

# EC3SA

S E R I E S



## 3 WATT WIDE INPUT DC-DC CONVERTERS

### Features

- 3W Isolated Output
- Compact SIP-8 Package
- Efficiency to 86%
- 2 : 1 Input Range
- Regulated Outputs
- Under Voltage Protection
- Remote On/Off Control
- 1500VDC Isolation
- Continuous Short Circuit Protection
- 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		
EC3SA-05S33N	4.5-9.0 VDC	3.3 VDC	0 mA	700 mA	60 mA	632 mA	73	700uF
EC3SA-05S05N		5 VDC	0 mA	600 mA		769 mA	78	600uF
EC3SA-05S12N		12 VDC	0 mA	250 mA		759 mA	81	250uF
EC3SA-05S15N		15 VDC	0 mA	200 mA		741 mA	81	200uF
EC3SA-05D05N		±5 VDC	±0 mA	±300 mA		769 mA	78	300uF
EC3SA-05D12N		±12 VDC	±0 mA	±125 mA		741 mA	81	125uF
EC3SA-05D15N		±15 VDC	±0 mA	±100 mA		741 mA	81	100uF
EC3SA-12S33N	9-18 VDC	3.3 VDC	0 mA	700 mA	30 mA	253 mA	76	700uF
EC3SA-12S05N		5 VDC	0 mA	600 mA		309 mA	81	600uF
EC3SA-12S12N		12 VDC	0 mA	250 mA		301 mA	83	250uF
EC3SA-12S15N		15 VDC	0 mA	200 mA		298 mA	84	200uF
EC3SA-12D05N		±5 VDC	±0 mA	±300 mA		305 mA	82	300uF
EC3SA-12D12N		±12 VDC	±0 mA	±125 mA		301 mA	83	125uF
EC3SA-12D15N		±15 VDC	±0 mA	±100 mA		298 mA	84	100uF
EC3SA-24S33N	18-36 VDC	3.3 VDC	0 mA	700 mA	18 mA	125 mA	77	700uF
EC3SA-24S05N		5 VDC	0 mA	600 mA		154 mA	81	600uF
EC3SA-24S12N		12 VDC	0 mA	250 mA		149 mA	84	250uF
EC3SA-24S15N		15 VDC	0 mA	200 mA		147 mA	85	200uF
EC3SA-24D05N		±5 VDC	±0 mA	±300 mA		156 mA	80	300uF
EC3SA-24D12N		±12 VDC	±0 mA	±125 mA		149 mA	84	125uF
EC3SA-24D15N		±15 VDC	±0 mA	±100 mA		147 mA	85	100uF
EC3SA-48S33N	36-75 VDC	3.3 VDC	0 mA	700 mA	9 mA	63 mA	77	700uF
EC3SA-48S05N		5 VDC	0 mA	600 mA		77 mA	81	600uF
EC3SA-48S12N		12 VDC	0 mA	250 mA		73 mA	86	250uF
EC3SA-48S15N		15 VDC	0 mA	200 mA		73 mA	86	200uF
EC3SA-48D05N		±5 VDC	±0 mA	±300 mA		77 mA	81	300uF
EC3SA-48D12N		±12 VDC	±0 mA	±125 mA		73 mA	86	125uF
EC3SA-48D15N		±15 VDC	±0 mA	±100 mA		73 mA	86	100uF

NOTE: 1. Nominal Input Voltage 5, 12, 24 or 48 VDC

## Specifications

### INPUT SPECIFICATIONS:

Input Voltage Range.....	5V.....	4.5-9V
	12V.....	9-18V
	24V.....	18-36V
	48V.....	36-75V
Input Surge Voltage (100ms max.).....	5V.....	15Vdc max.
	12V.....	25Vdc max.
	24V.....	50Vdc max.
	48V.....	100Vdc max.
Under Voltage Protection: (Note5)		
5Vin Power Up.....		4.2Vdc max.
Power Down.....		3Vdc min.
12Vin Power Up.....		7.3Vdc max.
Power Down.....		5.8Vdc min.
24Vin Power Up.....		15.5Vdc max.
Power Down.....		12Vdc min.
48Vin Power Up.....		31Vdc max.
Power Down.....		24Vdc min.
Input Filter.....		Capacitive
Remote on/off control: (Note6)		
Module Off (input idle current).....		1mA max.

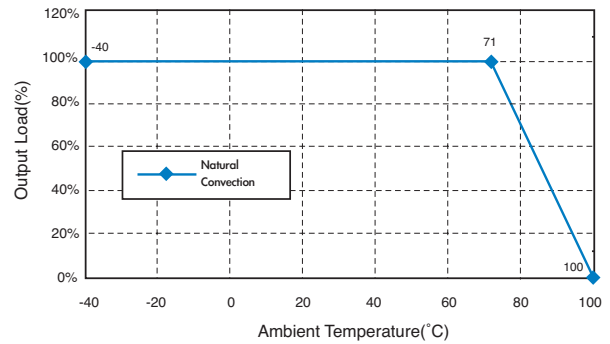
### OUTPUT SPECIFICATIONS:

Voltage Accuracy.....		±1.5% max.
Voltage Balance(Dual).....		±1.0% max.
Cross regulation(Dual).....Asymmetrical load 25%/100%.....		±5.0% max.
Transient Response: 25% Step Load Change		
Error Band.....		±6% Vout nominal
Recovery Time.....		< 500µs
Ripple & Noise, 20MHz BW.....		75mV pk-pk, max.
Temperature Coefficient.....		±0.03%/°C
Line Regulation <sup>2</sup> .....		±0.5% max.
Load Regulation <sup>3</sup> .....Single.....		±0.5% max.
	Dual.....	±1.0% max.
Output Short Circuit Protection.....		Continuous
Start up time.....		1ms typ.

### 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 <sup>4</sup> .....		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.....		2500khrs typ.
Dimensions.....		0.86x0.36x0.44 inches(21.80x9.20x11.10 mm)
Case Material.....		Non-Conductive Black Plastic
Weight.....		4.8g

## EC3SA Series Derating Curve



### NOTE:

- For asymmetric loading, Both channels must be at 25% load or more.
- Measured From High Line to Low Line.
- Measured From Full Load to 10% Load.
- Maximum case temperature under any operating condition should not be exceeded 100°C.
- Suffix "N" to the Model with Under Voltage Protection.
- Suffix "N" Models: Module On ..... < 0.8VDC or Open Circuit  
 Module Off ..... 4 to 15VDC  
 Other Models: Module On ..... < 1.2VDC or Open Circuit  
 Module Off..... 5.5 to 15VDC

### PIN CONNECTION

Pin	Single Output	Dual Output
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

## CASE SIP-8

All Dimensions In Inches(mm)		
Tolerance	Inches	Millimeters
	XXX ±0.02	X.X ±0.5
Pin	±0.002	±0.05

