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# ACI-F077660-2578

## PRODUCT DATA SHEET

10/27/14

### I-DRIVE 6, 51 WATT LED DRIVER (77V, Single Channel, 0-660mA)

#### GENERAL DESCRIPTION

The ACI-F077660-2578 represents the 6<sup>th</sup> generation of I-Drive technology used for powering LED backlights.

Operating as a true constant current source and capable of driving a single bank of series connected LEDs with a forward voltage drop up to 77V. This driver provides a complete integrated solution that is regulated over an input voltage range from +10.8V to +15V DC.

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 = 50.7 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 5.00 IN x 2.00 IN x 0.540 IN

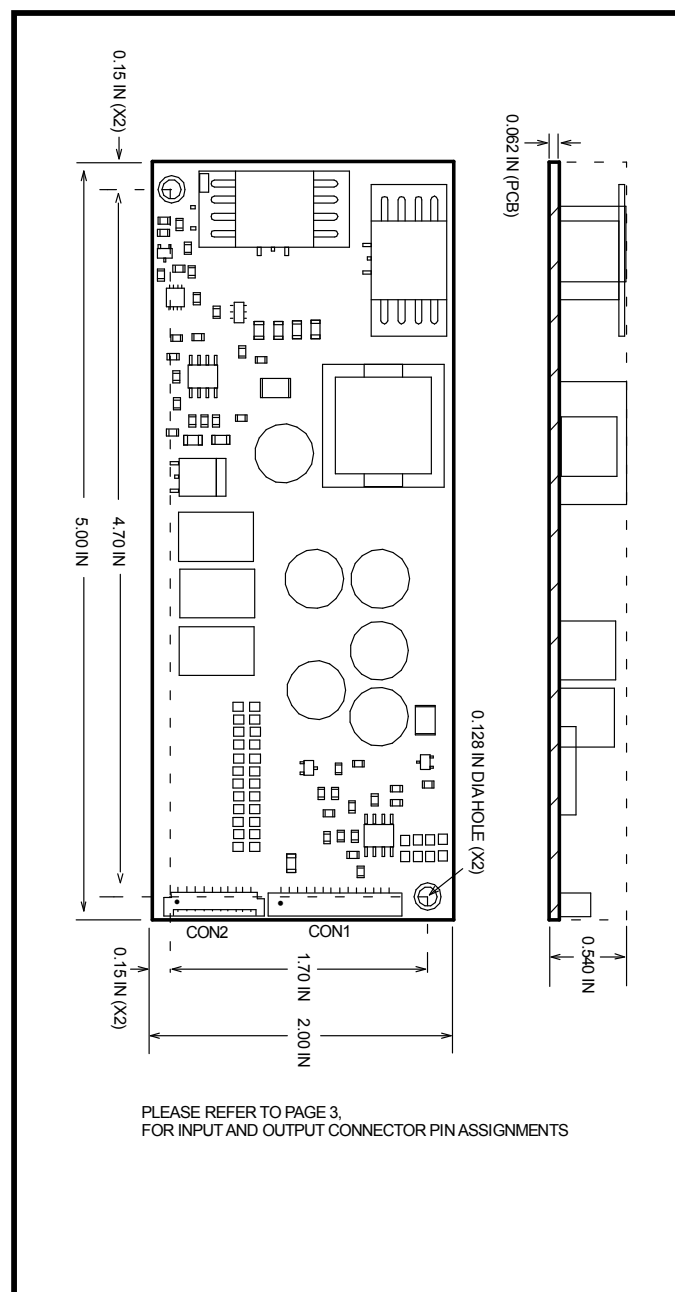
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connector = CON2

RoHS Compliant



## 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)       | 64          | 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 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 | 77   | Vdc  |
| Icctl  | LED Intensity Control Voltage                        | 0.25      | 4.75 | Vdc  |

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

## ELECTRICAL CHARACTERISTICS

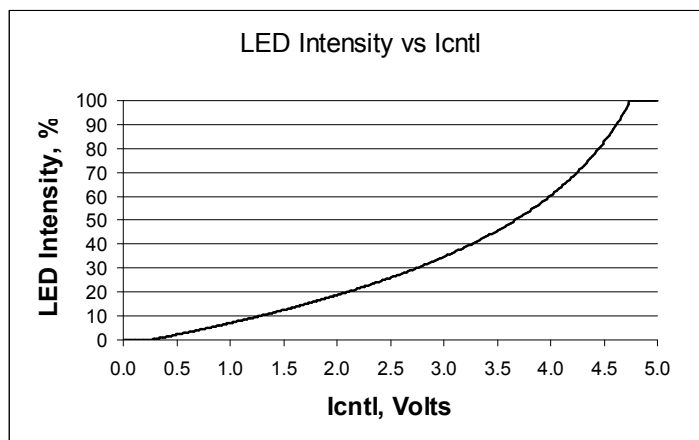
Vin = +12.0V, Vf = 77V, Icctl = +4.75V, Enable = +5V, unless otherwise specified.

| Symbol | Parameter                           | Test Conditions                | Min  | Nom | Max  | Unit |
|--------|-------------------------------------|--------------------------------|------|-----|------|------|
| OCV    | Open Circuit Voltage                | No Load                        | 78   | 82  | 87   | Vdc  |
| Iout   | Output Current                      |                                | 627  | 660 | 693  | mAdc |
| Iadj   | Nominal Output Current Adjust Range | Icctl(Pin 10) <= 0.25V         | 0    |     |      | mAdc |
|        |                                     | Icctl(Pin 10) >= 4.75V         |      |     | 660  | 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 13) | 4.75 | 5.0 | 5.25 | Vdc  |
| Iin    | Input Current Draw                  |                                |      | 4.9 |      | Adc  |
| Iind   | Input Current Draw (Disabled)       | Enable (Pin 9) = 0V            |      |     | 0.06 | Adc  |
| Eff    | Electrical Efficiency               |                                |      | 87  |      | %    |

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#### BRIGHTNESS CURVE



#### INPUT AND OUTPUT CONNETOR PIN ASSIGNMENTS

| INPUT CONNECTOR<br>CON1<br>MOLEX 87438-1443 |                       | OUTPUT CONNECTOR<br>CON2<br>MOLEX 53261-1071 |                |
|---------------------------------------------|-----------------------|----------------------------------------------|----------------|
| PIN#                                        | FUNCTION              | PIN#                                         | FUNCTION       |
| 1                                           | +10.8 to +15.0V (PWR) | 1                                            | +LED (ANODE)   |
| 2                                           | +10.8 to +15.0V (PWR) | 2                                            | NC             |
| 3                                           | +10.8 to +15.0V (PWR) | 3                                            | NC             |
| 4                                           | +10.8 to +15.0V (PWR) | 4                                            | NC             |
| 5                                           | GND (PWR)             | 5                                            | NC             |
| 6                                           | GND (PWR)             | 6                                            | -LED (CATHODE) |
| 7                                           | GND (PWR)             | 7                                            | NC             |
| 8                                           | GND (PWR)             | 8                                            | NC             |
| 9                                           | ENABLE                | 9                                            | NC             |
| 10                                          | ICNTL                 | 10                                           | NC             |
| 11                                          | TBD                   |                                              |                |
| 12                                          | TBD                   |                                              |                |
| 13                                          | +5VDC REF OUT         |                                              |                |
| 14                                          | GND (SIGNAL OUT)      |                                              |                |