

# APPLIED CONCEPTS INC.

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

# AC3-12-1415

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## CCFL INVERTER (For Multiple Tube Applications)

06/15/04

### DESCRIPTION

The AC3-12-1415 is designed to power 2 CCFL's with up to 7 mA of output current and 7 W of output power per tube. 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 0.5V(off) to 4.5V(full-on) at pin 6 of CON1.

A +5V level is available at pin 7 of CON1 for powering the high-side of the intensity control potentiometer.

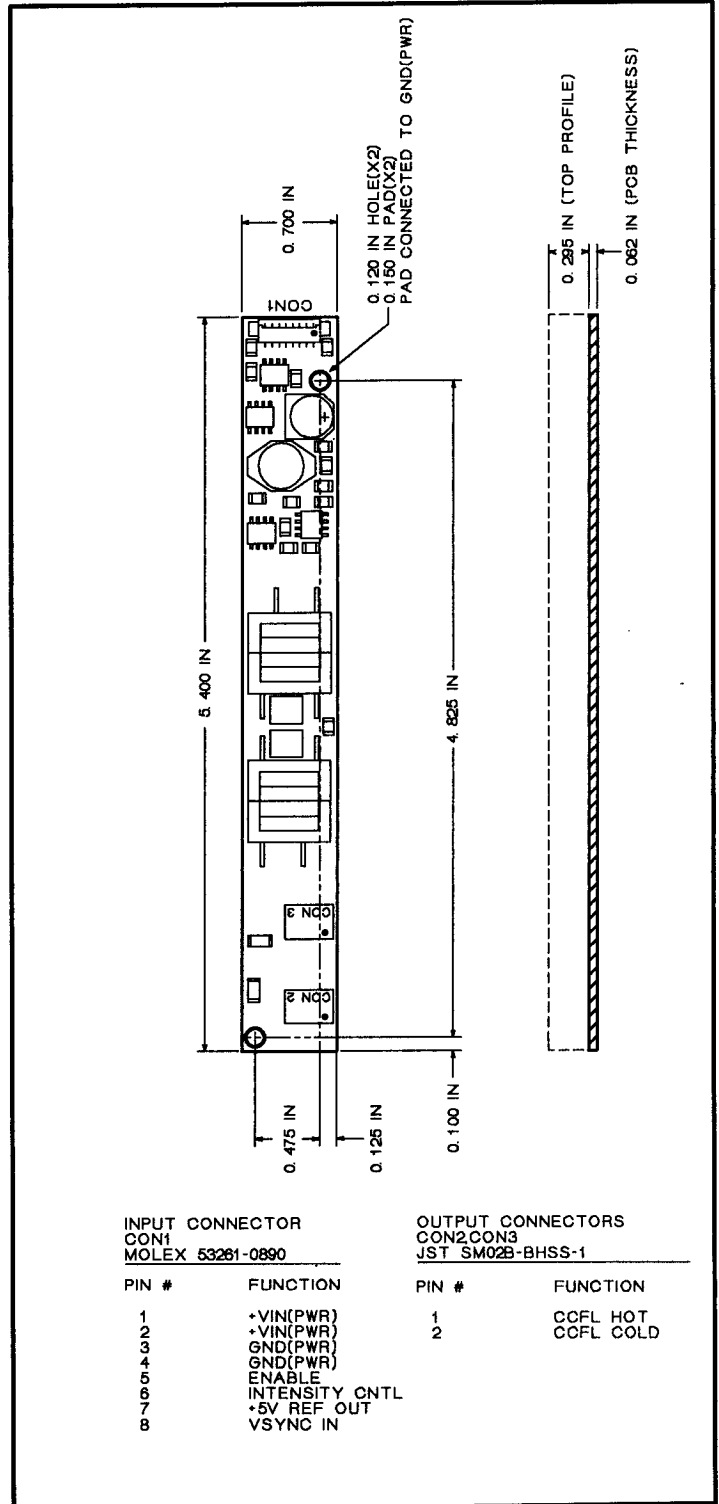
To minimize beat frequency interference, this unit is capable of synchronizing its pwm frequency to the LCD Vsync rate via pin 8 of CON1.

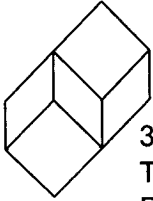
The lamp outputs are open and short circuit

No protruding leads or components provides flat surface on bottom side of inverter assembly.

### MECHANICAL / ENVIRONMENTAL

- Weight = 20 grams
- Altitude = 10,000 Ft maximum
- Humidity < 85% non-condensing
- Size (L x W x H) = 15.4 IN x 0.7 IN x 0.360 IN
- PCB thickness = 0.062 IN
- Mounting Holes = 0.120 IN diameter (X2)
- Input Power & Control connector = CON1
- CCFL Output Connectors = CON2, CON3





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## MAXIMUM RATINGS\*

Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.7 to 13	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	mAcd
Pin	Input Power (DC Input Voltage x DC Input Current)	15	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)	11.4	12.6	Vdc
Lsv	Cold Cathode Fluorescent Lamp Sustaining Voltage	800	1200	Vrms
VSyif	Vertical Synchronization Input Frequency	48	62	Hz
Vcntl	Intensity Control Voltage	0	5.0	Vdc

## ELECTRICAL CHARACTERISTICS

Vin = +12V, Lsv = 1100Vrms, Vcntl = +5V, ENon = +5V unless otherwise specified

Symbol	Parameter	Test Conditions	Min	Max	Unit
Lstart	Lamp Starting Voltage		2200		Vrms
Lout	Lamp Output Current		6.25	7.75	mA rms
Lfreq	Lamp-Current Frequency		45	55	Khz
Pfreq	PWM Dimming Frequency	Vcntl(Pin 6) = +2.5V Vsync-In (Pin 8) = 0V Vsync-In (Pin 8) = 60Hz	95 119.8	101 120.2	Hz Hz
Pdc	PWM Duty Cycle Range	Vcntl(Pin 6) = 0.5 to +4.5V	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
VSyhi	Vertical Sync In Hi Level (Pin 8)		0	0.7	Vdc
VSylo	Vertical Sync In LO Level (Pin 8)		3.5	5.0	Vdc
+5Vout	+5V Reference Out (Pin 7)	10k load to ground	4.6	5.3	Vdc
Iin	Input Current Draw			1.2	Adc
Eff	Electrical Efficiency		90		%