------------|----------------------|
| Pin            | 500 VDC       |     |             |     | 1.5K & 3K VDC |                      |                      |                      |                      |
|                | 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             | NP                   | NC                   | NP                   | NC                   |
| 4              | NP            | NC  | NP          | NC  | 5             | NP/<br>Remote On/Off | NC/<br>Remote On/Off | NP/<br>Remote On/Off | NC/<br>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)

## Данный компонент на территории Российской Федерации

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<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

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Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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