



# EC4BE SERIES

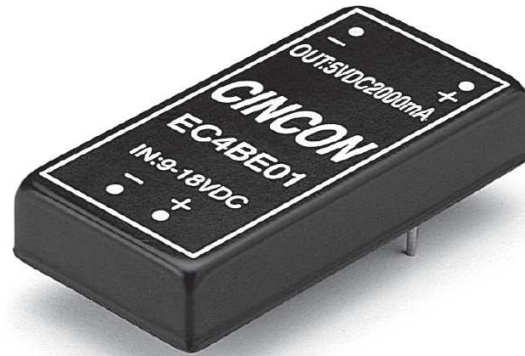
## 10 WATT 2:1 INPUT RANGE

### DC-DC CONVERTERS



## FEATURES

- \* 10W Isolated Output
- \* 2"x1" Six-Sided Shield Metal Case
- \* Efficiency to 82%
- \* 2:1 Input Range
- \* Pi Input Filter
- \* Continuous Short Circuit Protection
- \* Meets EN55032 Class A Conducted
- \* UL60950-1 Approval
- \* Safety Meets IEC/EN/UL 62368-1



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
EC4BE01	9-18 VDC	5 VDC	100 mA	2000 mA	30 mA	1100 mA	76	2000uF
EC4BE02	9-18 VDC	12 VDC	45 mA	830 mA	30 mA	1065 mA	78	830uF
EC4BE03	9-18 VDC	15 VDC	35 mA	666 mA	30 mA	1065 mA	78	666uF
EC4BE04	9-18 VDC	±12 VDC	±25 mA	±415 mA	40 mA	1065 mA	78	415uF
EC4BE05	9-18 VDC	±15 VDC	±20 mA	±333 mA	40 mA	1065 mA	78	333uF
EC4BE06	9-18 VDC	±5 VDC	±50 mA	±1000 mA	40 mA	1065 mA	78	1000uF
EC4BE11	18-36 VDC	5 VDC	100 mA	2000 mA	20 mA	535 mA	78	2000uF
EC4BE12	18-36 VDC	12 VDC	45 mA	830 mA	20 mA	520 mA	80	830uF
EC4BE13	18-36 VDC	15 VDC	35 mA	666 mA	20 mA	520 mA	80	666uF
EC4BE14	18-36 VDC	±12 VDC	±25 mA	±415 mA	20 mA	520 mA	80	415uF
EC4BE15	18-36 VDC	±15 VDC	±20 mA	±333 mA	20 mA	520 mA	80	333uF
EC4BE16	18-36 VDC	±5 VDC	±50 mA	±1000 mA	20 mA	520 mA	80	1000uF
EC4BE21	36-72 VDC	5 VDC	100 mA	2000 mA	10 mA	260 mA	80	2000uF
EC4BE22	36-72 VDC	12 VDC	45 mA	830 mA	10 mA	254 mA	82	830uF
EC4BE23	36-72 VDC	15 VDC	35 mA	666 mA	10 mA	254 mA	82	666uF
EC4BE24	36-72 VDC	±12 VDC	±25 mA	±415 mA	10 mA	254 mA	82	415uF
EC4BE25	36-72 VDC	±15 VDC	±20 mA	±333 mA	10 mA	254 mA	82	333uF
EC4BE26	36-72 VDC	±5 VDC	±50 mA	±1000 mA	10 mA	254 mA	82	1000uF

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

# 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	36-72V
Input Surge Voltage (100ms max.)	12V	25Vdc max.
	24V	50Vdc max.
	48V	100Vdc max.
Input Filter	Pi Type	

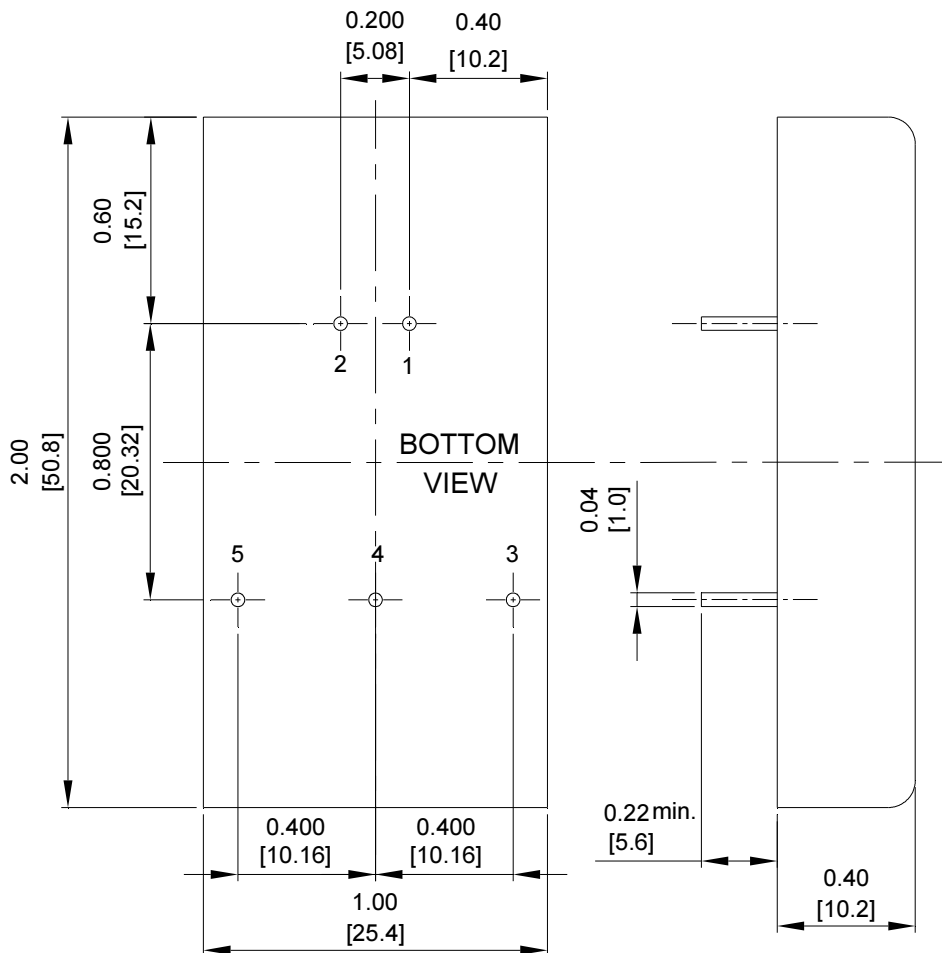
## OUTPUT SPECIFICATIONS:

Voltage Accuracy	±1.0% max.
Voltage Balance (Dual)	±1.0% max.
Transient Response	
Single 25% Step Load Change	<500us
Dual FL-1/2L±1% Error Band	<500us
Ripple and Noise, 20MHz BW	100mV pk-pk max.
Temperature Coefficient	±0.02%/°C max.
Short Circuit Protection	Continuous
Line Regulation (note1)	±0.2% max.
Load Regulation (note2)	±1.0% max.
Start up Time	12Vin, 24Vin ..... 60ms typ.
	48Vin ..... 28ms typ.

## NOTE:

1. Measured from high line to low line.
2. Measured from full load to 1/4 load.
3. A Minimum load on the output is necessary to maintain regulation.
4. Maximum case temperature under any operating condition should not be exceeded 100°C.

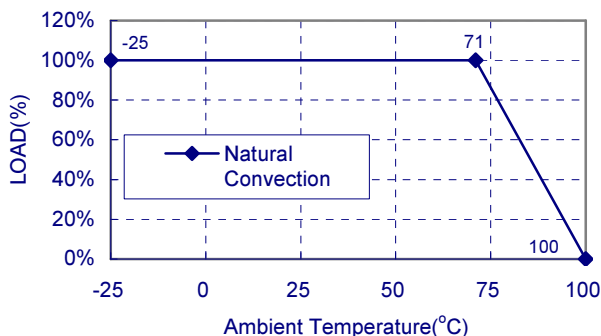
## Case B Dimensions:



## GENERAL SPECIFICATIONS:

Efficiency	See Table
Isolation Voltage	500 VDC min
Isolation Resistance	10 <sup>9</sup> Ohm min.
Isolation Capacitance	2500pF typ.
Switching Frequency	200KHz min.
Operating Ambient Temperature Range	-25°C to +71°C
De-rating, Above 71°C	Linearly to Zero Power at 100°C
Case Temperature (note4)	100°C max.
Cooling	Natural Convection
Storage Temperature Range	-40°C to +100°C
Humidity	95% RH max. Non Condensing
MTBF	MIL-HDBK-217F, GB, 25°C, Full Load ..... 1400Khrs typ.
EMI/RFI	Six sided Continuous Shield
Dimensions	2.00x1.00x0.40 inches (50.8x25.4x10.2 mm)
Case Material	Black Coated Copper with Non-Conductive Base
Case Weight	33g

Typical Derating curve for Natural Convection



PIN CONNECTION	
Pin	Function
1	+Input
2	-Input
3	+Output
4	Common/NP
5	-Output

\*NP-NO PIN ON SINGLE OUTPUT

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

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