

# ACI-2292

## PRODUCT DATA SHEET

05/16/13

### I-DRIVE 5, 22.0 WATT LED DRIVER (Single Channel 40V, 0-550mA)

#### GENERAL DESCRIPTION

The ACI-2292 represents the 5<sup>th</sup> generation of I-Drive technology used for powering LED backlights.

Operating as a true constant current source and capable of driving one bank of series connected LEDs with a forward voltage drop up to 40V. This driver provides a complete integrated solution that is regulated over an input voltage range from +10V 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.

This unit features enable and intensity control inputs.

#### MECHANICAL/ENVIRONMENTAL

Weight = 35.7 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 3.25 IN x 2.00 IN x 0.47 IN

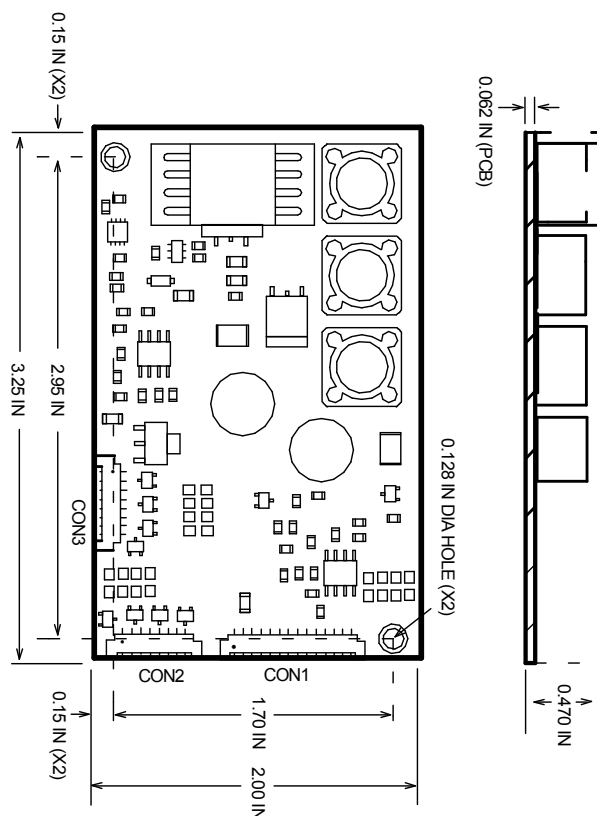
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connectors = CON2 and CON3

RoHS Compliant



#### INPUT CONNECTOR

CON1

MOLEX 53261-1471

#### PIN# FUNCTION

|    |                   |
|----|-------------------|
| 1  | +10 to +18V (PWR) |
| 2  | +10 to +18V (PWR) |
| 3  | +10 to +18V (PWR) |
| 4  | +10 to +18V (PWR) |
| 5  | GND (PWR)         |
| 6  | GND (PWR)         |
| 7  | GND (PWR)         |
| 8  | GND (PWR)         |
| 9  | ENABLE            |
| 10 | ICNTL             |
| 11 | TBD               |
| 12 | TBD               |
| 13 | +5VDC REF OUT     |
| 14 | GND (SIGNAL)      |

#### OUTPUT CONNECTORS

CON2

MOLEX 53261-0871

#### PIN# FUNCTION

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

(CON3 NOT USED)

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### 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)       | 30          | 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)                | 10.0      | 18.0 | Vdc  |
| Vf     | Series Connected Cumulative LED Forward-Drop Voltage | **Vin + 1 | 40   | Vdc  |
| Icntl  | LED Intensity Control Voltage                        | 0.1       | 4.9  | Vdc  |

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

### ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 40V, Icntl = +4.9V, Enable = +5V unless otherwise specified.

| Symbol | Parameter                           | Test Conditions                | Min  | Nom | Max  | Unit |
|--------|-------------------------------------|--------------------------------|------|-----|------|------|
| OCV    | Open Circuit Voltage                | No Load                        | 40   | 45  | 50   | Vdc  |
| Iout   | Output Current                      |                                | 522  | 550 | 578  | mAdc |
| Iadj   | Nominal Output Current Adjust Range | Icntl(Pin 10) <= +0.1V         |      |     | 0    | %    |
|        |                                     | Icntl(Pin 10) >= +4.9V         | 100  |     |      | %    |
| 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 13) | 4.75 | 5.0 | 5.25 | Vdc  |
| Iin    | Input Current Draw                  |                                |      | 2.1 |      | Adc  |
| Iind   | Input Current Draw (Disabled)       | Enable (Pin 9) = 0V            |      |     | 0.06 | Adc  |
| Eff    | Electrical Efficiency               |                                |      | 87  |      | %    |

BRIGHTNESS CURVE

