



E-Star Power Development Co., Ltd. (E-STAR)

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30W Module DC to DC power supply > EC9BW



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
- * 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	(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	50 mA	1374 mA	91	90.5	2500µF
EC9BW-24S15	9-36 VDC	15 VDC	0 mA	2000 mA	50 mA	1374 mA	91	90.5	2000µF
EC9BW-24D12	9-36 VDC	±12 VDC	0 mA	±1250 mA	60 mA	1374 mA	91	90.5	1250µF
EC9BW-24D15	9-36 VDC	±15 VDC	0 mA	±1000 mA	60 mA	1359 mA	92	91	1000µF
EC9BW-48S33	18-75 VDC	3.3 VDC	0 mA	7500 mA	50 mA	593 mA	87	87.5	7500µF
EC9BW-48S05	18-75 VDC	5 VDC	0 mA	6000 mA	50 mA	694 mA	89.5	90	6000µF
EC9BW-48S12	18-75 VDC	12 VDC	0 mA	2500 mA	30 mA	683 mA	91.5	90	2500µF
EC9BW-48S15	18-75 VDC	15 VDC	0 mA	2000 mA	30 mA	679 mA	92	91	2000µF
EC9BW-48D12	18-75 VDC	±12 VDC	0 mA	±1250m A	40 mA	683 mA	91.5	90.5	1250µF
EC9BW-48D15	18-75 VDC	±15 VDC	0 mA	±1000m A	40 mA	679 mA	92	91	1000µF

NOTE:

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



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SPECIFICATIONS

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

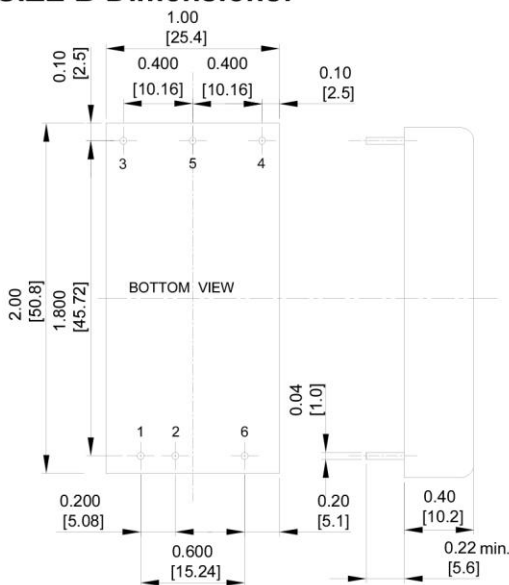
INPUT SPECIFICATIONS:

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
Positive Logic Remote on/off Control (note3&4)		

OUTPUT SPECIFICATIONS:

Voltage Accuracy		±1% max.
Voltage Balance (Dual)		±1% 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		±0.02%/°C
Line Regulation (note1)	Single	±0.2% max.
	Dual	±0.5% max.
Load Regulation (note2)	Single	±0.5% 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% - 160% Nominal Output
Output Short Circuit Protection		Continuous (Hiccup Mode)
External Trim Adj. Range (Single Output Models Only)		±10%
Start up Time		5ms typ.

SIZE B Dimensions:



PIN CONNECTION		
Pin	Single	Dual
1	+V Input	+V Input
2	-V Input	-V Input
3	+V Output	+V Output
4	Trim	-V Output
5	-V Output	Common
6	Remote On/Off	

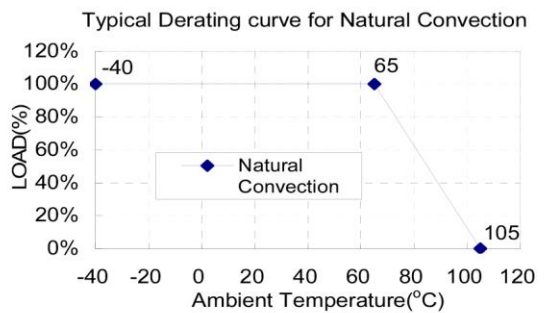
NOTE: Pin Size is 0.04±0.004 Inch (1.0±0.1 mm) DIA
 All Dimensions In Inches (mm)
 Tolerances Inches: X.XX= ±0.02, X.XXX= ±0.010
 Millimeters: X.X= ±1.0, X.XX= ±0.25

GENERAL SPECIFICATIONS:

Efficiency		See Table
Isolation Voltage		1500 VDC min.
Isolation Resistance		10 ⁹ ohm min.
Isolation Capacitance		1000pF typ.
Switching Frequency		430KHz typ.
EMI/RFI		Six-Sided Continuous Shield
Operating Ambient Temperature Range		-40°C to +85°C
De-rating. Above 65°C		Linearly to Zero Power at +105°C
Case Temperature (note 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-HDBK-217F. GB. 25°C. Full Load	Single	900Khrs typ.
	Dual	650Khrs typ.
Dimensions		2.00 x 1.00 x 0.40 inches (50.8 x 25.4 x 10.2 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. Logic compatibility CMOS or open collector TTL, referenced to -Vin.
 Module on >3.5VDC to 75VDC or open circuit
 Module off 0 to <1.2VDC
4. Suffix "N" to the model number with negative logic remote on/off
 Module on 0 to <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.



EXTERNAL OUTPUT TRIM

