EC5BU SERIES
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	9-18 VDC	5 VDC	0 mA	3000 mA	85 mA	1453 mA	88	3000uF
EC5BU-12S12	9-18 VDC	12 VDC	0 mA	1250 mA	70 mA	1420 mA	88	1330uF
EC5BU-12S15	9-18 VDC	15 VDC	0 mA	1000 mA	70 mA	1420 mA	88	1000uF
EC5BU-12D05	9-18 VDC	±5 VDC	0 mA	±1500mA	45 mA	1470mA	85	1470uF
EC5BU-12D12	9-18 VDC	±12 VDC	0 mA	±625mA	45 mA	1436mA	87	660uF
EC5BU-12D15	9-18 VDC	±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	18-36 VDC	5 VDC	0 mA	3000 mA	50 mA	718 mA	89	3000uF
EC5BU-24S12	18-36 VDC	12 VDC	0 mA	1250 mA	20 mA	695 mA	90	1330uF
EC5BU-24S15	18-36 VDC	15 VDC	0 mA	1000 mA	20 mA	695 mA	90	1000uF
EC5BU-24D05	18-36 VDC	±5 VDC	0 mA	±1500mA	25 mA	726 mA	86	1470uF
EC5BU-24D12	18-36 VDC	±12 VDC	0 mA	±625mA	25 mA	710 mA	88	660uF
EC5BU-24D15	18-36 VDC	±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	36-75 VDC	5 VDC	0 mA	3000 mA	30 mA	359 mA	88	3000uF
EC5BU-48S12	36-75 VDC	12 VDC	0 mA	1250 mA	20 mA	347 mA	90	1330uF
EC5BU-48S15	36-75 VDC	15 VDC	0 mA	1000 mA	20 mA	351 mA	90	1000uF
EC5BU-48D05	36-75 VDC	±5 VDC	0 mA	±1500mA	20 mA	363 mA	86	1470uF
EC5BU-48D12	36-75 VDC	±12 VDC	0 mA	±625mA	20 mA	355 mA	88	660uF
EC5BU-48D15	36-75 VDC	±15 VDC	0 mA	±500mA	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℃ Unless Otherwise Noted

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 ..... <500u sec.
Ripple and Noise, 20MHz BW (Measured with 0.1uF MLCC) ..... 100mV p-p max.
Temperature Coefficient ..... ±0.03%/℃ max.
Short Circuit Protection ..... Continuous
Line Regulation (Note 1) ..... Single ..... ±0.2% max.
Dual ..... ±0.5% max.
Load Regulation (Note 2) ..... 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 ..... <1.2VDC
2. Suffix "A" to the Model Number with Output Voltage Adjustable
   External Trim Adj. Range≦±10%, Single Output Models Only

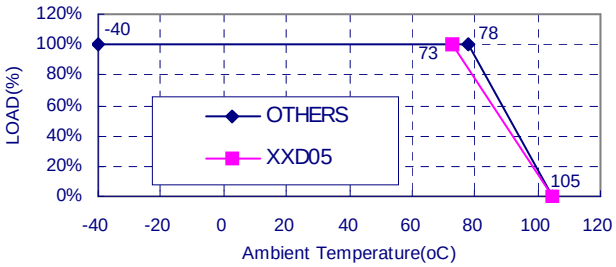
GENERAL SPECIFICATIONS:

Efficiency ..... See Table
Isolation Voltage ..... 1500 VDC min.
Isolation Resistance ..... 10^9 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℃ to +85℃
Derating, Above 78℃ ..... Linearly to Zero Power at +105℃
Case Temperature (Note 4) ..... 105℃
Cooling ..... Natural Convection
Storage Temperature Range ..... -55℃ to +125℃
Humidity ..... 95% RH max. Non condensing
MTBF .....MIL-STD-217-F, GB, 25℃, 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

NOTE:

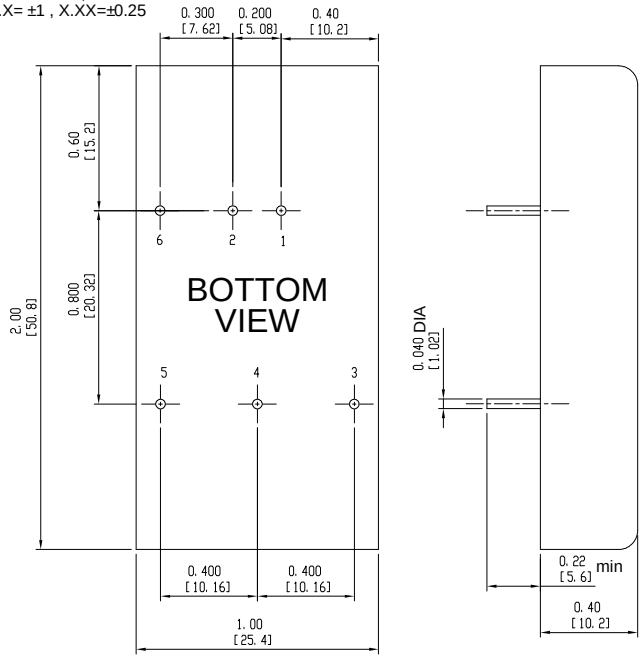
1. Measured From High Line to Low Line
2. Measured From Full Load to min. Load
3. Maximum case temperature under any operating condition should Not be exceeded 105℃.

Typical Derating curve for Natural Convection



CASE B Dimensions:

All Dimensions In Inches (mm)
Tolerances Inches: X.XX= ±0.04 , X.XXX= ±0.010
Millimeters: X.X= ±1 , X.XX=±0.25



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

*NP-NO PIN ON SINGLE OUTPUT