



# 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
- \* Without Tantalum Capacitors inside



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	3.3VDC	0 mA	700 mA	4 mA	122 mA	79	1800uF
EC3SAW-24S05P	9-36 VDC	5VDC	0 mA	600 mA	4 mA	154 mA	81	1000uF
EC3SAW-24S12P	9-36 VDC	12VDC	0 mA	250 mA	8 mA	150 mA	84	220uF
EC3SAW-24S15P	9-36 VDC	15VDC	0 mA	200 mA	8 mA	150 mA	84	120uF
EC3SAW-24D05P	9-36 VDC	±5VDC	0 mA	±300 mA	8 mA	154 mA	81	±470uF
EC3SAW-24D12P	9-36 VDC	±12VDC	0 mA	±125 mA	12 mA	150 mA	84	±100uF
EC3SAW-24D15P	9-36 VDC	±15VDC	0 mA	±100 mA	12 mA	151 mA	83	±47uF
EC3SAW-48S33P	18-75 VDC	3.3VDC	0 mA	700 mA	3 mA	61 mA	79	1800uF
EC3SAW-48S05P	18-75 VDC	5VDC	0 mA	600 mA	3 mA	76 mA	82	1000uF
EC3SAW-48S12P	18-75 VDC	12VDC	0 mA	250 mA	5 mA	74 mA	85	220uF
EC3SAW-48S15P	18-75 VDC	15VDC	0 mA	200 mA	5 mA	75 mA	84	120uF
EC3SAW-48D05P	18-75 VDC	±5VDC	0 mA	±300 mA	5 mA	76 mA	82	±470uF
EC3SAW-48D12P	18-75 VDC	±12VDC	0 mA	±125 mA	10 mA	75 mA	84	±100uF
EC3SAW-48D15P	18-75 VDC	±15VDC	0 mA	±100 mA	10mA	75 mA	83	±47uF

NOTE: 1. Nominal Input Voltage 24 or 48 VDC

# 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 (100ms max.) .....	24V .....	50Vdc max
	48V .....	100Vdc max.
Under-Voltage Protection :		
24Vin Power up .....	7.5 VDC max	
Power down .....	6 VDC min	
48Vin Power up .....	15 VDC max	
Power down .....	12 VDC min	
Input Filter .....	Capacitive	
Remote on/off control :		
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	

## GENERAL SPECIFICATIONS:

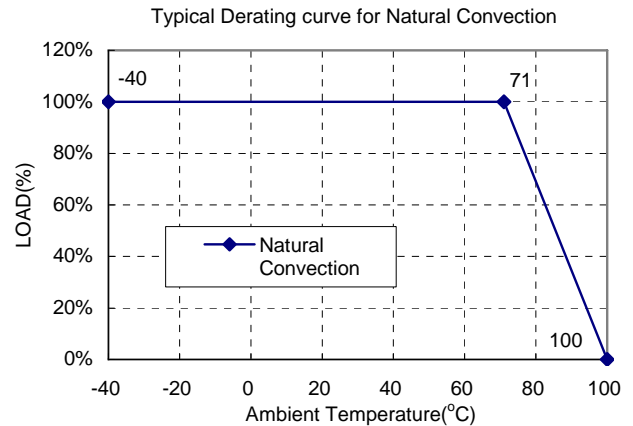
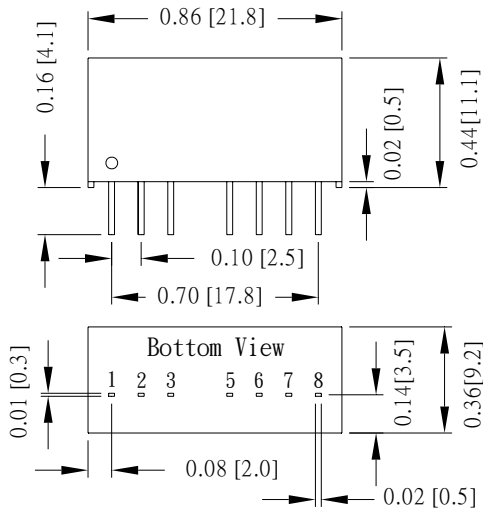
Efficiency.....	See Table	
Isolation Voltage .....	1500VDC min.	
Isolation Resistance .....	10 <sup>9</sup> ohm min.	
Isolation Capacitance.....	500pF Typ.	
Switching Frequency .....	100KHz min.	
Operating Ambient Temperature.....	-40°C to +85°C	
Power de-rating Curve.....	see Figure1	
De-rating, Above 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 .....	T.B.D. hrs
EMI .....	Conductive EMI Meet EN55022 Class A & Class B(Note5)	
Dimensions .....	.086x0.36x0.44 inches(21.80x9.20x11.10 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 )

## CASE SA 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	-Vin	-Vin
2	+Vin	+Vin
3	CTRL	CTRL
5	NC	NC
6	+Vo	+Vo
7	-Vo	Common
8	NC	-Vo