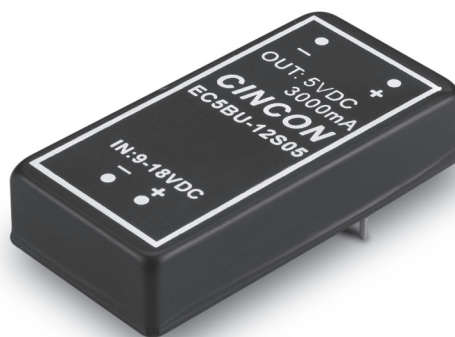


# EC5BU

S E R I E S

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



### Features

- 15W Isolated Output
- Efficiency to 90%
- 2:1 Input Range
- Regulated Outputs
- Fixed Switching Frequency
- Input Under Voltage Protection
- Over Current Protection
- Conductive EMI Meets EN55022 Class A
- 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		
EC5BU-12S33	9-18 VDC	3.3 VDC	0 mA	4000 mA	90 mA	1280 mA	85	4000uF
EC5BU-12S05		5 VDC	0 mA	3000 mA	85 mA	1453 mA	88	3000uF
EC5BU-12S12		12 VDC	0 mA	1250 mA	70 mA	1420 mA	88	1330uF
EC5BU-12S15		15 VDC	0 mA	1000 mA	70 mA	1420 mA	88	1000uF
EC5BU-12D05		±5 VDC	0 mA	±1500mA	45 mA	1470mA	85	1470uF
EC5BU-12D12		±12 VDC	0 mA	±625mA	45 mA	1436mA	87	660uF
EC5BU-12D15		±15 VDC	0 mA	±500mA	45 mA	1420mA	88	550uF
EC5BU-24S33	18-36 VDC	3.3 VDC	0 mA	4000 mA	50 mA	640 mA	86	4000uF
EC5BU-24S05		5 VDC	0 mA	3000 mA	50 mA	718 mA	89	3000uF
EC5BU-24S12		12 VDC	0 mA	1250 mA	20 mA	695 mA	90	1330uF
EC5BU-24S15		15 VDC	0 mA	1000 mA	20 mA	695 mA	90	1000uF
EC5BU-24D05		±5 VDC	0 mA	±1500mA	25 mA	726 mA	86	1470uF
EC5BU-24D12		±12 VDC	0 mA	±625mA	25 mA	710 mA	88	660uF
EC5BU-24D15		±15 VDC	0 mA	±500mA	25 mA	702 mA	89	550uF
EC5BU-48S33	36-75 VDC	3.3 VDC	0 mA	4000 mA	25 mA	320 mA	86	4000uF
EC5BU-48S05		5 VDC	0 mA	3000 mA	30 mA	359 mA	88	3000uF
EC5BU-48S12		12 VDC	0 mA	1250 mA	20 mA	347 mA	90	1330uF
EC5BU-48S15		15 VDC	0 mA	1000 mA	20 mA	351 mA	90	1000uF
EC5BU-48D05		±5 VDC	0 mA	±1500mA	20 mA	363 mA	86	1470uF
EC5BU-48D12		±12 VDC	0 mA	±625mA	20 mA	355 mA	88	660uF
EC5BU-48D15		±15 VDC	0 mA	±500mA	20 mA	351 mA	89	550uF

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

## Specifications

### INPUT SPECIFICATIONS:

Input Voltage Range .....12V.....9-18V  
 24V.....18-36V  
 48V.....36-75V  
 Under voltage lockout .....12Vin power up: 8.4V, ..... power down: 8V  
 24Vin power up: 17V, ..... power down: 16V  
 48Vin power up: 34V, ..... power down: 32V  
 Input Surge Voltage (100mS max.).....12Vin .....25Vdc max.  
 24Vin ..... 50Vdc max.  
 48Vin ..... 100Vdc max.  
 Input Filter ..... PI Type

### OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.5% max.  
 Voltage Balance (Dual) ..... ±2.0% max.  
 Transient Response: 25% Step Load Change ..... <500µ sec.  
 Ripple and Noise, 20MHz BW (Measured with 0.1µF MLCC) ... 100mV p-p max.  
 Temperature Coefficient ..... ±0.03%/°C max.  
 Short Circuit Protection ..... Continuous  
 Line Regulation<sup>1</sup>..... Single ..... ±0.2% max.  
 Dual ..... ±0.5% max.  
 Load Regulation<sup>2</sup> ..... Single ..... ±0.2% max.  
 Dual ..... ±1.0% max.  
 Cross Regulation (Dual output) Load cross variation 10%/100% ..... ±5% max.  
 Over Voltage Protection ..... Zener or TVS Clamp  
 Current Limit ..... 110% - 140% Nominal Output  
 Start up time ..... 20ms. max.

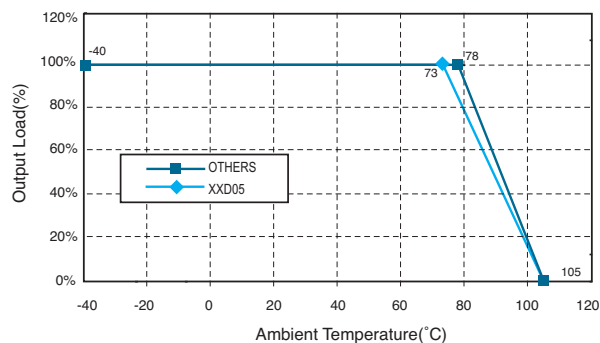
### OPTION:

- Suffix "T" to the Model Number With Remote Positive On/Off Control:  
 Logic Compatibility ...CMOS or Open Collector TTL, Referenced to -Vin  
 Module On ..... >5.5VDC to 75VDC or Open Circuit  
 Module Off ..... <1.2VDC
- Suffix "A" to the Model Number with Output Voltage Adjustable  
 External Trim Adj. Range  $\pm 10\%$ . Single Output Models Only

### GENERAL SPECIFICATIONS:

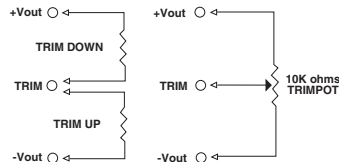
Efficiency ..... See Table  
 Isolation Voltage .....1500 VDC min.  
 Isolation Resistance .....10<sup>9</sup> Ohms min.  
 Isolation Capacitance ..... 1000pF typ.  
 Switching Frequency ..... 350KHz typ.  
 EMI/RFI ..... Conductive EMI Meets EN55022 Class A  
 Case Grounding .....Connect Case to -Vin with Decoupling Y Cap  
 Operating Ambient Temperature Range ..... -40°C to +85°C  
 Derating, Above 78°C ..... Linearly to Zero Power at +105°C  
 Case Temperature<sup>4</sup> ..... 105°C  
 Cooling ..... Natural Convection  
 Storage Temperature Range ..... -55°C to +125°C  
 Humidity ..... 95% RH max. Non condensing  
 MTBF .....ML-STD-217-F, GB, 25°C, Full Load .....1200K hrs typ.  
 Dimensions ..... 2.00x1.00x0.4 inches (50.8x25.4x10.2mm)  
 Case Material ..... Black Coated Copper with Non-Conductive Base  
 Weight ..... 35g

## EC5BU Series Derating Curve



## External Output Trimming

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



### NOTE:

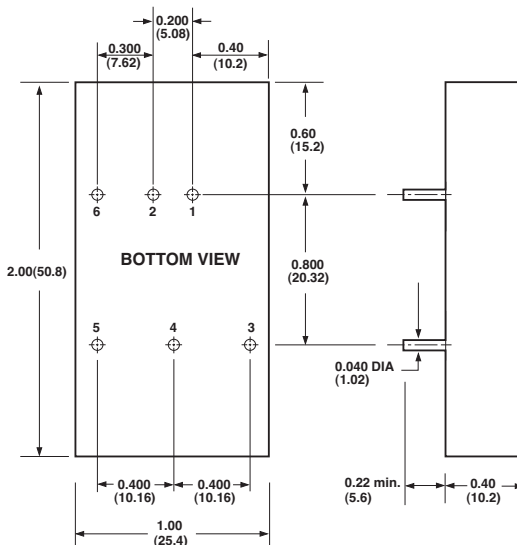
- Measured From High Line to Low Line
- Measured From Full Load to min. Load
- Maximum case temperature under any operating condition should Not be exceeded 105°C.

PIN CONNECTION	
Pin	Function
1	+Input
2	-Input
3	+Output
4	Common/NP/Trim(Optional)
5	-V Output
6	NP/Remote(Optional)

\*NP-NO PIN ON SINGLE OUTPUT

## CASE B

All Dimensions In Inches(mm)  
 Tolerances Inches: x.xx= ±0.04, x.xxx= ±0.010  
 Millimeters: x.x= ±1, x.xx= ±0.25



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[EC5BU-24D05](#) [EC5BU-48S33](#) [EC5BU-48S05](#) [EC5BU-48D05](#) [EC5BU-48D15](#) [EC5BU-12D15](#) [EC5BU-12S12](#)  
[EC5BU-12S33](#) [EC5BU-24D12](#) [EC5BU-24D15](#) [EC5BU-24S15](#) [EC5BU-48D12](#) [EC5BU-48S12](#) [EC5BU-48S15](#)