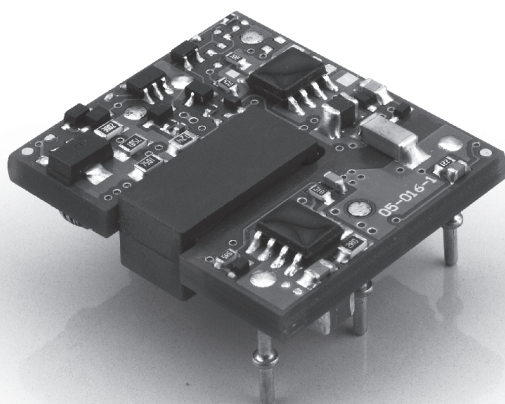


## 13.2 -15 WATT OPEN FRAME DC-DC CONVERTERS



### Features:

- 13.2-15W Isolated Output
- 1.1" x 1" Open Frame Design
- Regulated Outputs
- Efficiency to 89%
- 2250VDC Isolation
- Input Under Voltage Protection
- Over Current Protection
- Continuous Short Circuit Protection
- Remote On/Off Control

### Safety Approvals



### Electrical Characteristics:

MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		%EFF	SIZE
			MIN	MAX	NO LOAD	FULL LOAD		
EC1SB -24S33	18-36 VDC	3.3 VDC	0 mA	4000 mA	50 mA	639mA	86	1.1" x 1"
EC1SB -24S05	18-36 VDC	5 VDC	0 mA	3000 mA	50 mA	718mA	87	1.1" x 1"
EC1SB -24S12	18-36 VDC	12 VDC	0 mA	1250 mA	40 mA	718mA	87	1.1" x 1"
EC1SB -24S15	18-36 VDC	15 VDC	0 mA	1000 mA	40 mA	718mA	87	1.1" x 1"
EC1SB -48S33	36-75 VDC	3.3 VDC	0 mA	4000 mA	30 mA	320mA	86	1.1" x 1"
EC1SB -48S05	36-75 VDC	5 VDC	0 mA	3000 mA	30 mA	359mA	87	1.1" x 1"
EC1SB -48S12	36-75 VDC	12 VDC	0 mA	1250 mA	30 mA	351mA	89	1.1" x 1"
EC1SB -48S15	36-75 VDC	15 VDC	0 mA	1000 mA	30 mA	351mA	89	1.1" x 1"

NOTE: 1. Nominal Input Voltage 24 or 48VDC

## Specification

### INPUT SPECIFICATIONS:

Input Voltage Range.....	24V.....	18-36V
	48V.....	36-75V
Undervoltage lockout .....	24Vin power up.....	17V
	24Vin power down .....	16V
	48Vin power up .....	34V
	48Vin power down .....	32.5V
Input Filter .....	Capacitive Type	
Positive Logic Remote on/off Control :		
Logic Compatibility.....	CMOS or Open Collector TTL	
Module ON.....	>+5.5VDC or Open Circuit	
Module OFF.....	<1.2VDC	

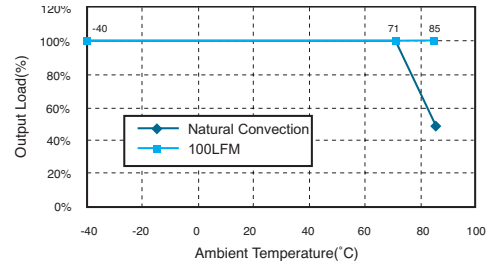
### OUTPUT SPECIFICATIONS:

Voltage Accuracy :	±1.5% max.
Transient Response :25% Step Load Change.....	<500u sec.
Ripple and Noise, 20MHz BW .....	Vo=3.3 & 5V.....75mV p-p max.
	Vo=12 & 15V.....100mV p-p max.
Temperature Coefficient.....	±0.03%/°C
Short Circuit Protection.....	Continuous
Line Regulation1 .....	±0.2% max.
Load Regulation2 .....	±0.2% max.
Over Voltage Protection.....	Zener or TVS Clamp
External Trim Adj. Range.....	±10%
Current Limit.....	110% - 140% Nominal Output

### GENERAL SPECIFICATIONS:

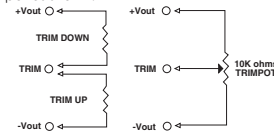
Efficiency.....	See Table
Isolation Voltage .....	2250VDC min
Isolation Resistance .....	10 <sup>7</sup> ohm min.
Switching Frequency .....	400KHz typ.
Operating Ambient Temperature Range.....	-40°C to +85°C
Derating, Above 71°C .....	Linearly to Zero Power at +100°C
Cooling.....	Natural Convection
Storage Temperature Range .....	-40°C to +125°C
Dimensions.....	1.10 x 0.96 x 0.36 inches (27.9 x 24.4 x 9.1 mm)
Structure.....	Non-Potted, Open Frame Type
Weight.....	8.8g

## EC1SB Series Derating Curve



### External Output Trimming

Output may optionally be externally trimmed (±10%) with a fixed resistor or an external trimpot as shown.



### NOTE:

1. Measured From High Line to Low Line
2. Measured From Full Load to min. Load
3. Suffix"N"to the Model Number with Negative Logic Remote ON/OFF  
Module ON.....<1.2VDC  
Module OFF.....>+5.5VDC or Open Circuit
4. Suffix"S"to the Model Number with SMD Package
5. The Output Ripple and Noise is Measured with 10uF Tantalum and 1uF Ceramic Capacitor Across Output.

### PIN CONNECTION

Pin	Function
1	+V Input
2	-V Input
3	+V Output
4	Trim
5	-V Output
6	Remote ON/OFF

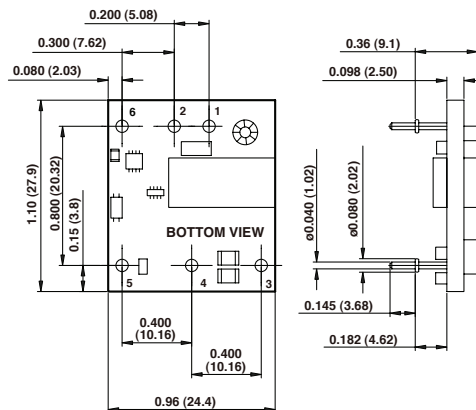
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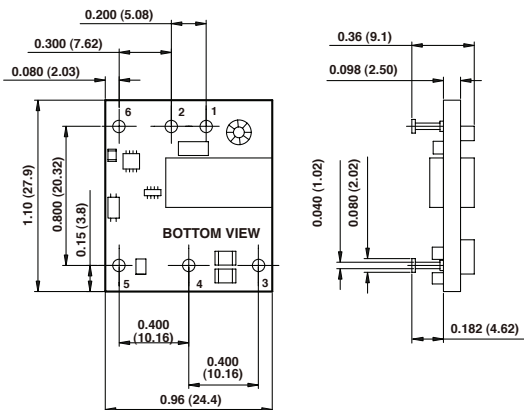
## SIZE SB

All Dimensions In Inches(mm)  
Tolerance Inches: .xx=±0.04, .xxx=±0.010  
Millimeters: .xx=±1.0, .xxx=±0.25

### THROUGH-HOLE PACKAGE



### SMD-PACKAGE



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