



## FEATURES

- \* 3W Isolated Output
- \* Compact SIP-8 Package
- \* Efficiency to 85%
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Remote On/Off Control
- \* 1500VDC Isolation
- \* Continuous Short Circuit Protection
- \* Input Under Voltage Protection
- \* No Tantalum Capacitor Inside
- \* CE Mark Meets 2004/108/EC
- \* Safety Meets UL60950-1, EN60950-1, and IEC60950-1



| MODEL NUMBER  | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT |         | INPUT CURRENT |           | % EFF. | CAPACITOR LOAD MAX. |
|---------------|---------------|----------------|----------------|---------|---------------|-----------|--------|---------------------|
|               |               |                | MIN.           | MAX.    | NO LOAD       | FULL LOAD |        |                     |
| EC3SAW-24S33P | 9-36 VDC      | 3.3 VDC        | 0 mA           | 700 mA  | 4 mA          | 122 mA    | 79     | 1800uF              |
| EC3SAW-24S05P | 9-36 VDC      | 5 VDC          | 0 mA           | 600 mA  | 4 mA          | 154 mA    | 81     | 1000uF              |
| EC3SAW-24S12P | 9-36 VDC      | 12 VDC         | 0 mA           | 250 mA  | 8 mA          | 150 mA    | 84     | 220uF               |
| EC3SAW-24S15P | 9-36 VDC      | 15 VDC         | 0 mA           | 200 mA  | 12 mA         | 150 mA    | 84     | 120uF               |
| EC3SAW-24D05P | 9-36 VDC      | ±5 VDC         | 0 mA           | ±300 mA | 8 mA          | 154 mA    | 81     | 470uF               |
| EC3SAW-24D12P | 9-36 VDC      | ±12 VDC        | 0 mA           | ±125 mA | 12 mA         | 150 mA    | 84     | 100uF               |
| EC3SAW-24D15P | 9-36 VDC      | ±15 VDC        | 0 mA           | ±100 mA | 12 mA         | 151 mA    | 83     | 47uF                |
| EC3SAW-48S33P | 18-75 VDC     | 3.3 VDC        | 0 mA           | 700 mA  | 3 mA          | 61 mA     | 79     | 1800uF              |
| EC3SAW-48S05P | 18-75 VDC     | 5 VDC          | 0 mA           | 600 mA  | 3 mA          | 76 mA     | 82     | 1000uF              |
| EC3SAW-48S12P | 18-75 VDC     | 12 VDC         | 0 mA           | 250 mA  | 5 mA          | 74 mA     | 85     | 220uF               |
| EC3SAW-48S15P | 18-75 VDC     | 15 VDC         | 0 mA           | 200 mA  | 5 mA          | 75 mA     | 84     | 120uF               |
| EC3SAW-48D05P | 18-75 VDC     | ±5 VDC         | 0 mA           | ±300 mA | 5 mA          | 76 mA     | 82     | 470uF               |
| EC3SAW-48D12P | 18-75 VDC     | ±12 VDC        | 0 mA           | ±125 mA | 10 mA         | 75 mA     | 84     | 100uF               |
| EC3SAW-48D15P | 18-75 VDC     | ±15 VDC        | 0 mA           | ±100 mA | 10 mA         | 75 mA     | 83     | 47uF                |

NOTE: 1. Nominal Input Voltage 24 or 48VDC

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

|                                  |       |             |
|----------------------------------|-------|-------------|
| Input Voltage Range              | 24VDC | 9-36VDC     |
|                                  | 48VDC | 18-75VDC    |
| Input Surge Voltage (100ms max.) | 24VDC | 50VDC max.  |
|                                  | 48VDC | 100VDC max. |

### Under Voltage Protection:

|                |               |
|----------------|---------------|
| 24Vin Power Up | 7.5 VDC max.  |
| Power Down     | 6 VDC min.    |
| 48Vin Power Up | 15.5 VDC max. |
| Power Down     | 12 VDC min.   |

Input Filter ..... Capacitive

### Remote On/Off Control: (Referenced to -Vin)

|                                 |              |
|---------------------------------|--------------|
| Module On                       | Open Circuit |
| Module Off                      | < 1.2VDC     |
| Module Off (Input Idle Current) | 1mA max.     |

## OUTPUT SPECIFICATIONS:

|                                                                |            |
|----------------------------------------------------------------|------------|
| Voltage Accuracy                                               | ±1.5% max. |
| Voltage Balance (Dual)                                         | ±1.0% max. |
| Cross Regulation (Dual) (note4) ... Asymmetrical Load 25%/100% | ±5.0% max. |

### Transient Response: 25% Step Load Change

|                          |                  |
|--------------------------|------------------|
| Error Band               | ±6% Vout nominal |
| Recovery Time            | < 500us          |
| Ripple & Noise, 20MHz BW | 50mV pk-pk max.  |

Temperature Coefficient..... ±0.03%/°C

Line Regulation (note1) ..... ±0.5% max.

|                         |        |            |
|-------------------------|--------|------------|
| Load Regulation (note2) | Single | ±0.5% max. |
|                         | Dual   | ±1.0% max. |

Output Short Circuit Protection ..... Continuous

Start Up Time ..... 5ms max.

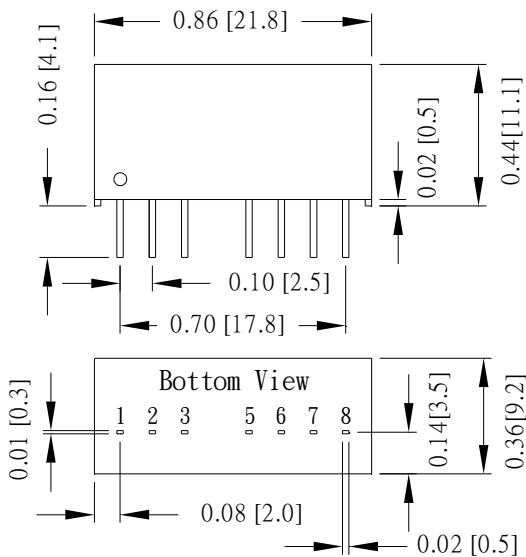
## CASE SIP-8:

All Dimensions In Inches(mm)

Tolerances : Inches millimeters

X.XX±0.02 X.X±0.5

Pin ±0.002 ±0.05



| PIN CONNECTION |        |        |
|----------------|--------|--------|
| Pin            | Single | Dual   |
| 1              | -Vin   | -Vin   |
| 2              | +Vin   | +Vin   |
| 3              | ON/OFF | ON/OFF |
| 5              | NC     | NC     |
| 6              | +Vo    | +Vo    |
| 7              | -Vo    | Common |
| 8              | NC     | -Vo    |

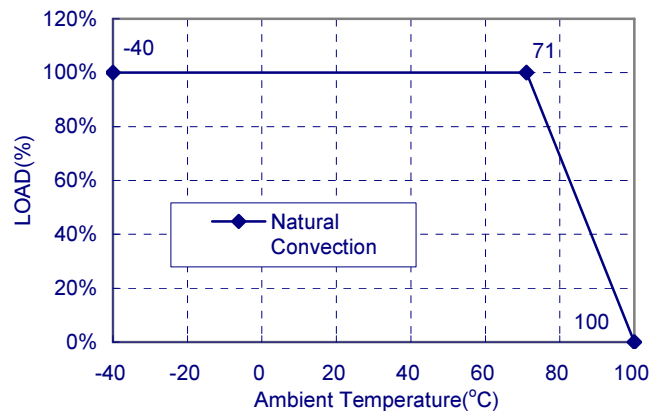
## GENERAL SPECIFICATIONS:

|                                                       |                                                        |
|-------------------------------------------------------|--------------------------------------------------------|
| Efficiency                                            | See Table                                              |
| Isolation Voltage                                     | 1500VDC min.                                           |
| Isolation Resistance                                  | 10 <sup>9</sup> ohm min.                               |
| Isolation Capacitance                                 | 500pF typ.                                             |
| Switching Frequency                                   | 100KHz min.                                            |
| Operating Ambient Temperature                         | -40°C to +85°C                                         |
| De-rating, Above 71°C                                 | Linearly to Zero Power at 100°C                        |
| Case Temperature (note3)                              | 100°C max.                                             |
| Cooling                                               | Natural Convection                                     |
| Storage Temperature                                   | -55°C to +125°C                                        |
| Humidity                                              | 95% RH max. Non-Condensing                             |
| MTBF ... MIL-STD-217F, GB, 25°C, Full Load ... Single | 2800Khrs typ.                                          |
|                                                       | Dual ... 2100Khrs typ.                                 |
| EMI                                                   | Conductive EMI Meets EN55022 Class A & Class B (note5) |
| Dimensions                                            | 0.86x0.36x0.44 inches(21.8x9.2x11.1 mm)                |
| Case Material                                         | Non-Conductive Black Plastic                           |
| Weight                                                | 4.8g                                                   |

## NOTE:

1. Measured from high line to low line.
2. Measured from full load to 10% load.
3. Maximum case temperature under any operating condition should not be exceeded 100°C.
4. For asymmetric loading both channels must be at 25% load or more.
5. The EC3SAW series meet EN55022 Class A & Class B with external C-L filter before the input pins to the converter. (see application note)

Typical Derating curve for Natural Convection



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