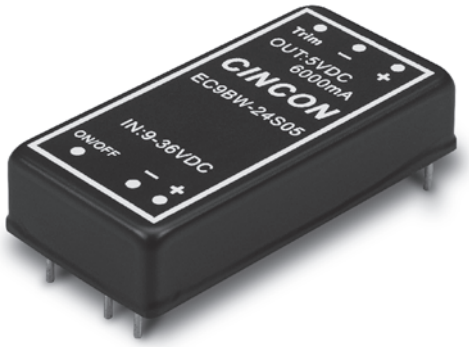
EC9BW

SERIES

30 WATT 4 : 1 INPUT DC-DC CONVERTERS



Features

- 30W Isolated Output
- Efficiency to 92%
- 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
- Continuous Short Circuit Protection
- No Tantalum Capacitor 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	(2)	(3)	
EC9BW-24S33	9-36 VDC	3.3 VDC	0 mA	7500 mA	100 mA	1172 mA	88	88.5	7500μF
EC9BW-24S05	9-36 VDC	5 VDC	0 mA	6000 mA	110 mA	1397 mA	89.5	89.5	6000μF
EC9BW-24S12	9-36 VDC	12 VDC	0 mA	2500 mA	30 mA	1374 mA	91	90.5	2500μF
EC9BW-24S15	9-36 VDC	15 VDC	0 mA	2000 mA	30 mA	1374 mA	91	90.5	2000μF
EC9BW-24D12	9-36 VDC	±12 VDC	0 mA	±1250 mA	30 mA	1374 mA	91	90.5	1250μF
EC9BW-24D15	9-36 VDC	±15 VDC	0 mA	±1000 mA	35 mA	1359 mA	92	91	1000μF
EC9BW-48S33	18-75 VDC	3.3 VDC	0 mA	7500 mA	35 mA	593 mA	87	87.5	7500μF
EC9BW-48S05	18-75 VDC	5 VDC	0 mA	6000 mA	50 mA	694 mA	90	89.5	6000μF
EC9BW-48S12	18-75 VDC	12 VDC	0 mA	2500 mA	20 mA	683 mA	91.5	90	2500μF
EC9BW-48S15	18-75 VDC	15 VDC	0 mA	2000 mA	20 mA	679 mA	92	91	2000μF
EC9BW-48D12	18-75 VDC	±12 VDC	0 mA	±1250 mA	20 mA	683 mA	91.5	90.5	1250μF
EC9BW-48D15	18-75 VDC	±15 VDC	0 mA	±1000 mA	20 mA	679 mA	92	91	1000μF

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

Specifications

INPUT SPECIFICATIONS:

Input Voltage Range..... 24V.....9-36V
48V.....18-75V
Input Surge Voltage(100ms max.)..... 24V.....50Vdc max.
48V.....100Vdc max.
Under Voltage lockout..... 24Vin Power Up.....8.8V typ.
24Vin Power Down.....8.0V typ.
48Vin Power Up.....17V typ.
48Vin Power Down.....16V typ.
Positive Logic Remote ON/OFF (see note 3 & 4)
Input Filter.....Pi Type
Positive Logic Remote on/off Control (Note 3 & 4)

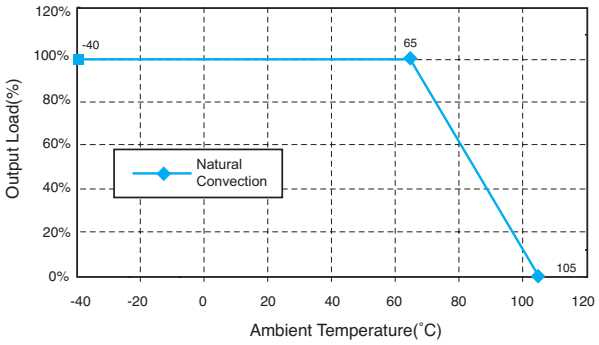
OUTPUT SPECIFICATIONS:

Voltage Accuracy.....±1.0% max.
Voltage Balance (Dual) ..... ±1.0% max.
Transient Response: 75% - 100% Step Load Change
Error Band.....±5% Vout Nominal, Recovery Time .....< 250us
Ripple & Noise, 20MHz BW (Measured with 0.1μF MLCC)
Vo=3.3 & 5V ..... 75mV pk-pk, max.
Vo=12V & 15V & ±12V & ±15V ..... 100mV p-p max.
Temperature Coefficient.....±0.02%/°C max.
Line Regulation[1].....Single/Dual.....± 0.2% max.
Load Regulation[2].....Single.....± 0.5% max.
Dual.....± 1.0% max.
Cross Regulation (Dual output) Load Cross variation 10%/100% . ±5.0% max.
Over Voltage Protection.....Zener or TVS Clamp
Current Limit .....110% - 160% Nominal Output
Output Short Circuit Protection ..... Continuous (Hiccup Mode)
External Trim Adj. Range (Single Output Models Only) .....±10%
Start Up Time ..... 5ms typ.

GENERAL SPECIFICATIONS:

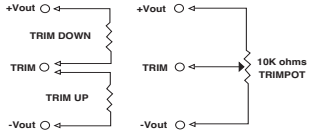
Efficiency.....See Table
Isolation Voltage.....1500VDC min.
Isolation Resistance.....10^9 ohm min.
Isolation Capacitance..... 1000pF typ.
Switching Frequency..... 430KHz typ.
EMI/RFI.....Six Sided Continuous Shield
Operating Ambient Temperature.....-40°C to +85°C
De-Rating, Above 65°C.....Linearly to Zero Power at 105°C
Case Temperature[5]..... 105°C max.
Cooling ..... Natural Convection
Storage Temperature Range ..... -55°C to + 125°C
Thermal Shutdown, Case Temp. ..... 110°C typ.
Humidity ..... 95% RH max. Non-Condensing
MTBF.....MIL-STD-217F, GB, 25°C, Full Load.....Single.....900Khrs typ.
Dual.....650Khrs typ.
Dimensions .....2.00x1.00x0.40 inches (50.8x25.4x10.2 mm)
Case Material ..... Black Coated Copper with Non-Conductive Base
Weight 35g

EC9BW Series Derating Curve



External Output Trim

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



NOTE:

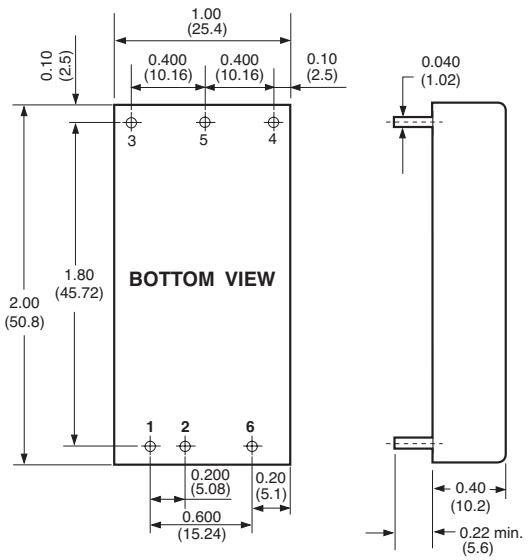
1. Measured From High Line to Low Line.
2. Measured From Full Load to min Load.
3. Logic Compatibility.....CMOS or Open Collector TTL, ref. to - Vin
Module ON..... >3.5VDC to 75VDC or Open Circuit
Module OFF.....<1.2VDC
4. Suffix"N"to the Model Number with Negative Logic Remote ON/OFF
Module ON.....<1.2VDC
Module OFF..... >3.5VDC to 75VDC or Open Circuit
5. Maximum case temperature under any operating condition should not be exceeded 105°C.

PIN CONNECTION

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	Trim	-Vout
5	-Vout	Common
6	Remote ON/OFF	Remote ON/OFF

CASE B

All Dimensions In Inches(mm)
Tolerance Inches: x.xx= ±0.02, x.xxx= ±0.010
Millimeters: x.x= ±0.5, x.xx= ±0.25



All Specifications Typical At Nominal Line, Full Load and 25°C Unless Otherwise Noted.