



# EC1TAN SERIES

## 1WATT, UNREGULATED OUTPUT

### DC-DC CONVERTERS



## FEATURES

- \* Industry Standard SIP Packages
- \* Efficiency up to 82%
- \* 1000VDC Isolation
- \* Low Cost
- \* Unregulated Outputs
- \* Low Ripple and Noise
- \* No Tantalum Capacitors inside



| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT |           | % EFF. | CAPACITOR LOAD MAX. |
|--------------|---------------|----------------|----------------|---------------|-----------|--------|---------------------|
|              |               |                |                | NO LOAD       | FULL LOAD |        |                     |
| EC1TA01N     | 5 VDC         | 5 VDC          | 200 mA         | 40 mA         | 253 mA    | 79     | 220uF               |
| EC1TA02N     | 5 VDC         | 12 VDC         | 84 mA          | 40 mA         | 255 mA    | 79     | 220uF               |
| EC1TA03N     | 5 VDC         | 15 VDC         | 67 mA          | 40 mA         | 251 mA    | 80     | 220uF               |
| EC1TA11N     | 12 VDC        | 5 VDC          | 200 mA         | 15 mA         | 103 mA    | 81     | 220uF               |
| EC1TA12N     | 12 VDC        | 12 VDC         | 84 mA          | 15 mA         | 103 mA    | 81     | 220uF               |
| EC1TA13N     | 12 VDC        | 15 VDC         | 67 mA          | 15 mA         | 102 mA    | 82     | 220uF               |
| EC1TA21N     | 24 VDC        | 5 VDC          | 200 mA         | 7 mA          | 52 mA     | 80     | 220uF               |
| EC1TA22N     | 24 VDC        | 12 VDC         | 84 mA          | 7 mA          | 52 mA     | 80     | 220uF               |
| EC1TA23N     | 24 VDC        | 15 VDC         | 67 mA          | 7 mA          | 52 mA     | 81     | 220uF               |

NOTE: 1. Nominal Input Voltage 5, 12 or 24VDC

## SPECIFICATIONS

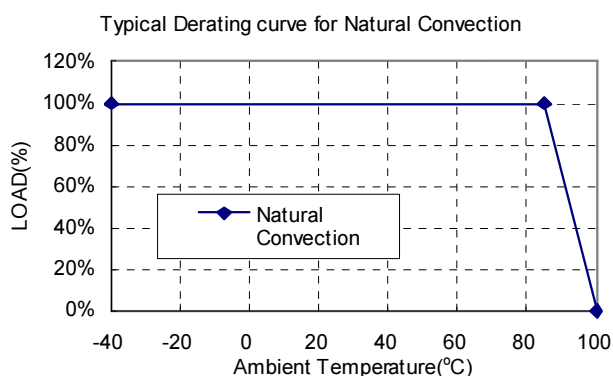
All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

### INPUT SPECIFICATIONS :

|                                        |                      |
|----------------------------------------|----------------------|
| Input Voltage Range .....              | ±10%                 |
| Input Surge Voltage (100ms max.) ..... | 5V ..... 9Vdc max.   |
| .....                                  | 12V ..... 18Vdc max. |
| .....                                  | 24V ..... 30Vdc max. |
| Input Filter .....                     | Capacitive           |

### OUTPUT SPECIFICATIONS:

|                                  |                      |
|----------------------------------|----------------------|
| Voltage Accuracy .....           | ±3.0% max.           |
| Ripple and Noise, 20MHz BW ..... | 100mV pk-pk max.     |
| Temperature Coefficient .....    | ±0.05%/°C max.       |
| Short Circuit Protection .....   | Momentary 1sec. max. |
| Line Regulation (note1) .....    | ±1.2% max.           |
| Load Regulation (note2) .....    | ±10% max.            |



### GENERAL SPECIFICATIONS :

|                             |                              |
|-----------------------------|------------------------------|
| Efficiency .....            | See Table                    |
| Isolation Voltage .....     | 1000 VDC min.                |
| Isolation Resistance .....  | 10 <sup>9</sup> ohm min.     |
| Isolation Capacitance ..... | 10pF typ.                    |
| Switching Frequency .....   | 5&12V Input ..... 90KHz typ. |
| .....                       | 24V Input ..... 80KHz typ.   |

|                                           |                                     |
|-------------------------------------------|-------------------------------------|
| Operating Ambient Temperature Range ..... | -40°C to +85°C                      |
| De-rating, Above 85°C .....               | Linearly to Zero power at 100°C     |
| Case temperature (note4) .....            | +100°C max.                         |
| Cooling .....                             | Natural Convection                  |
| Storage Temperature Range .....           | -55°C to +125°C                     |
| Humidity .....                            | 95% RH max. Non condensing          |
| MTBF .....                                | MIL-STD-217F, GB ..... 1.7Mhrs min. |

#### Dimensions:

|                     |                                         |
|---------------------|-----------------------------------------|
| 5&12V input .....   | 0.46x0.24x0.40 inches(11.6x6.0x10.2 mm) |
| 24V input .....     | 0.46x0.30x0.40 inches(11.6x7.5x10.2 mm) |
| Case Material ..... | Non-conductive black plastic            |
| Weight .....        | 5&12V Input ..... 1.3g                  |
| .....               | 24V Input ..... 1.7g                    |

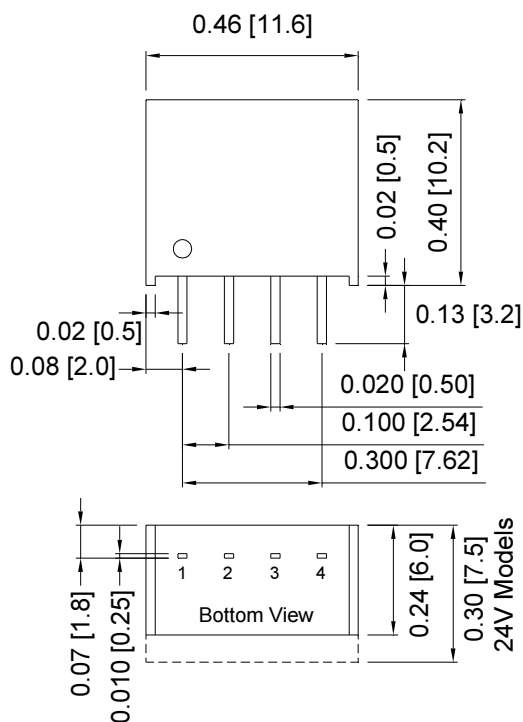
### NOTE :

1. Line regulation is per 1.0% change in input voltage.
2. Load regulation is for load change from 100% to 20%.
3. The output noise is measured with 0.33uF ceramic capacitor.
4. Maximum case temperature under any operating condition should not be exceeded 100°C.
5. The EC1TA2XN input terminal need to parallel with 4.7uF ceramic capacitor.

### CASE SIP-4:

All Dimensions In Inches (mm)

| Tolerances | Inches | Millimeters |
|------------|--------|-------------|
|            | ±0.01  | ±0.25       |
| Pin        | ±0.002 | ±0.05       |



| PIN CONNECTION |        |
|----------------|--------|
| Pin            | Single |
| 1              | -Vin   |
| 2              | +Vin   |
| 3              | -Vout  |
| 4              | +Vout  |

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