

# APPLIED CONCEPTS INC.

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[www.acipower.com](http://www.acipower.com)

# ACB-12-1394

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## CCFL INVERTER

(For Multiple Tube Applications)

04/29/04

### DESCRIPTION

The ACB-12-1394 is designed to power 6 CCFL's to a nominal power level of 26W from an input voltage of +12V.

This unit features a low profile and high starting voltage capability to meet the needs of present generation LCD backlights.

Intensity control (0-100%) is accomplished by the user providing a variable dc level of 0V(off) to +5V(full-on) at pin 7 of CON1.

A +5V level is available at pin 6 of CON1 for powering the high-side of the intensity control potentiometer.

Enable control (0V=off, +5V=on) is accomplished at pin5 of CON1.

The lamp outputs are open and short circuit

### MECHANICAL / ENVIRONMENTAL

Weight = 90.7 grams

Altitude = 10,000 Ft maximum

Humidity < 85% non-condensing

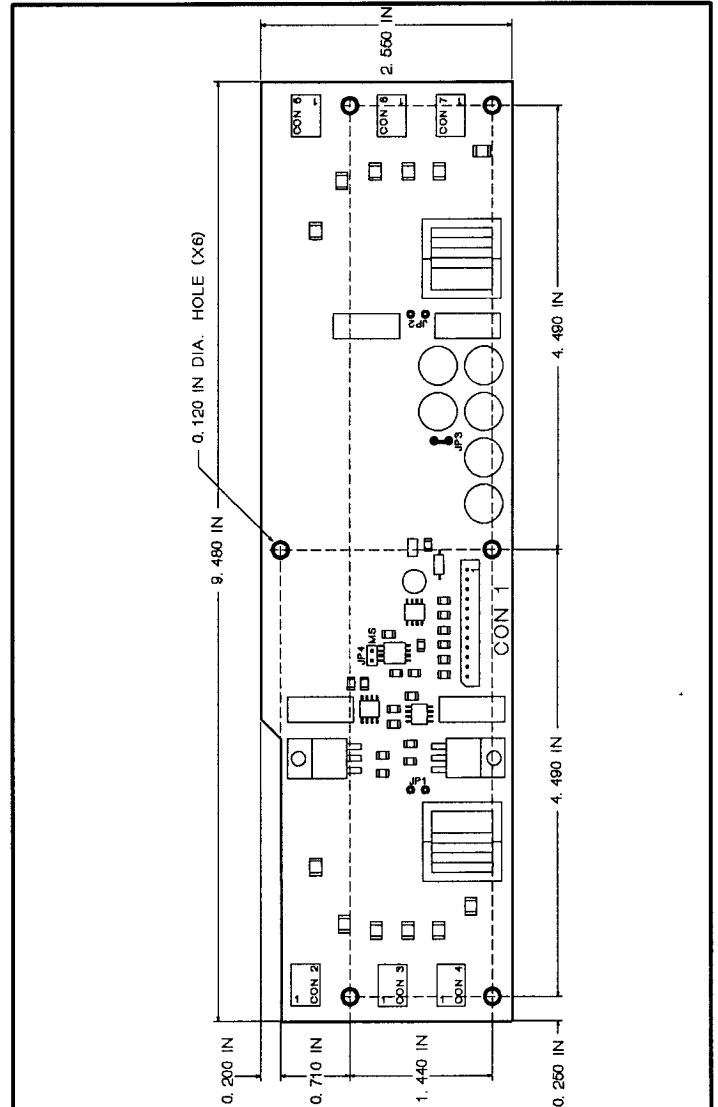
Size (L x W x H) = 240.1mm x 64.8mm x 14.6mm

PCB thickness = 1.6mm

Mounting Holes = 3.05mm diameter (X2)

Input Power & Control connector = CON1

CCFL Output Connectors = CON2-CON7

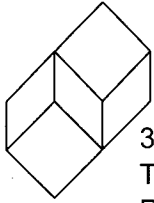


PROFILE < 0.575 IN

INPUT CONNECTOR  
CON1  
MOLEX 22-03-5125

OUTPUT CONNECTOR(S)  
CON2-CON7  
JST SM02B-BHSS-1

PIN #	FUNCTION	PIN #	FUNCTION
1,2	+VIN	1	CCFL HOT
3,4	GND(POWER)	2	CCFL COLD
5	ENABLE		
6	+5V OUT		
7	VCNTL		
8	GND(SIGNAL)		
9	(OPTIONAL)		
10	GND(SIGNAL)		
11	TBD		
12	GND(SIGNAL)		



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## MAXIMUM RATINGS\*

04/29/04

Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.7 to 16.0	Vdc
Vip	Voltage applied to any Input Pin (Referenced to Ground)	-0.7 to 5.7	Vdc
Iop	Current sourced or sinked from any Output Pin	+/- 10	mAdc
Pin	Input Power (DC Input Voltage x DC Input Current)	25	W
Top	Operating Temperature (Still Air Ambient around Inverter)	0 to +70	DegC
Tstg	Storage Temperature	-40 to +150	DegC

\* Maximum Ratings are those values beyond which damage to the inverter may occur

## RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
Vin	Supply Voltage (Referenced to Ground)	9.0	15.0	Vdc
Lsv	Cold Cathode Fluorescent Lamp Sustaining Voltage	600	850	Vrms
Pif	User supplied PWM Input Frequency	50	200	Hz
VSYif	Vertical Synchronization Input Frequency	59	61	Hz
Vcntl	Intensity Control Voltage	0	5.0	Vdc

## ELECTRICAL CHARACTERISTICS

Vin = +12V, Lsv = 725Vrms, Vcntl = +5V, ENon = +5V unless otherwise specified

Symbol	Parameter	Test Conditions	Min	Max	Unit
Lstart	Lamp Starting Voltage		1800		Vrms
Lout	Lamp Output Current		5.7	6.3	mArms
Lfreq	Lamp-Current Frequency		59	73	Khz
Pfreq	PWM Dimming Frequency	Vcntl(Pin 7) = +2.5V	95	101	Hz
Pdc	PWM Duty Cycle Range	Vcntl(Pin 7) = 0 to +5V	0	100	%
ENoff	Enable Control, unit off (Pin 5)		0	0.7	Vdc
ENon	Enable Control, unit on (Pin 5)		3.5	5.0	Vdc
+5Vout	+5V Out (Pin 6)	10k load to ground	4.6	5.3	Vdc
Iin	Input Current Draw	Vin = +12V	1.93	2.14	Adc
Pout	PWM output signal (Pin 10) "On time" "Off time"	Vcntl = +2.5V, 10k load to ground	4.6 0.0	5.3 0.7	Vdc Vdc
Eff	Electrical Efficiency		90		%