

# EC4SAW SERIES

## 5-6 WATT WIDE INPUT DC-DC CONVERTERS



### FEATURE

- \* 5-6W Isolated Output
- \* Compact SIP-8 Package
- \* Efficiency up to 89%
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Remote On/Off Control
- \* 1500VDC Isolation
- \* Continuous Short Circuit Protection
- \* Safety Meets IEC/EN/UL 62368-1



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		%EFF.		CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD	(3)	(2)	
EC4SAW-24S33N	9-36 VDC	3.3 VDC	0 mA	1500 mA	4 mA	252 mA	82	82	4700uF
EC4SAW-24S05N	9-36 VDC	5 VDC	0 mA	1200 mA	4 mA	291 mA	86	86	2200uF
EC4SAW-24S12N	9-36 VDC	12 VDC	0 mA	500 mA	5 mA	284 mA	88	88	1100uF
EC4SAW-24S15N	9-36 VDC	15 VDC	0 mA	400 mA	5 mA	284 mA	89	88	470uF
EC4SAW-24D05N	9-36 VDC	±5 VDC	0 mA	±600 mA	4 mA	291 mA	86	86	1400uF
EC4SAW-24D12N	9-36 VDC	±12 VDC	0 mA	±250 mA	6 mA	284 mA	88	88	660uF
EC4SAW-24D15N	9-36 VDC	±15 VDC	0 mA	±200 mA	6 mA	284 mA	88	88	220uF
EC4SAW-48S33N	18-75 VDC	3.3 VDC	0 mA	1500 mA	3 mA	126 mA	82	82	4700uF
EC4SAW-48S05N	18-75 VDC	5 VDC	0 mA	1200 mA	3 mA	147 mA	85	85	2200uF
EC4SAW-48S12N	18-75 VDC	12 VDC	0 mA	500 mA	3 mA	140 mA	88	89	1100uF
EC4SAW-48S15N	18-75 VDC	15 VDC	0 mA	400 mA	3 mA	142 mA	89	88	470uF
EC4SAW-48D05N	18-75 VDC	±5 VDC	0 mA	±600 mA	4 mA	147 mA	85	85	1400uF
EC4SAW-48D12N	18-75 VDC	±12 VDC	0 mA	±250 mA	3 mA	140 mA	88	89	660uF
EC4SAW-48D15N	18-75 VDC	±15 VDC	0 mA	±200 mA	3 mA	140 mA	88	89	220uF

#### NOTE:

1. Nominal Input Voltage 24 or 48 VDC
2. Measured at Nominal Input Voltage
3. Measured at 12VDC for 24V<sub>in</sub>, 24VDC for 48V<sub>in</sub>

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

Input Voltage Range	24V	9-36V
	48V	18-75V
Input Surge Voltage (100 ms max.)	24V	50VDC max.
	48V	100VDC max.
Input Filter	Capacitive	
Remote On/Off Control:		
Module On	Short, Open or High Impedance	
Module Off	2mA to 4mA	
Module Off (Input Idle Current)	2.5mA max.	

## OUTPUT SPECIFICATIONS:

Voltage Accuracy	±1.5% max.
Voltage Balance (Dual)	±1.0% max
Transient Response: 25% Step Load Change	
Error Band	±5% Vout Nominal, Recovery Time < 250µs
Ripple & Noise, 20MHz BW	100mV pk-pk max.
Temperature Coefficient	±0.03%/°C
Short Circuit Protection	Continuous
Line Regulation (note1)	±0.2% max.
Load Regulation (note2)	Single ±0.5% max.
	Dual ±1.0% max.
Cross Regulation (Dual note3)	Asymmetrical Load 25%/100% ±5.0% max.
Current Limit	180% typ.
Start up Time	15ms typ.

## GENERAL SPECIFICATIONS:

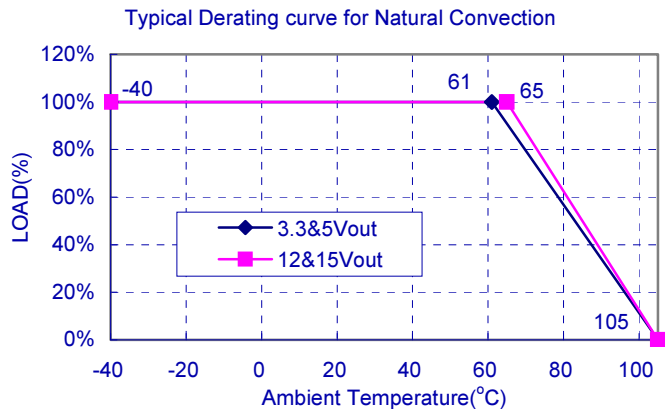
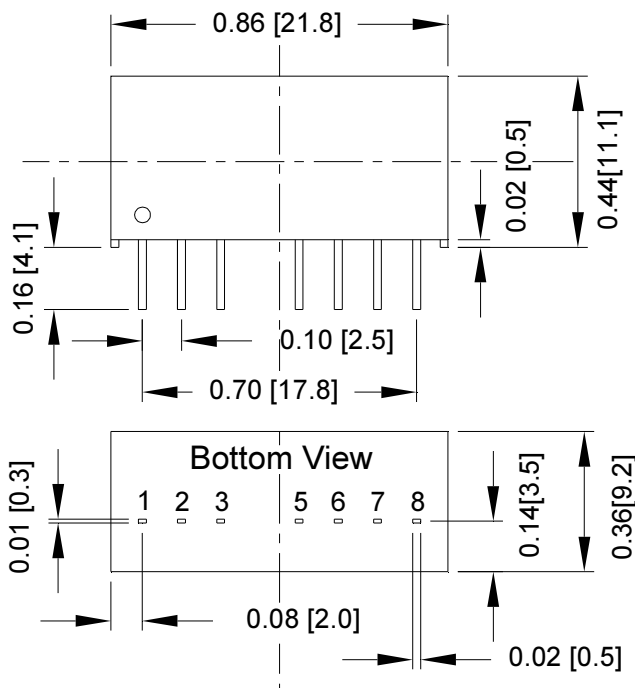
Efficiency	See Table
Isolation Voltage	1500VDC min.
Isolation Resistance	10 <sup>9</sup> ohm min.
Isolation Capacitance	50pF max.
Switching Frequency	580KHz typ.
Operating Ambient Temperature	-40°C to +85°C
De-rating, Above 61°C	3.3V/5V ... Linearly to Zero Power at 105°C
De-rating, Above 65°C	12V/15V ... Linearly to Zero Power at 105°C
Case Temperature (note4)	105°C max.
Cooling	Natural Convection
Storage Temperature	-55°C to +125°C
Humidity	95% RH max. Non Condensing
MTBF	MIL-HDBK-217F. GB. 25°C. Full Load 1850Khrs typ.
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 no load.
3. For asymmetric loading, both channels must be at 25% load or more.
4. Maximum case temperature under any operating condition should not be exceeded 105°C.

## CASE SIP-8 DIMENSIONS:

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	-V Input	-V Input
2	+V Input	+V Input
3	On/Off	On/Off
5	NC	NC
6	+V Output	+V Output
7	-V Output	Common
8	NC	-V Output