EC4BU SERIES
10 WATT 2:1 INPUT DC-DC CONVERTERS

FEATURES

* 10W Isolated Output
* Efficiency to 87%
* 2:1 Input Range
* Regulated Outputs
* Fixed Switching Frequency
* Input Under Voltage Protection
* Over Current Protection
* Conductive EMI Meets EN55032 Class A
* Continuous Short Circuit Protection
* Without Tantalum Capacitors Inside
* 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		
EC4BU-05S33	4.7-9 VDC	3.3 VDC	0 mA	2500 mA	120 mA	1897 mA	87	2470uF
EC4BU-05S05	4.7-9 VDC	5 VDC	0 mA	2000 mA	120 mA	2299 mA	87	2000uF
EC4BU-05S12	4.7-9 VDC	12 VDC	0 mA	833 mA	50 mA	2298 mA	87	940uF
EC4BU-05S15	4.7-9 VDC	15 VDC	0 mA	666 mA	50 mA	2297 mA	87	690uF
EC4BU-05D05	4.7-9 VDC	±5 VDC	0 mA	±1000 mA	50 mA	2353 mA	85	1000uF
EC4BU-05D12	4.7-9 VDC	±12 VDC	0 mA	±416 mA	50 mA	2295 mA	87	440uF
EC4BU-05D15	4.7-9 VDC	±15 VDC	0 mA	±333 mA	50 mA	2297 mA	87	330uF
EC4BU-12S33	9-18 VDC	3.3 VDC	0 mA	2500 mA	30 mA	838 mA	82	2470uF
EC4BU-12S05	9-18 VDC	5 VDC	0 mA	2000 mA	30 mA	980 mA	85	2000uF
EC4BU-12S12	9-18 VDC	12 VDC	0 mA	833 mA	35 mA	957 mA	87	940uF
EC4BU-12S15	9-18 VDC	15 VDC	0 mA	666 mA	35 mA	956 mA	87	690uF
EC4BU-12D05	9-18 VDC	±5 VDC	0 mA	±1000 mA	45 mA	980 mA	85	1000uF
EC4BU-12D12	9-18 VDC	±12 VDC	0 mA	±416 mA	45 mA	957 mA	87	440uF
EC4BU-12D15	9-18 VDC	±15 VDC	0 mA	±333 mA	45 mA	957 mA	87	330uF
EC4BU-24S33	18-36 VDC	3.3 VDC	0 mA	2500 mA	25 mA	419 mA	82	2470uF
EC4BU-24S05	18-36 VDC	5 VDC	0 mA	2000 mA	25 mA	490 mA	85	2000uF
EC4BU-24S12	18-36 VDC	12 VDC	0 mA	833 mA	25 mA	478 mA	87	940uF
EC4BU-24S15	18-36 VDC	15 VDC	0 mA	666 mA	25 mA	478 mA	87	690uF
EC4BU-24D05	18-36 VDC	±5 VDC	0 mA	±1000 mA	25 mA	490 mA	85	1000uF
EC4BU-24D12	18-36 VDC	±12 VDC	0 mA	±416 mA	25 mA	478 mA	87	440uF
EC4BU-24D15	18-36 VDC	±15 VDC	0 mA	±333 mA	25 mA	478 mA	87	330uF
EC4BU-48S33	36-75 VDC	3.3 VDC	0 mA	2500 mA	20 mA	212 mA	81	2470uF
EC4BU-48S05	36-75 VDC	5 VDC	0 mA	2000 mA	20 mA	245 mA	85	2000uF
EC4BU-48S12	36-75 VDC	12 VDC	0 mA	833 mA	20 mA	239 mA	87	940uF
EC4BU-48S15	36-75 VDC	15 VDC	0 mA	666 mA	20 mA	239 mA	87	690uF
EC4BU-48D05	36-75 VDC	±5 VDC	0 mA	±1000 mA	20 mA	245 mA	85	1000uF
EC4BU-48D12	36-75 VDC	±12 VDC	0 mA	±416 mA	20 mA	239 mA	87	440uF
EC4BU-48D15	36-75 VDC	±15 VDC	0 mA	±333 mA	20 mA	239 mA	87	330uF

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

SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load, and 25℃ Unless Otherwise Noted

INPUT SPECIFICATIONS:

Input Voltage Range ..... 5V ..... 4.7 - 9V
12V ..... 9 - 18V
24V ..... 18 – 36V
48V ..... 36 – 75V

Under Voltage Lockout ..... 5Vin power up: 4.4V ..... power down: 4.2V
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.) ..... 5Vin ..... 12Vdc 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 ..... <500μs
Ripple & Noise, 20MHz BW (Measured with 0.1uF MLCC) ..... 100mV pk-pk max.
Temperature Coefficient ..... ±0.03%/℃ max.
Short Circuit Protection ..... Continuous
Line Regulation (note1) ..... Single ..... ±0.2% max.
Dual ..... ±0.5% max.
Load Regulation (note2) ..... 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:

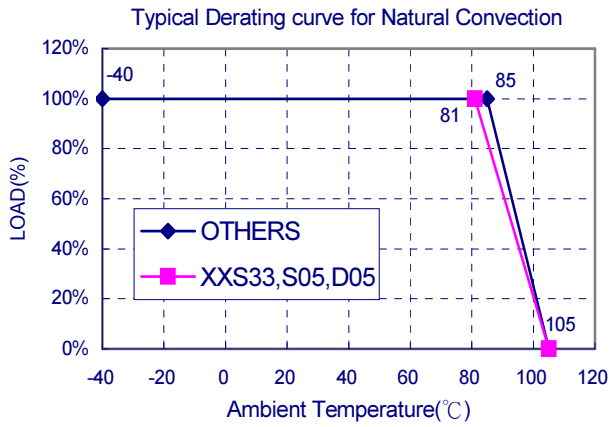
1. Suffix "T" to the model number with remote positive on/off control:
   Logic Compatibility ..... CMOS or open collector TTL, referenced to -Vin
   Module on ..... >5.5VDC to 75VDC or open circuit
   Module off ..... 0 to <1.2VDC
2. Suffix "A" to the model number with output voltage adjustable external trim adj. range≦±10%, single output models only.

GENERAL SPECIFICATIONS:

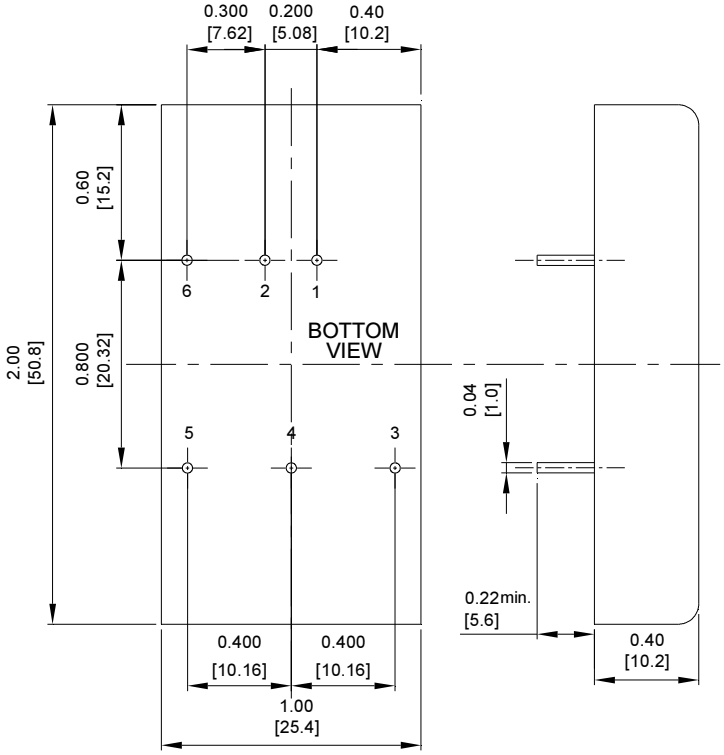
Efficiency ..... See Table
Isolation Voltage ..... 1500 VDC min.
Isolation Resistance ..... 10^9 Ohm min.
Isolation Capacitance ..... 1000pF typ.
Switching Frequency ..... 350KHz typ.
EMI/RFI ..... Conductive EMI Meets EN55032 Class A
Case Grounding ..... Connect Case to -Vin with Decoupling Y Cap.
Operating Ambient Temperature Range ..... -40℃ to +85℃
Derating, Above 85℃ ..... Linearly to Zero Power at +105℃
Case Temperature (note4) ..... 105℃
Cooling ..... Natural Convection
Storage Temperature Range ..... -55℃ to +125℃
Humidity ..... 95% RH max. Non Condensing
MTBF ..... MIL-HDBK-217-F, GB, 25℃, Full Load ..... 1200Khrs typ.
Dimensions ..... 2.00x1.00x0.4 inches (50.8x25.4x10.2 mm)
Case Material ..... Black Coated Copper with Non-Conductive Base
Weight 35g

NOTE:

1. Measured from high line to low line.
2. Measured from full load to min. load.
3. Maximum case temperature under any operating condition should not be exceeded 105℃.



CASE B Dimensions:



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

*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