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EC5SAW SERIES

10 WATT WIDE INPUT DC-DC CONVERTERS

CE

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℃ 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:

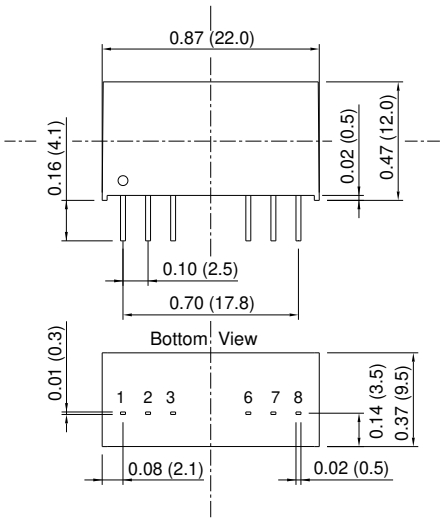
Efficiency ..... See Table
Isolation Voltage ..... Input/Output ..... 3000VDC min.
Input/Output ..... 2000VAC min.
Isolation Resistance ..... 10^9 ohm min.
Isolation Capacitance ..... 50pF max.
Switching Frequency ..... 530KHz typ.
Operating Ambient Temperature ..... -40℃ to +85℃
De-rating, Above 50℃ ..... Linearly to Zero power at 105℃
Case Temperature (note4) ..... 105℃ max.
Cooling ..... Natural Convection
Storage Temperature ..... -55℃ to +125℃
Humidity ..... 95% RH max. Non condensing
MTBF .... MIL-HDBK-217F, GB, 25℃, 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℃.
5. Output ripple and noise measured with 1uF 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

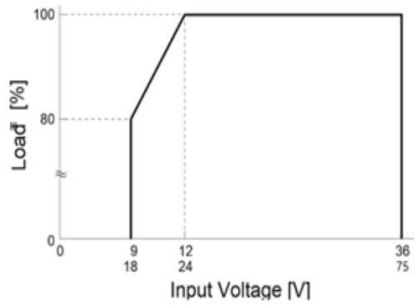


Fig1. Input Voltage Derating Curve

Typical Derating curve for Natural Convection

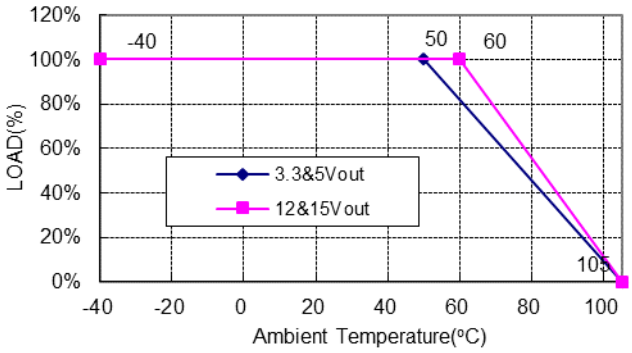


Fig2. Typical Derating Curve for Naturel Convection