

Product Data Sheet

4.0 WATT UNREGULATED HIGH ISOLATION DC/DC CONVERTER

HB04UC







FEATURES

- ROHS COMPLIANT
- HIGH ISOLATION 3000V RATING
- 8000V ISOLATION TEST VOLTAGE
- BARRIER 100% PRODUCTION TESTED
- **LOW BARRIER CAPACITANCE 10PF**
- LOW LEAKAGE CURRENT 2µA MAX
- INTERNAL FILTERING

APPLICATIONS

- BIOMEDICAL DATA ACQUISITION
- INDUSTRIAL PROCESS CONTROL
- ANALYTICAL MEASUREMENTS
- GROUND LOOP ELIMINATION
- INTRINSIC SAFETY SYSTEMS

DESCRIPTION

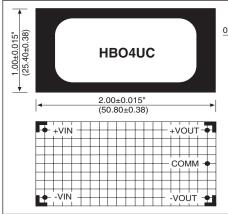
The HB04UC Series is a low-cost, high-isolation voltage, unregulated, single and dual output DC/DC converter. The dielectric withstand characteristics of each converter is tested in production to ensure barrier integrity.

The HB04UC Series uses advanced circuit design and packaging technology to realize superior reliability and performance. A 100kHz driven push-pull oscillator is used to ensure stable frequency and non-saturating operation of the input stage. This means there are no high peak voltages or currents like other design topologies, which can reduce unit reliability. Reliability is further enhanced by the use of MOSPOWER transistors. These rugged devices permit higher frequency operation with less complicated drive circuitry than is possible with bipolar power transistors. Reduced parts count adds to the reliability of the HB04UC Series.

The high efficiency of the HB04UC Series means less internal power dissipation. With less heat to dissipate, the HB04UC Series can operate over a wider ambient temperature range with no degradation of reliable operation.

The HB04UC Series offers the user low cost without sacrificing reliability. The use of surface mounted devices and manufacturing technologies make it possible to offer premium performance at low cost.

MECHANICAL





Notes: All dimensions are in inches (millimeters).

GRID: 0.100 inches (2.54 millimeters)

PIN PLACEMENT TOLERANCE: ± 0.015"

COMMON PIN: Not connected internally on single output models

MARKED WITH: date code, job code.

MATERIAL: Units are encapsulated in a low thermal resistance molding compound which has excellent chemical resistance, wide operating temperature range, and good electrical properties under high humidity environments. The encapsulant and outer shell of the unit have UL94V-0 ratings. Lead material is brass with a solder plated surface to allow ease of solderability.

More product information and application notes are available on our website at www.cd4power.com

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ELECTRICAL SPECIFICATIONS

Specifications typical at TA = +25°C, nominal input voltage, rated output current unless otherwise noted.

	NOMINAL INPUT	RATED OUTPUT	RATED OUTPUT	INPUT CURRENT		
MODEL	VOLTAGE	VOLTAGE	CURRENT	NO LOAD	RATED LOAD	EFFICIENCY
	(VDC)	(VDC)	(mA)	(mA)	(mA)	(%)
HB04U05S05QC	5	5	800	60	1000	80
HB04U05S12QC	5	12	333	60	1000	80
HB04U05S15QC	5	15	267	60	1000	80
HB04U12S05QC	12	5	800	25	380	87
HB04U12S12QC	12	12	333	25	380	87
HB04U12S15QC	12	15	267	25	380	87
HB04U15S05QC	15	5	800	20	310	87
HB04U15S12QC	15	12	333	20	310	87
HB04U15S15QC	15	15	267	20	310	87
HB04U05D05QC	5	±5	±400	60	944	85
HB04U05D12QC	5	±12	±167	60	944	85
HB04U05D15QC	5	±15	±134	60	944	85
HB04U12D05QC	12	±5	±400	25	375	88
HB04U12D12QC	12	±12	±167	25	375	88
HB04U12D15QC	12	±15	±134	25	375	88
HB04U15D05QC	15	±5	±400	20	300	88
HB04U15D12QC	15	±12	±167	20	300	88
HB04U15D15QC	15	±15	±134	20	300	88

Note: Other input to output voltage options may be available. Please consult factory.

COMMON SPECIFICATIONS

Specifications typical at TA = +25°C, nominal input voltage, rated output current unless otherwise noted.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT					
Voltage Range		4.5	5	5.5	VDC
		10.8	12	13.2	
		13.5	15	16.5	
Reflected Ripple Current			35		mAp-p
ISOLATION					
Rated Voltage		3000			VDC
Test Voltage	60 Hz, 10 Seconds	8000			Vpk
Resistance			10		GΩ
Capacitance			10		pF
Leakage Current	Viso= 240Vac, 60Hz		1.2	2	μArms
ОИТРИТ					
Rated Power			4		l w l
Voltage Setpoint Accuracy			±3	±5	%
Temperature Coefficient			±0.02		%/°C
Ripple & Noise	BW = DC to 10MHz		100		mVp-p
BW = 10Hz to 2MHz			20		mVrms
Line Regulation	High Line to Low Line		±1.5		%/% Vin
Load Regulation	See performance curves				
GENERAL					
Switching Frequency			100		kHz
Package Weight			22		g
MTTF per MIL-HDBK-217, Rev. E	Circuit Stress Method				
Ground Benign	Ta = +25°C		200,000		Hr
TEMPERATURE					
Specification		-25		+70	°C
Operation		-40		+85	°C
Storage		-40		+110	°C

THROUGH-HOLE SOLDERING INFORMATION

These devices are intended for wave soldering or manual soldering.

They are not intended to be subject to surface mount processes under any circumstances.

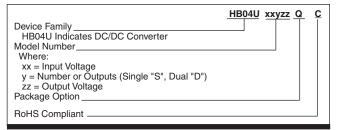
The normal wave soldering process can be used with these devices where the device is subjected to a maximum wave temperature of 260°C for a period of no more than 10 seconds. Within this time and temperature range, the integrity of the device's plastic body will not be compromised and internal temperatures within the converter will not exceed 175°C. Care should be taken to control manual soldering limits identical to that of wave soldering.

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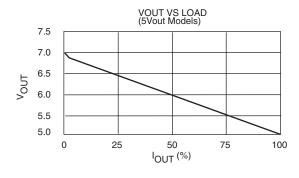
ABSOLUTE MAXIMUM RATINGS

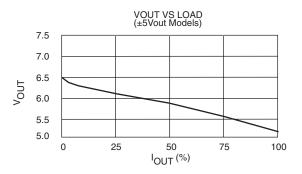
Internal Power Dissipation	1W
Short Circuit Duration	Momentary
Lead Temperature (soldering, 10 seconds max)	+300°C

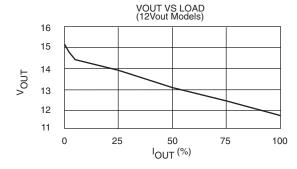
ORDERING INFORMATION

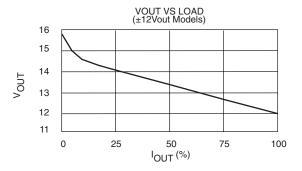


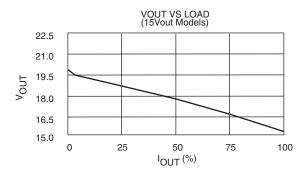
TYPICAL PERFORMANCE CURVES

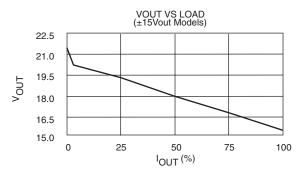


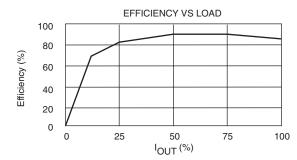












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