



## EC3SB SERIES 15 WATT 2:1 INPUT DC-DC CONVERTERS



### FEATURES

- \* 15W Isolated Output
- \* Efficiency to 90%
- \* 2:1 Input Rang
- \* Regulated Outputs
- \* Fixed Switching Frequency
- \* Input Under Voltage Protection
- \* Over Current Protection
- \* Remote On/Off
- \* Continuous Short Circuit Protection
- \* Without Tantalum Capacitors Inside
- \* 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		
EC3SB -12S33	9-18 VDC	3.3 VDC	0 mA	4000 mA	90 mA	1280 mA	85	4000uF
EC3SB -12S05	9-18 VDC	5 VDC	0 mA	3000 mA	85 mA	1453 mA	88	3000uF
EC3SB -12S12	9-18 VDC	12 VDC	0 mA	1250 mA	70 mA	1420 mA	88	1330uF
EC3SB -12S15	9-18 VDC	15 VDC	0 mA	1000 mA	70 mA	1420 mA	88	1000uF
EC3SB-12D05	9-18 VDC	±5 VDC	0 mA	±1500 mA	45 mA	1470 mA	85	1470uF
EC3SB-12D12	9-18 VDC	±12 VDC	0 mA	±625 mA	45 mA	1436 mA	87	660uF
EC3SB-12D15	9-18 VDC	±15 VDC	0 mA	±500 mA	45 mA	1420 mA	88	550uF
EC3SB -24S33	18-36 VDC	3.3 VDC	0 mA	4000 mA	50 mA	640 mA	86	4000uF
EC3SB -24S05	18-36 VDC	5 VDC	0 mA	3000 mA	50 mA	718 mA	89	3000uF
EC3SB -24S12	18-36 VDC	12 VDC	0 mA	1250 mA	20 mA	695 mA	90	1330uF
EC3SB -24S15	18-36 VDC	15 VDC	0 mA	1000 mA	20 mA	695 mA	90	1000uF
EC3SB-24D05	18-36 VDC	±5 VDC	0 mA	±1500 mA	25 mA	726 mA	86	1470uF
EC3SB-24D12	18-36 VDC	±12 VDC	0 mA	±625 mA	25 mA	710 mA	88	660uF
EC3SB-24D15	18-36 VDC	±15 VDC	0 mA	±500 mA	25 mA	702 mA	89	550uF
EC3SB -48S33	36-75 VDC	3.3 VDC	0 mA	4000 mA	25 mA	320 mA	86	4000uF
EC3SB -48S05	36-75 VDC	5 VDC	0 mA	3000 mA	30 mA	359 mA	88	3000uF
EC3SB -48S12	36-75 VDC	12 VDC	0 mA	1250 mA	20 mA	347 mA	90	1330uF
EC3SB -48S15	36-75 VDC	15 VDC	0 mA	1000 mA	20 mA	351 mA	90	1000uF
EC3SB-48D05	36-75 VDC	±5 VDC	0 mA	±1500 mA	20 mA	363 mA	86	1470uF
EC3SB-48D12	36-75 VDC	±12 VDC	0 mA	±625 mA	20 mA	355 mA	88	660uF
EC3SB-48D15	36-75 VDC	±15 VDC	0 mA	±500 mA	20 mA	351 mA	89	550uF

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

# SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

## INPUT SPECIFICATIONS:

Input Voltage Range	12V	9 - 18V
	24V	18 - 36V
	48V	36 - 75V
Under voltage lockout	12Vin power up: 8.8V	power down: 8V
	24Vin power up: 17V	power down: 16V
	48Vin power up: 34V	power down: 32V
Input Surge Voltage (100mS max.)	EC3SB-12Sxx/12DXX	25Vdc max.
	EC3SB-24Sxx/24DXX	50Vdc max.
	EC3SB-48Sxx/48DXX	100Vdc max.
Input Filter	Standard	PI Type
	SMD	LC Type
Positive Logic Remote on/off Control:		
Logic Compatibility	CMOS or Open Collector TTL	
Module On	>+5.5V to 75VDC or Open Circuit	
Module Off	<1.2VDC	

## OUTPUT SPECIFICATIONS:

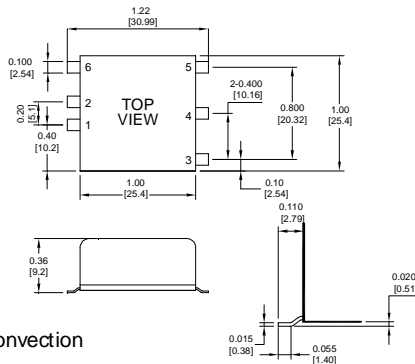
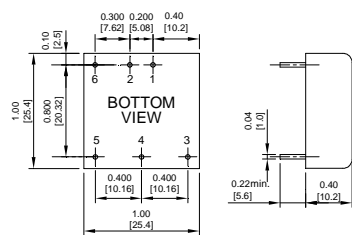
Voltage Accuracy	±1.5% max.
Voltage Balance (Dual)	±2.0% max.
Transient Response: 25% Step Load Change	<500us
Ripple and Noise, 20MHz BW (note 3)	50mV pk-pk max.
	SMD 120mV pk-pk max.
Temperature Coefficient	±0.03%/°C
Short Circuit Protection	Continuous
Line Regulation (note 1)	Single ..... DIP±0.2% max., SMD±0.3% max.
	Dual ..... ±0.5% max.
Load Regulation (note 2)	Single ..... DIP±0.2% max., SMD±0.5% max.
	Dual ..... ±1.0% max.
Cross Regulation (Dual output) Load cross variation 10%/100%	±5% max.
Over Voltage Protection	Zener or TVS Clamp
External Trim Adj. Range	±10%
Current Limit	110% - 140% Nominal Output
Start up time	20ms max.

## SIZE SB Dimensions:

NOTE: Pin Size is 0.04±0.004 Inch (1.0±0.1 mm) DIA  
 All Dimensions In Inches (mm)  
 Tolerances: Inches: X.XX= ±0.02, X.XXX= ±0.010  
 Millimeters: X.X= ±0.5, X.XX=±0.25

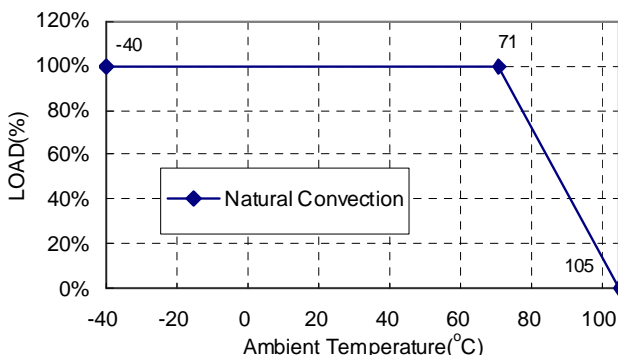
THROUGH-HOLE PACKAGE

SMD- PACKAGE



Pin	Function	
	Single	Dual
1	+Input	+Input
2	-Input	-Input
3	+V Output	+V Output
4	Trim	Common
5	-V Output	-V Output
6	Remote	Remote

Typical Derating curve for Natural Convection



## EXTERNAL OUTPUT TRIM

