



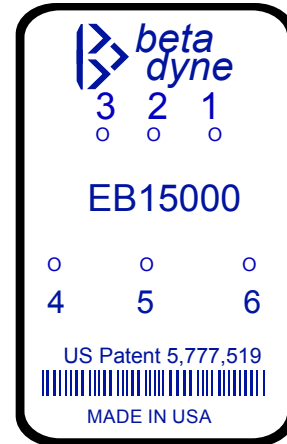
EB15000

16W DUAL DC/DC CONVERTER

18–36V_{IN}
+5V_{OUT}@3A, -5V_{OUT}@0.2A

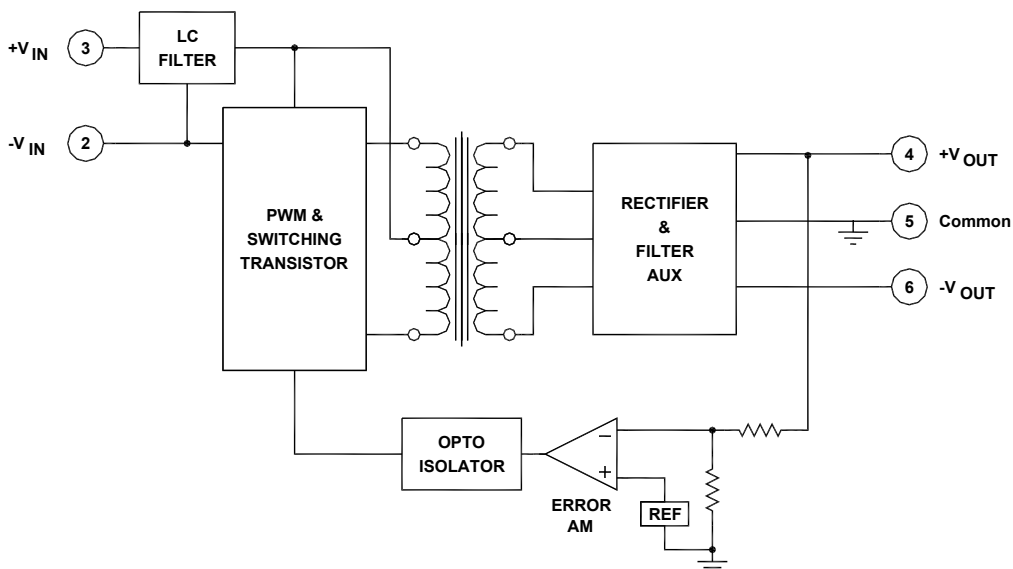
Key Features

- 74% efficiency
- 2:1 input voltage range
- Dual outputs
- Input-to-output isolation
- Soft start
- Short circuit protection
- 150μA off state current



Functional Description

The EB15000 is a 16W dual isolated DC/DC converter that accepts 18V_{IN} to 36V_{IN} and provides dual outputs of +5V_{OUT}@3A and -5V_{OUT}@0.2A. The converter features a 2:1 input voltage range, 300kHz switching frequency, forward topology, -40°C to +71°C operating temperature range, and comes packaged in a 2×1×0.395-inch case.



Typical Block Diagram

Electrical Specifications

INPUT SPECIFICATIONS

Unless otherwise specified, all parameters are given under typical +25°C with nominal input voltage and under full output load conditions.

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Input Voltage Range		18	24	36	Vdc
No Load Input Current			10		mA
Full Load Input Current	Vin=24V, Vout1=5@3.0A, Vout2=-5@200mA		900		mA
Input Startup Voltage		7			Vdc
Undervoltage Shutdown			8		Vdc
Input Filter	LC				
Reflected Ripple			120		mA
Reverse Polarity	External series-blocking diode				
Input Surge Current (20µS Spike)				10	A
Short Circuit Current Limit			150		% I _{IN}

OUTPUT SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Output Voltage, Vout1	Pin 4 = +5V Pin 5 = Output Ground		5		Vdc
Output Voltage, Vout2	Pins 7 = -5V, Pin 5 = Output Ground		-5		Vdc
Output Voltage Accuracy	See diagram in Figure 1				
Output Current, Iout1			3		A
Output Current, Iout2			200		mA
Ripple & Noise	with external capacitors shown Figure 2, pk to pk		1	2	%
Line Regulation	Minimum Vin to maximum Vmax		±1	±5	%
Load Regulation for Vout	Conditions at Vout1=5@3A, Vout2=-5@200mA		±1		%
Load Regulation for -Vout	See diagram in Figure 1				
Temperature Coefficient @ FL			0.02		%/°C
Transient Response Time	50% FL to FL to 50% FL		100	150	µS
Short Circuit Protection	All outputs, by input current limiting				
Turn On Delay with Soft Start			2		mS

GENERAL SPECIFICATIONS

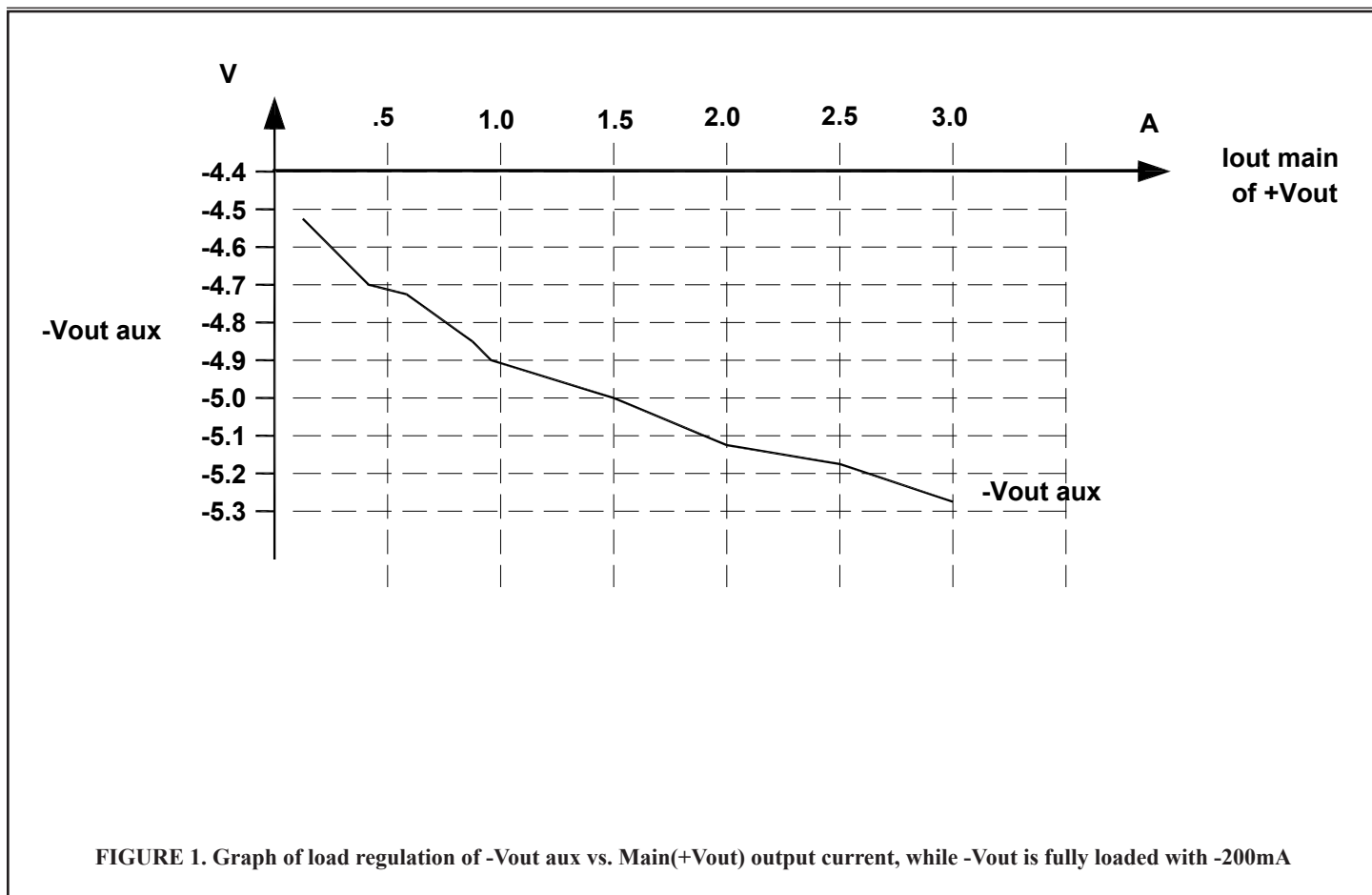
PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Efficiency (at full power)	Vin=24V, Vout1=5@3A, Vout2=-5@200mA		74		%
Isolation Voltage (1 min.), Input to Output			1500		Vdc
Isolation Resistance			10 ⁹		Ω
Isolation Capacitance			75		pF
Switching Frequency			300		kHz

ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Operating Temperature, Industrial		-40		+71	°C
Storage Temperature Range		-55		+125	°C
Thermal Resistance				7.4	°C/W _{DISS}
Maximum Operating Case Temperature				100	°C
Derating					
Humidity	Up to 95% non-condensing				
Cooling	Free-air convection				
EMI/RFI	Six-sided continuous shielded metal case				
MTBF	Per MIL-HNBK-217F (Ground benign, +25°C)		1.1×10 ⁶		hours

PHYSICAL CHARACTERISTICS

PARAMETER	CONDITION / NOTE	MIN	TYP	MAX	UNIT
Dimensions (L×W×H)	2.00×1.00×0.395 in. (50.80×25.40×10.03mm)				
Weight	1.06 oz. (30.3g)				
Case Material	Coated metal				
Shielding Connection	-Input Ground (Pin 3)				



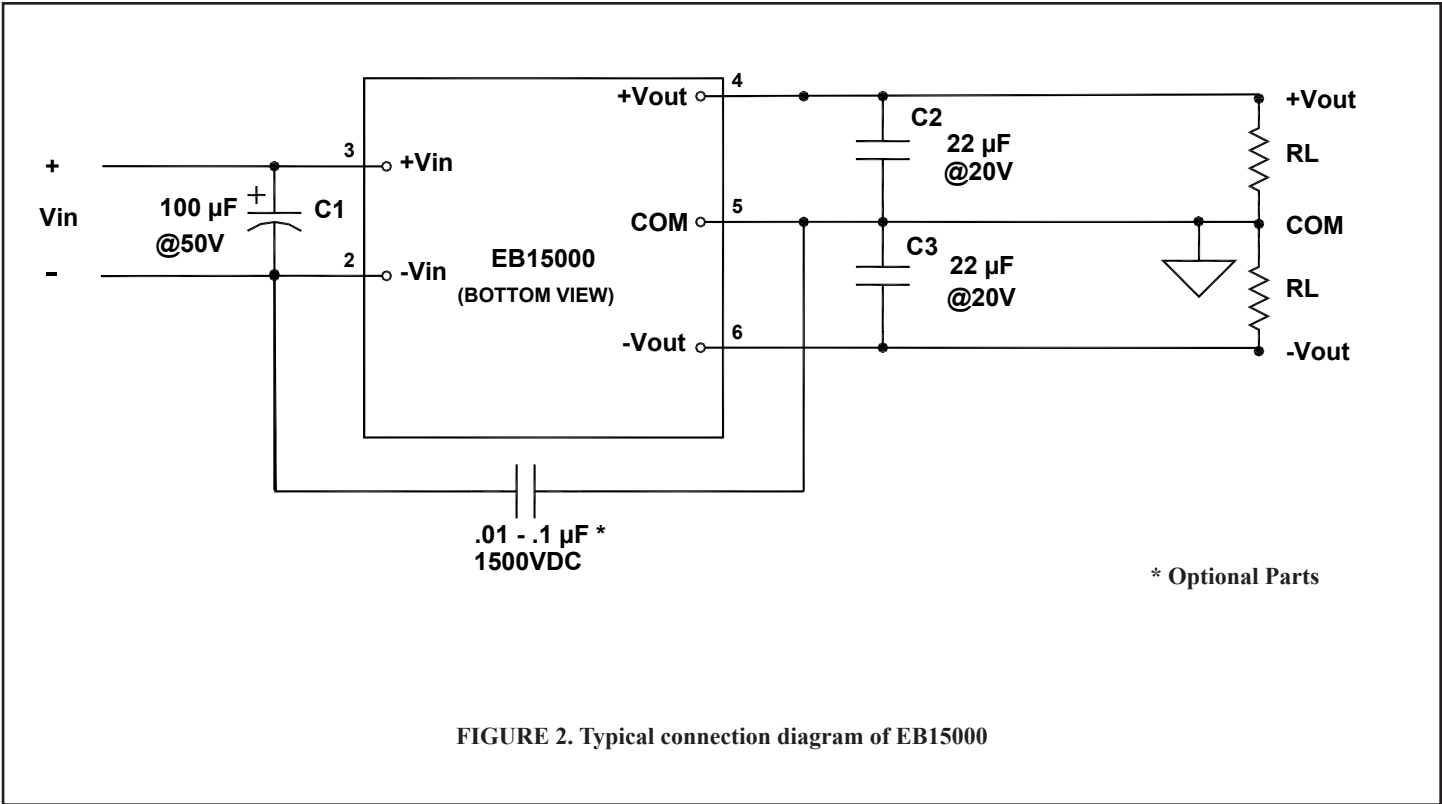


FIGURE 2. Typical connection diagram of EB15000

