



# EC3SAW SERIES

## 3 WATT 4:1 INPUT DC-DC CONVERTERS



### 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:

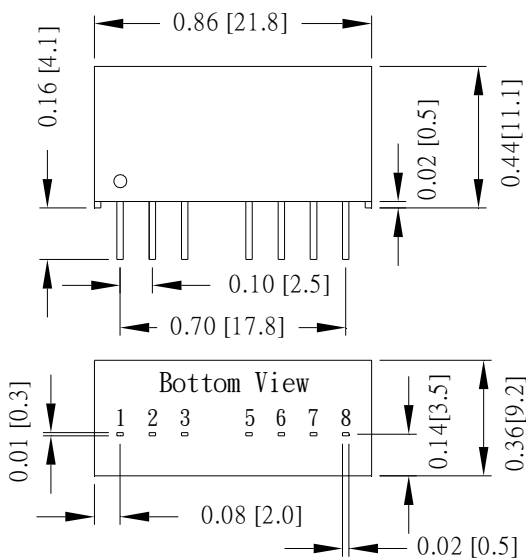
Input Voltage Range	24VDC	9-36VDC
	48VDC	18-75VDC
Input Surge Voltage (100ms max.)	24VDC	50VDC max.
	48VDC	100VDC max.
Under Voltage Protection:		
24Vin Power Up		7.5 VDC max.
Power Down		6 VDC min.
48Vin Power Up		15.5 VDC max.
Power Down		12 VDC min.
Input Filter		Capacitive
Remote On/Off Control: (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)

