

## I-LITE, 7.2 WATT LED DRIVER

(Common-Cathode, One to Six Channels)

### GENERAL DESCRIPTION

The ACI-A040030-3013 LED Driver is a true constant current source capable of driving up to 6 parallel channels of series connected LEDs with a forward voltage drop up to 40V (see page 3 for output configurations and recommendations)

This driver provides a complete integrated solution that operates over an input voltage range from +10.8V to +15V.

Simple to connect and operate, this driver is capable of providing precise control to support dimming applications with a minimum of 3000:1.

Please refer to Table 1 on page 3, for the maximum output current per channel, based on the number of channels connected.

This unit features enable and intensity control inputs and is designed to work with the Digital View LCD Controller and Button Board (see page 3 for more information).

### MECHANICAL/ENVIRONMENTAL

Weight = 7.2 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 2.0 IN x 0.95 IN x 0.285 IN

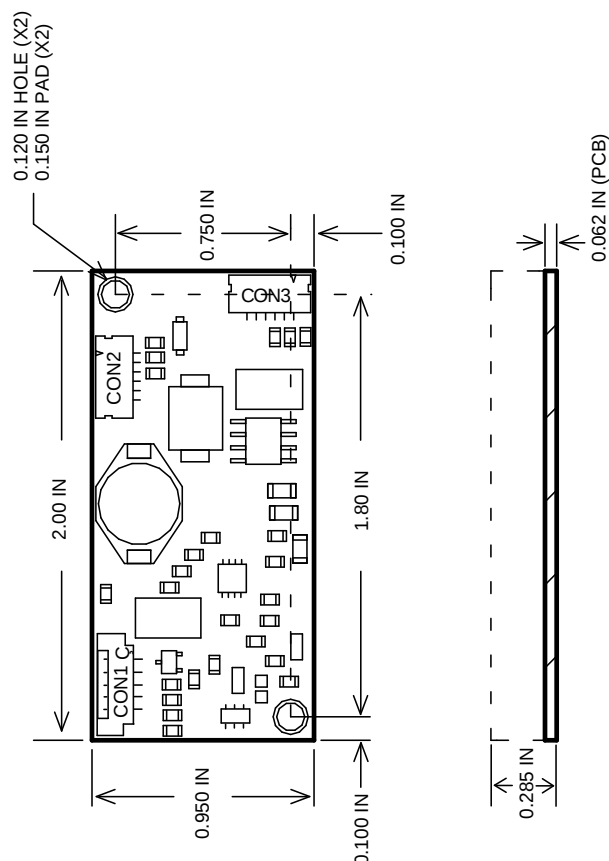
PCB thickness = 0.062 IN

Mounting Holes = 0.120 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connectors = CON2 and CON3

RoHS Compliant



INPUT CONNECTOR  
CON1  
MOLEX 53261-0571

OUTPUT CONNECTORS  
CON2 AND CON3  
JST SM06B-SHLS-TF

| PIN # | FUNCTION            |
|-------|---------------------|
| 1     | +VIN(PWR)           |
| 2     | GND(PWR)            |
| 3     | ENABLE (IN)         |
| 4     | INTENSITY CNTL (IN) |
| 5     | +5.0VREF (OUT)      |

| PIN # | FUNCTION             |
|-------|----------------------|
| 1     | LED ANODE 1 (4)      |
| 2     | LED ANODE 2 (5)      |
| 3     | LED ANODE 3 (6)      |
| 4     | LED CATHODE (COMMON) |
| 5     | LED CATHODE (COMMON) |
| 6     | LED CATHODE (COMMON) |

### MAXIMUM RATINGS\*

| Symbol | Parameter                                               | Value       | Unit |
|--------|---------------------------------------------------------|-------------|------|
| Vin    | Supply Voltage (Referenced to Ground)                   | -0.3 to 18  | Vdc  |
| Vip    | Voltage applied to any Input Pin (Referenced to Ground) | -0.3 to 5.7 | Vdc  |
| Iop    | Current sourced or sinked from any Output Control Pin   | +/- 10      | mAdc |
| Pin    | Input Power (DC Input Voltage x DC Input Current)       | 9.2         | W    |
| Top    | Operating Temperature (Still air ambient around Driver) | -30 to +85  | °C   |
| Tstg   | Storage Temperature                                     | -40 to +105 | °C   |

\*Maximum Ratings are those values beyond which damage to the LED driver may occur.

### RECOMMENDED OPERATING CONDITIONS

| Symbol | Parameter                                            | Min       | Max  | Unit |
|--------|------------------------------------------------------|-----------|------|------|
| Vin    | Supply Voltage (Referenced to Ground)                | 10.8      | 15.0 | Vdc  |
| Vf     | Series Connected Cumulative LED Forward-Drop Voltage | **Vin + 1 | 40   | Vdc  |
| Icctl  | LED Intensity Control Voltage                        | 0.1       | 4.6  | Vdc  |

\*\*Vin must be less than the minimum Forward-Drop Voltage (Vf).

### ELECTRICAL CHARACTERISTICS

Vin = +12V, Number of Channels = 6, Vf = 40V, Icctl = +0.1V, Enable = +5.0V, unless otherwise specified.

| Symbol   | Parameter                                       | Test Conditions               | Min  | Nom   | Max  | Unit |
|----------|-------------------------------------------------|-------------------------------|------|-------|------|------|
| OCV      | Open Circuit Voltage                            | No Load                       | 45   | 50    | 55   | Vdc  |
| Iout     | Output Current per Channel                      |                               | 24   | 30    | 36   | mAdc |
| Iadj     | Nominal output current adjust range Per Channel | Icctl (Pin4) ≤ 0.1V           |      |       | 30   | mAdc |
|          |                                                 | Icctl (Pin4) ≥ 4.6V           | 0    |       |      | mAdc |
| ENoff    | Enable Control, Unit Off                        | Enable (Pin 3)                |      |       | 0.5  | Vdc  |
| ENon     | Enable Control, Unit ON                         | Enable (Pin 3)                | 2.0  |       |      | Vdc  |
| +5.0Vref | +5.0V Output Reference Voltage                  | 1K Ohm Load to Ground (Pin 5) | 4.75 | 5.0   | 5.25 | Vdc  |
| Iin      | Input Current Draw                              | Vf = 40V                      |      | 0.67  |      | Adc  |
| Iind     | Input Current Draw (Disabled)                   | Enable (Pin 3) = 0V           |      | 0.001 | 0.06 | Adc  |
| Eff      | Electrical Efficiency                           |                               |      | 90    |      | %    |

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### PRODUCT DATA SHEET

08/06/19

| Number of Channels Connected            | 1*  | 2* | 3* | 4  | 5  | 6  |
|-----------------------------------------|-----|----|----|----|----|----|
| Maximum Output Current per Channel (mA) | 180 | 90 | 60 | 45 | 36 | 30 |

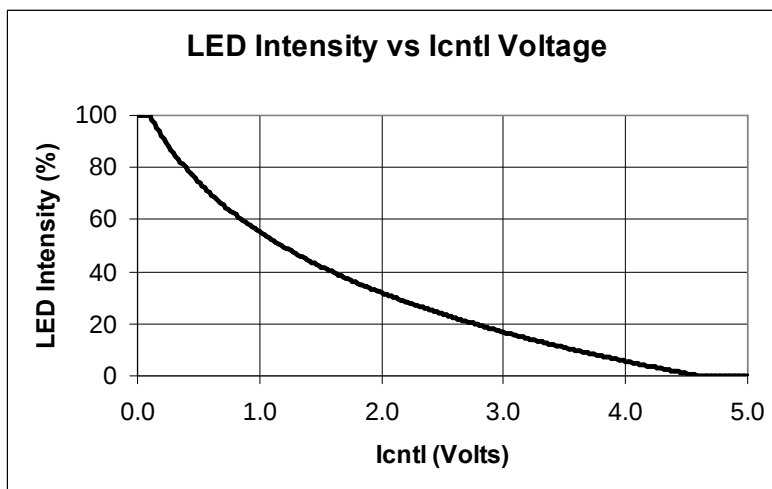
Table 1 - Maximum Output Current per Channel, based on the number of channels connected



#### CAUTION:

\*When powering 2 or 3 LED strings, use 2 output channels in parallel to prevent overloading 1 channel

\*When powering 1 LED string, use 3 output channels in parallel to prevent overloading 1 channel



NOTE: The intensity response curve is designed to be compatible with the Digital View LCD Controller and Button Board.

#### Digital View LCD Controllers and Jumper Settings

| LCD Controller | Jumper Settings                                 |
|----------------|-------------------------------------------------|
| ALR-1400       | (JB2 = 2-3) (JB3 = 1-2) (JP2 = 1-2)             |
| ALR-1920       | (JB2 = 2-3) (JB3 = 1-2) (JB5 = 1-2)             |
| DVS-1600       | (JB1 = 2-3) (JB2 = 2-3) (JB3 = 1-2) (JB5 = 1-2) |
| SP-1600        | (JB2 = 2-3) (JB3 = 1-2) (JP3 = 1-2)             |
| SVH-1920       | (JB2 = 2-3) (JB3 = 1-2) (JP3 = 1-2)             |