

## I-DRIVE, 6.0 WATT LED DRIVER

(Single Channel 120V, 0-50mA)

### GENERAL DESCRIPTION

The ACI-2288 represents the 3<sup>rd</sup> generation of I-Drive technology used for powering LED backlights.

Operating as a true constant current source and capable of driving up to 40 LEDs in series. This driver provides a complete integrated solution that is regulated over an input range of +8V to +18V.

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

### MECHANICAL/ENVIRONMENTAL

Weight = 20.5 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 2.35 IN x 1.43 IN x 0.385 IN

PCB thickness = 0.062 IN

Mounting Holes = 0.137 IN diameter (X2)

Input Power & Control Connector = CON1

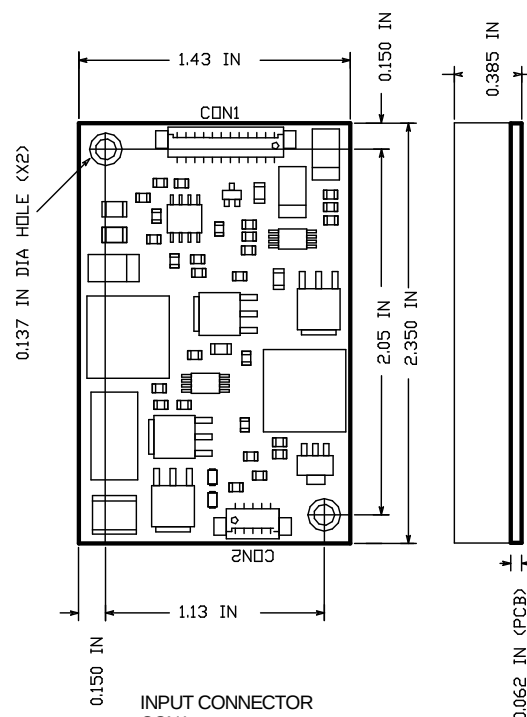
LED Output Connector = CON2

RoHS Compliant

# ACI-2288

## PRODUCT DATA SHEET

10/09/2013



INPUT CONNECTOR  
CON1  
MOLEX 53261-1271

| PIN# | FUNCTION         |
|------|------------------|
| 1    | +8 TO +18V (PWR) |
| 2    | +8 TO +18V (PWR) |
| 3    | +8 TO +18V (PWR) |
| 4    | GND (PWR)        |
| 5    | GND (PWR)        |
| 6    | GND (PWR)        |
| 7    | ENABLE           |
| 8    | ICNTL            |
| 9    | TBD              |
| 10   | TBD              |
| 11   | GND (SIGNAL)     |
| 12   | +5V REF OUT      |

OUTPUT CONNECTOR  
CON2  
MOLEX 53261-0571

| PIN# | FUNCTION       |
|------|----------------|
| 1    | +LED (ANODE)   |
| 2    | +LED (ANODE)   |
| 3    | NC             |
| 4    | -LED (CATHODE) |
| 5    | -LED (CATHODE) |

### MAXIMUM RATINGS\*

| Symbol | Parameter                                               | Value       | Unit |
|--------|---------------------------------------------------------|-------------|------|
| Vin    | Supply Voltage (Referenced to Ground)                   | -0.7 to 20  | 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 Control Pin   | +/- 10      | mAdc |
| Pin    | Input Power (DC Input Voltage x DC Input Current)       | 8.4         | 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 driver may occur.

### RECOMMENDED OPERATING CONDITIONS

| Symbol | Parameter                                            | Min | Max  | Unit |
|--------|------------------------------------------------------|-----|------|------|
| Vin    | Supply Voltage (Referenced to Ground)                | 8.0 | 18.0 | Vdc  |
| Vf     | Series Connected Cumulative LED Forward-Drop Voltage | 36  | 120  | Vdc  |
| Icntl  | LED Intensity Control Voltage                        | 0.5 | 4.5  | Vdc  |

### ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 110Vdc, Icntl = +4.5V, Enable = +5V unless otherwise specified

| Symbol | Parameter                           | Test Conditions                | Min  | Nom  | Max  | Unit |
|--------|-------------------------------------|--------------------------------|------|------|------|------|
| OCV    | Open Circuit Voltage                | No Load                        | 133  | 140  | 147  | Vdc  |
| Iout   | Output Current                      |                                | 45   | 50   | 55   | mAdc |
| Icntl  | Nominal Output Current Adjust Range | Icntl(Pin 8)= +0.5V to +4.5V   | 0    |      | 50   | mAdc |
| ENoff  | Enable Control, Unit Off            |                                |      |      | 0.5  | Vdc  |
| ENon   | Enable Control, Unit ON             |                                | 2.0  |      |      | Vdc  |
| +5Vref | +5V Output Reference Voltage        | 1K Ohm Load to Ground (Pin 12) | 4.75 | 5.0  | 5.25 | Vdc  |
| Iin    | Input Current Draw                  |                                |      | 0.53 |      | Adc  |
| Iind   | Input Current Draw (Disabled)       | Enable (Pin 7) = 0V            |      |      | 0.06 | Adc  |
| Eff    | Electrical Efficiency               |                                | 86   |      |      | %    |

**LED Intensity vs Icntrl**

