# EC2SAN SERIES

## 2WATT, UNREGULATED OUTPUT DC-DC CONVERTERS

## FEATURE

* Industry Standard SIP Packages
* Efficiency up to 86%
* 1000VDC Isolation
* Low Cost
* Unregulated Outputs
* Industry Standard Pinout
* Without Tantalum Capacitors inside

| MODEL NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT | | % | CASE |
|---|---|---|---|---|---|---|---|
| | | | | NO LOAD | FULL LOAD | EFF. | |
| EC2SA01N | 5 VDC | 5 VDC | 400 mA | 60 mA | 488mA | 82 | SIP-7 |
| EC2SA02N | 5 VDC | 12 VDC | 167 mA | 60 mA | 466mA | 86 | SIP-7 |
| EC2SA03N | 5 VDC | 15 VDC | 134 mA | 60 mA | 473mA | 85 | SIP-7 |
| EC2SA04N | 5 VDC | ±12 VDC | ±83 mA | 60 mA | 463mA | 86 | SIP-7 |
| EC2SA05N | 5 VDC | ±15 VDC | ±67 mA | 60 mA | 467mA | 86 | SIP-7 |
| EC2SA06N | 5 VDC | ±5 VDC | ±200 mA | 60 mA | 482mA | 83 | SIP-7 |
| EC2SA11N | 12 VDC | 5 VDC | 400 mA | 40 mA | 203mA | 82 | SIP-7 |
| EC2SA12N | 12 VDC | 12 VDC | 167 mA | 40 mA | 201mA | 83 | SIP-7 |
| EC2SA13N | 12 VDC | 15 VDC | 134 mA | 40 mA | 199mA | 84 | SIP-7 |
| EC2SA14N | 12 VDC | ±12 VDC | ±83 mA | 40 mA | 202mA | 82 | SIP-7 |
| EC2SA15N | 12 VDC | ±15 VDC | ±67 mA | 40 mA | 199mA | 84 | SIP-7 |
| EC2SA16N | 12 VDC | ±5 VDC | ±200 mA | 40 mA | 203mA | 82 | SIP-7 |
| EC2SA21N | 24 VDC | 5 VDC | 400 mA | 20 mA | 105mA | 79 | SIP-7 |
| EC2SA22N | 24 VDC | 12 VDC | 167 mA | 20 mA | 103mA | 81 | SIP-7 |
| EC2SA23N | 24 VDC | 15 VDC | 134 mA | 20 mA | 102mA | 82 | SIP-7 |
| EC2SA24N | 24 VDC | ±12 VDC | ±83 mA | 20 mA | 102mA | 81 | SIP-7 |
| EC2SA25N | 24 VDC | ±15 VDC | ±67 mA | 20 mA | 102mA | 82 | SIP-7 |
| EC2SA26N | 24 VDC | ±5 VDC | ±200 mA | 20 mA | 105mA | 79 | SIP-7 |

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

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS :

Input Voltage Range.....5V±10%
12V±10%
24V±10%
Input Filter .....Capacitive

## OUTPUT SPECIFICATIONS :

Voltage Accuracy.....±3.0% max.
Voltage Balance(Dual) ..... ±1.0% max.
Ripple and Noise, 20MHz BW.....150mV p-p max.
Single output, 5V.....100mVp-p max.
Temperature Coefficient.....±0.05%/C max.
Short Circuit Protection.....Momentary 1sec. max.
Line Regulation, Note1.....±1.2% max.
Load Regulation, Note2.....±10% max.

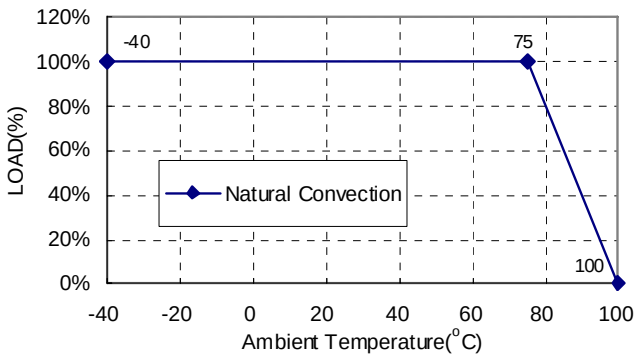
## GENERAL SPECIFICATIONS :

Efficiency.....See Table
Isolation Voltage.....1000 VDC min.
Isolation Resistance .....10^9 Ohms min.
Switching Frequency ..... 80KHz typ.
Operating Ambient Temperature Range..... -40℃ to +85℃
De-rating, Above 75℃ ..... Linearly to Zero power at 100℃
Case temperature (Note4) ..... +100℃ max.
Cooling ..... Natural Convection
Storage Temperature Range ..... -55℃ to +125℃
Dimensions .....0.77 x 0.28 x 0.40inches(19.6x7.2 x 10.2mm)
Case Material.....Non-conductive black plastic
Weight.....2.7g

## 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℃.
5. The EC2SA2XN Input Terminal Need to Parallel With 10uF Ceramic Capacitor

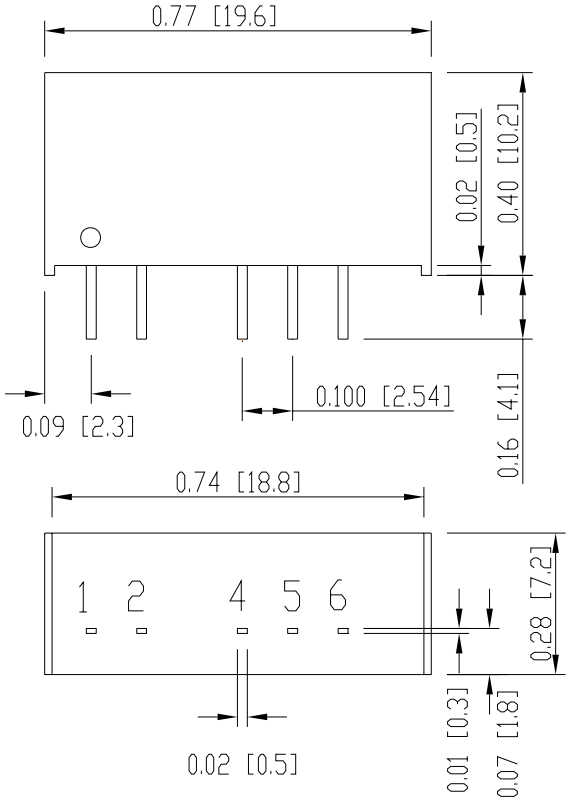
Typical Derating curve for Natural Convection




## Dimensions:

## CASE SIP-7

SIP PACKAGES




All Dimensions In Inches(mm)

| Tolerance | Inches | Millimeters |
|---|---|---|
| | X.XX±0.01 | X.X±0.25 |
| | X.XXX±0.005 | X.XX±0.13 |
| Pin | ±0.002 | ±0.05 |

| PIN CONNECTION | | |
|---|---|---|
| Pin | Single Output | Dual Output |
| 1 | +Vin | +Vin |
| 2 | -Vin | -Vin |
| 4 | -Vout | -Vout |
| 5 | No Pin | Common |
| 6 | +Vout | +Vout |

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Cincon:

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