EC5BW SERIES
15 WATT 4:1 INPUT
DC-DC CONVERTERS

FEATURES

* 15W Isolated Output
* Efficiency to 88%
* 2''x1'' Six-Sided Shield Metal Case
* 4:1 Input Range
* Regulated Outputs
* Fixed Switching Frequency
* Input Under Voltage Protection
* Over Current Protection
* Remote On/Off (Option)
* Continuous Short Circuit Protection
* No Tantalum Capacitor Inside
* Conductive EMI Meets EN55022 Class A
* 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	(2)	(3)	
EC5BW-24S33	9-36 VDC	3.3 VDC	0 mA	4000 mA	60 mA	632 mA	87	87	4000μF
EC5BW-24S05	9-36 VDC	5 VDC	0 mA	3000 mA	70 mA	718 mA	87	87	3000μF
EC5BW-24S12	9-36 VDC	12 VDC	0 mA	1250 mA	30 mA	718 mA	87	87	1250μF
EC5BW-24S15	9-36 VDC	15 VDC	0 mA	1000 mA	30 mA	710 mA	88	88	1000μF
EC5BW-24D05	9-36 VDC	±5 VDC	0 mA	±1500 mA	30 mA	735 mA	85	85	1500μF
EC5BW-24D12	9-36 VDC	±12 VDC	0 mA	±625 mA	30 mA	718 mA	87	87	625μF
EC5BW-24D15	9-36 VDC	±15 VDC	0 mA	±500 mA	30 mA	710 mA	88	88	470μF
EC5BW-48S33	18-75 VDC	3.3 VDC	0 mA	4000 mA	40 mA	313 mA	88	88	4000μF
EC5BW-48S05	18-75 VDC	5 VDC	0 mA	3000 mA	40 mA	355 mA	88	88	3000μF
EC5BW-48S12	18-75 VDC	12 VDC	0 mA	1250 mA	20 mA	359 mA	87	87	1250μF
EC5BW-48S15	18-75 VDC	15 VDC	0 mA	1000 mA	20 mA	359 mA	87	87	1000μF
EC5BW-48D05	18-75 VDC	±5 VDC	0 mA	±150 0mA	20 mA	368 mA	85	85	1500μF
EC5BW-48D12	18-75 VDC	±12 VDC	0 mA	±625 mA	20 mA	359 mA	87	87	625μF
EC5BW-48D15	18-75 VDC	±15 VDC	0 mA	±500 mA	20 mA	359 mA	87	87	470μF

NOTE:

1. Nominal Input Voltage 24, 48VDC
2. Measured at Nominal Input Voltage
3. Measured at 12VDC for 24Vin, 24VDC for 48Vin

SPECIFICATIONS

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

INPUT SPECIFICATIONS:

Input Voltage Range ..... 24VDC ..... 9 – 36VDC
48VDC ..... 18 – 75VDC
Input Surge Voltage (100ms max.) ..... 24VDC ..... 50VDC max.
48VDC ..... 100VDC max.
Under Voltage Lockout ..... 24Vin Power Up ..... 8.8VDC typ.
24Vin Power Down ..... 8.0VDC typ.
48Vin Power Up ..... 17VDC typ.
48Vin Power Down ..... 16VDC typ.
Input Filter ..... PI Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.5% max.
Voltage Balance (Dual) ..... ±2.0% max.
Transient Response: 75% - 100% Step Load Change
Error Band ..... ±5% Vout nominal, Recovery Time ..... <250us
Ripple & Noise, 20MHz BW (Measured with 0.1uF MLCC)
Vo=3.3&5V .....75mV pk-pk max.
Vo=12V&15V&±12V&±15V ..... 100mV pk-pk max.
Temperature Coefficient ..... ±0.03%/C 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% - 170% Nominal Output
Output Short Circuit Protection ..... Continuous (Hiccup Mode)
Start Up Time ..... 10ms typ.

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 ..... >3.5VDC 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 Only

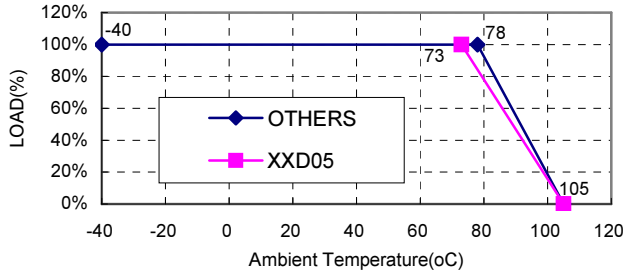
GENERAL SPECIFICATIONS:

Efficiency ..... See Table
Isolation Voltage ..... 1500 VDC min.
Isolation Resistance ..... 10^9 ohm min.
Isolation Capacitance ..... 1000pF typ.
Switching Frequency ..... 400KHz 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℃
De-rating, Above 78℃ ..... Linearly to Zero Power at +105℃
Case Temperature (note3) ..... 105℃
Cooling ..... Natural Convection
Storage Temperature Range ..... -55℃ to +125℃
Humidity ..... 95% RH max. Non-Condensing
MTBF ..... MIL-STD-217F, GB 25C, Full Load ..... T.B.D. hrs
Dimensions ..... 2.00x1.00 x0.40 inches (50.8x25.4x10.2 mm)
Case Material ..... Black Coated Copper with Non-Conductive Base
Weight 35g

NOTE:

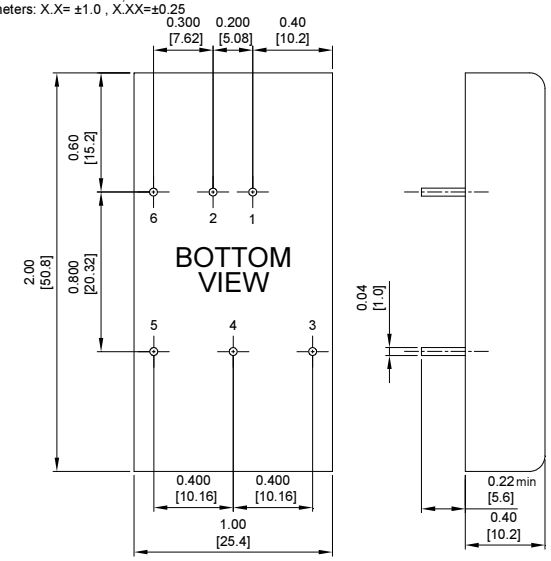
1. Measured from high line to low line.
2. Measured from full load to min. load.
3. Maximum case temperature under any operating condition should not be exceeded 105℃.

Typical Derating curve for Natural Convection



SIZE B Dimensions:

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



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

EXTERNAL OUTPUT TRIM

