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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
- * 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		
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 0 to < 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.

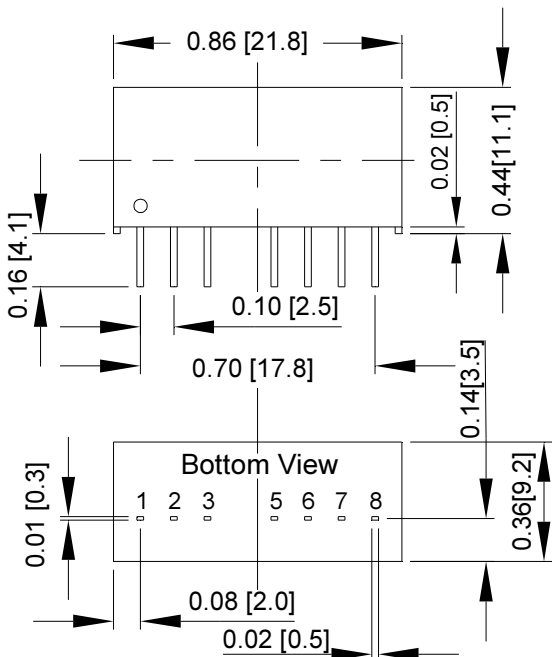
GENERAL SPECIFICATIONS:

Efficiency See Table
 Isolation Voltage 1500VDC min.
 Isolation Resistance 10⁹ 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-HDBK-217F, GB, 25°C, Full Load .. Single ... 2800Khrs typ.
 Dual 2100Khrs typ.
 EMI Conductive EMI Meets EN55032 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 EN55032 Class A & Class B with external C-L filter before the input pins to the converter. (see application note)

CASE SIP-8:



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

All Dimensions In Inches(mm)
 Tolerances : Inches millimeters
 X.XX±0.02 X.X±0.5
 Pin ±0.002 ±0.05

Typical Derating curve for Natural Convection

