



**THE DATASHEET OF
EC5SAW-48S05N**





EC5SAW SERIES

10 WATT WIDE INPUT DC-DC CONVERTERS



FEATURE

- * 4:1 Input Range
- * Regulated Outputs
- * 3000VDC/2000VAC Isolation
- * Efficiency Up to 89.5%
- * Compact SIP8 Package
- * Remote On/Off Control
- * 6.6-10W Isolated Output
- * Fixed Switching Frequency
- * No Tantalum Capacitor Inside
- * Input Under-Voltage Protection
- * Low No Load Power Consumption
- * Continuous Short Circuit Protection



MODEL NUMBER	INPUT VOLTAGE(4)	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		%EFF.		CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD	(3)	(2)	
EC5SAW-24S33N	9-36 VDC	3.3 VDC	0 mA	2000 mA	6 mA	336 mA	81	81.5	2000uF
EC5SAW-24S05N	9-36 VDC	5 VDC	0 mA	2000 mA	6 mA	490 mA	83.5	85	2000uF
EC5SAW-24S12N	9-36 VDC	12 VDC	0 mA	833 mA	6 mA	473 mA	87	89	833uF
EC5SAW-24S15N	9-36 VDC	15 VDC	0 mA	666 mA	6 mA	468 mA	88.5	89.5	666uF
EC5SAW-24D05N	9-36 VDC	±5 VDC	0 mA	±1000 mA	6 mA	490 mA	84	85	1000uF
EC5SAW-24D12N	9-36 VDC	±12 VDC	0 mA	±417 mA	7 mA	468 mA	88.5	89	417uF
EC5SAW-24D15N	9-36 VDC	±15 VDC	0 mA	±333 mA	7 mA	468 mA	88.5	89	333uF
EC5SAW-48S33N	18-75 VDC	3.3 VDC	0 mA	2000 mA	6 mA	168 mA	81	81	2000uF
EC5SAW-48S05N	18-75 VDC	5 VDC	0 mA	2000 mA	6 mA	245 mA	84	85	2000uF
EC5SAW-48S12N	18-75 VDC	12 VDC	0 mA	833 mA	6 mA	237 mA	87.5	88	833uF
EC5SAW-48S15N	18-75 VDC	15 VDC	0 mA	666 mA	6 mA	234 mA	87.5	88	666uF
EC5SAW-48D05N	18-75 VDC	±5 VDC	0 mA	±1000 mA	6 mA	245 mA	84	85	1000uF
EC5SAW-48D12N	18-75 VDC	±12 VDC	0 mA	±417 mA	6 mA	234 mA	88	88	417uF
EC5SAW-48D15N	18-75 VDC	±15 VDC	0 mA	±333 mA	6 mA	234 mA	87.5	88	333uF

NOTE:

1. Nominal Input Voltage 24 or 48 VDC
2. Measured at Nominal Input Voltage
3. Measured at 12VDC for 24Vin, 24VDC for 48Vin
4. For 3.3Vo, 5Vo & ±5Vo has Derating by Input is Required Show Fig.1

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 Open or High Impedance
 Module Off 2mA to 4mA
 Module Off (Input Idle Current) 2.5mA max.

OUTPUT SPECIFICATIONS:

Voltage Accuracy ±1.0% max.
 Voltage Balance (Dual) ±1.0% max
 Transient Response: 75%~100% Step Load Change
 Error Band ±5% Vout Nominal, Recovery Time < 250µs
 Ripple & Noise, 20MHz BW (Note 5) ... 3.3V & 5V & ±5V ... 100mV pk-pk max.
 12V/15V/±12V/±15V..... 1%Vo max.
 Temperature Coefficient ±0.02%/°C max.
 Short Circuit Protection Continuous
 Line Regulation (note1) ±0.2% max.
 Load Regulation (note2) ±1.0% max.
 Cross Regulation (Dual note3) ... Asymmetrical Load 25%/100% .. ±5.0% max.
 Current Limit 180% typ.
 Start up time 5ms typ.

GENERAL SPECIFICATIONS:

Efficiency See Table
 Isolation Voltage Input/Output 3000VDC min.
 Input/Output 2000VAC min.
 Isolation Resistance 10⁹ ohm min.
 Isolation Capacitance 50pF max.
 Switching Frequency 530KHz typ.
 Operating Ambient Temperature -40°C to +85°C
 De-rating, Above 50°C Linearly to Zero power at 105°C
 Case Temperature (note4) 105°C max.

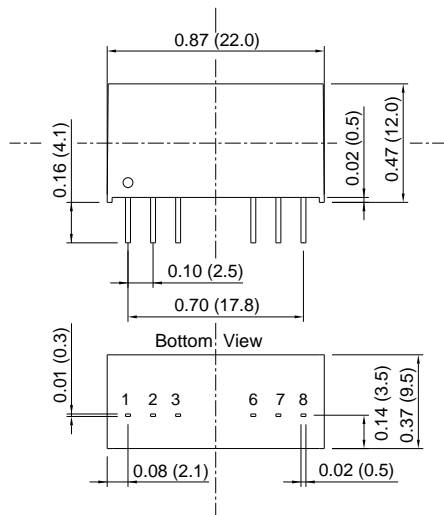
Cooling Natural Convection
 Storage Temperature -55°C to +125°C
 Humidity 95% RH max. Non condensing
 MTBF MIL-HDBK-217F, GB, 25°C, Full Load 1930Khrs typ.
 Dimensions 0.87x0.37x0.47 inches (22.0x9.5x12.0mm)
 Case Material Non-Conductive Black Plastic
 Weight 4.9g

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.
5. Output ripple and noise measured with 1µF ceramic capacitor

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

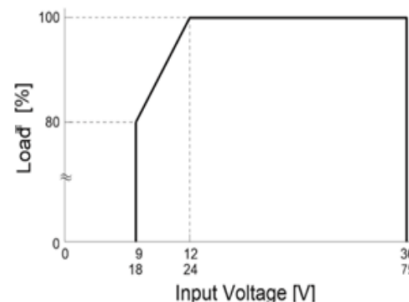


Fig1. Input Voltage Derating Curve
 Typical Derating curve for Natural Convection

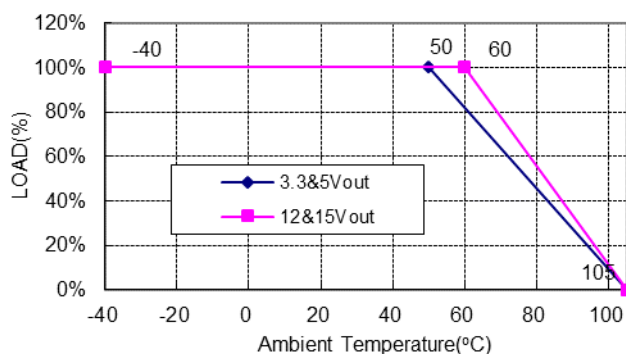




Fig2. Typical Derating Curve for Naturel Convection

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