

## PRODUCT DATA SHEET

02/06/12

## I-LITE, 10.8 WATT LED DRIVER

(Common Cathode, Six Channels)

### GENERAL DESCRIPTION

The ACI-A036050-2056 is designed to drive up to 6 parallel channels of series connected LEDs with a maximum forward voltage of 36V.

The number of channels and current per channel are configurable per Table 1 on Page 3, by setting a four-position switch located on the driver, enabling the driver to support a wide range of displays.

Operating as a true constant current source, the driver provides a complete integrated solution that operates over an input voltage range from 10 to +15VDC.

Simple to connect and operate, the driver solution is capable of providing precise control to support dimming applications of over 5,000 to 1.

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 = 8.4 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 2.0 IN x 0.95 IN x 0.530 IN

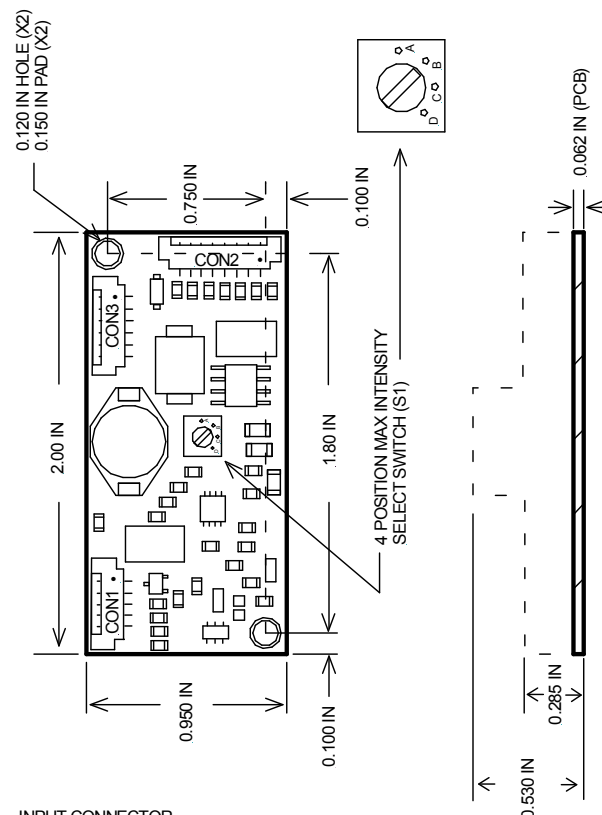
PCB thickness = 0.062 IN

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

#### PIN # FUNCTION

|   |                     |
|---|---------------------|
| 1 | +VIN(PWR)           |
| 2 | GND(PWR)            |
| 3 | ENABLE (IN)         |
| 4 | INTENSITY CNTL (IN) |
| 5 | +5V REF (OUT)       |

#### OUTPUT CONNECTOR

CON2

MOLEX 53261-0871

#### PIN # FUNCTION

|   |                      |
|---|----------------------|
| 1 | LED ANODE #1         |
| 2 | LED ANODE #2         |
| 3 | LED ANODE #3         |
| 4 | LED ANODE #4         |
| 5 | LED ANODE #5         |
| 6 | LED ANODE #6         |
| 7 | NC                   |
| 8 | LED CATHODE (COMMON) |

#### OUTPUT CONNECTOR

CON3

MOLEX 53261-0671

#### PIN # FUNCTION

|   |                      |
|---|----------------------|
| 1 | LED CATHODE (COMMON) |
| 2 | LED CATHODE (COMMON) |
| 3 | LED CATHODE (COMMON) |
| 4 | LED CATHODE (COMMON) |
| 5 | LED CATHODE (COMMON) |
| 6 | LED CATHODE (COMMON) |

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### 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)       | 13.7        | W    |
| Top    | Operating Temperature (Still air ambient around Driver) | -30 to +70  | °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  | 15  | Vdc  |
| Vf     | Series Connected Cumulative LED Forward-Drop Voltage | 18  | 36  | Vdc  |
| Icntl  | LED Intensity Control Voltage                        | 0.1 | 4.6 | Vdc  |

### ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 34V per channel, # of channels = 6, Icntl = +0.1V, Enable = +5V, S1 = A, unless otherwise specified.

| Symbol | Parameter                                           | Test Conditions                | Min  | Nom   | Max  | Unit |
|--------|-----------------------------------------------------|--------------------------------|------|-------|------|------|
| OCV    | Open Circuit Voltage                                | No Load                        | 45   | 50    | 55   | Vdc  |
| Iout-a | Output Current per Channel, Setting A               | Switch S1 = A                  | 47.5 | 50    | 52.5 | mADC |
| Iout-b | Output Current per Channel, Setting B               | Switch S1 = B                  | 40   | 42    | 44   | mADC |
| Iout-c | Output Current per Channel, Setting C               | Switch S1 = C                  | **   | **    | **   | mADC |
| Iout-d | Output Current per Channel, Setting D               | Switch S1 = D                  | **   | **    | **   | mADC |
| ICNTL  | Nominal Output Current per Channel Adjustable Range | ICNTL (Pin 4) = +4.6V to +0.1V | 0    |       | 50   | mADC |
| ENoff  | Enable Control, Unit Off                            | Enable (Pin 3)                 |      |       | 0.5  | Vdc  |
| ENon   | Enable Control, Unit ON                             | Enable (Pin 3)                 | 2.0  |       |      | Vdc  |
| +5Vref | +5V Output Reference Voltage                        | 1K Ohm Load to Ground (Pin 5)  | 4.75 | 5.0   | 5.25 | Vdc  |
| Iin    | Input Current Draw                                  |                                |      | 0.95  |      |      |
| Iind   | Input Current Draw (Disabled)                       | Enable (Pin 3) = 0V            |      | 0.001 | 0.06 | Adc  |
| Eff    | Electrical Efficiency                               |                                |      | 90    |      | %    |

\*\*Switch position reserved for future use.

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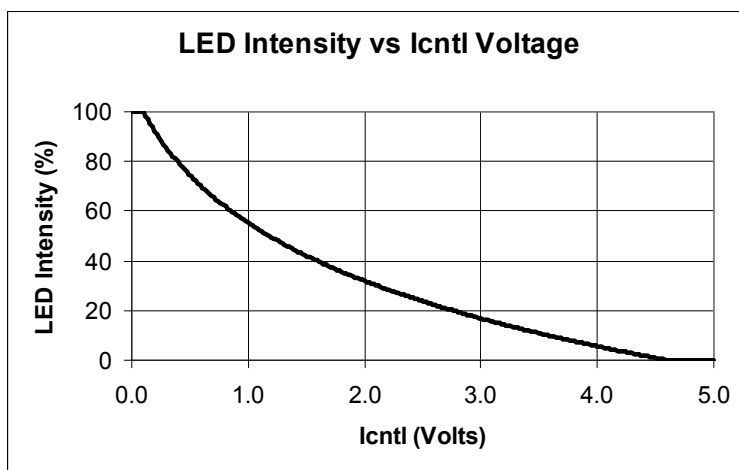
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### Possible Configurations

| Switch Setting (S1) | Number of LED Channels Connected         |              |              |              |              |              |
|---------------------|------------------------------------------|--------------|--------------|--------------|--------------|--------------|
|                     | 1                                        | 2            | 3            | 4            | 5            | 6            |
|                     | Iout/ch (mA)                             | Iout/ch (mA) | Iout/ch (mA) | Iout/ch (mA) | Iout/ch (mA) | Iout/ch (mA) |
| <b>A</b>            | 300                                      | 150          | 100          | 75           | 60           | 50           |
| <b>B</b>            | 250                                      | 125          | 83.3         | 62.5         | 50           | 41.7         |
| <b>C</b>            | Switch position reserved for future use. |              |              |              |              |              |
| <b>D</b>            | Switch position reserved for future use. |              |              |              |              |              |

TABLE1. – Output Current per Channel, based on Switch (S1) Setting and Number of Channels Connected.



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)             |