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ACI-2591

PRODUCT DATA SHEET

11/06/14

I-DRIVE 6, 41.6 WATT LED DRIVER

(Eight Channel 40V, 0-130mA per Channel)

GENERAL DESCRIPTION

The ACI-2591 represents the 6th generation of I-Drive technology used for powering LED backlights.

Operating as a true constant current source and capable of driving up to 8 banks of 13 LEDs in series. This driver provides a complete integrated solution that is regulated over an input voltage range from +10V to +18V 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, and is designed to work with the Digital View LCD Controller and Button Board (See page 4 for more information).

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

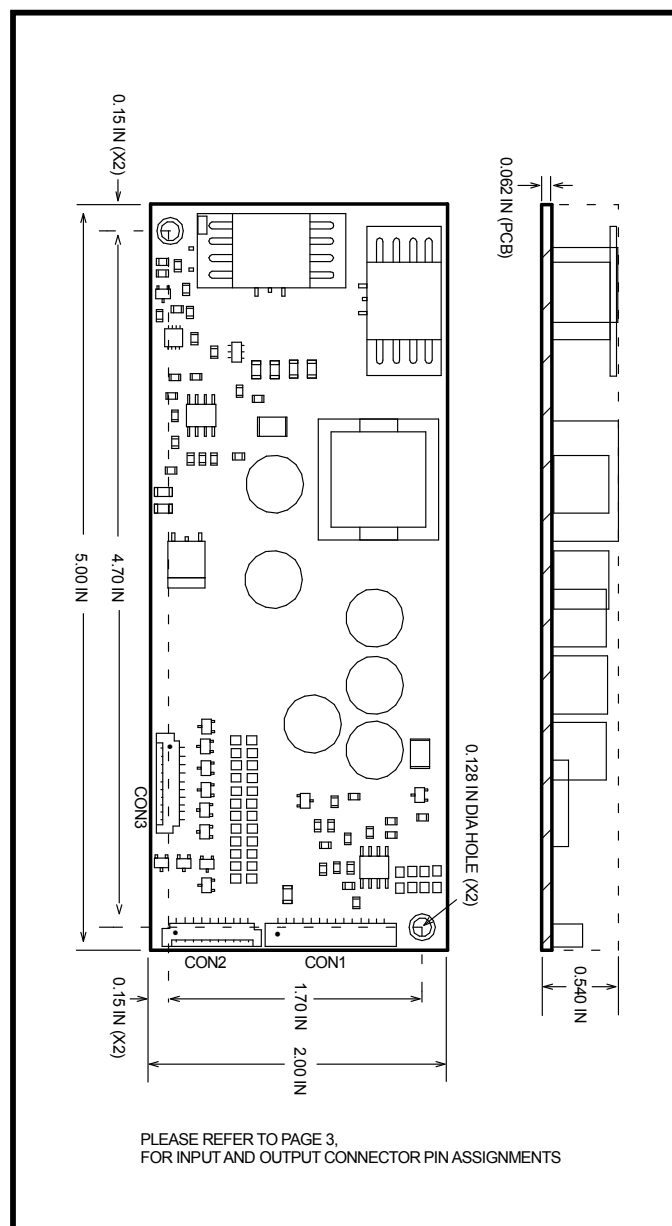
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connectors = CON2 and CON3

RoHS Compliant



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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)	54.0	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
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, Vf = 40V per channel, # of channels = 8, Icctl = +0.1V, 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 per Channel		123	130	137	mAdc
Iadj	Nominal Output Current Adjust Range Per Channel	Icctl(Pin 10) <= +0.1V			130	mAdc
		Icctl(Pin 10) >= +4.6V	0			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			3.9		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 9) = 0V			0.06	Adc
Eff	Electrical Efficiency			89		%

CAUTION: Due to high output current per channel, all eight channels must be used.

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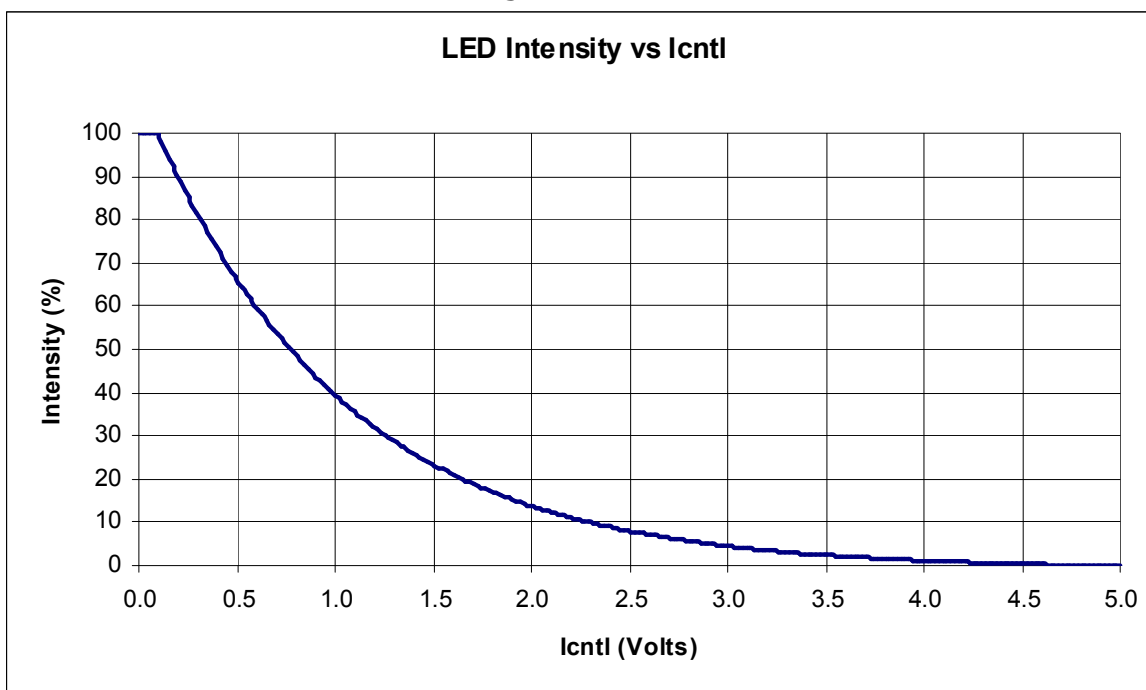
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INPUT AND OUTPUT CONNETOR PIN ASSIGNMENTS

INPUT CONNECTOR CON1 MOLEX 87438-1443	OUTPUT CONNECTOR CON2 MOLEX 53261-1071	OUTPUT CONNECTOR CON3 MOLEX 53261-1071
PIN# FUNCTION	PIN# FUNCTION	PIN# FUNCTION
1 +10 to +18V (PWR)	1 NC	1 NC
2 +10 to +18V (PWR)	2 +LED (ANODE)	2 +LED (ANODE)
3 +10 to +18V (PWR)	3 +LED (ANODE)	3 +LED (ANODE)
4 +10 to +18V (PWR)	4 +LED (ANODE)	4 +LED (ANODE)
5 GND (PWR)	5 +LED (ANODE)	5 +LED (ANODE)
6 GND (PWR)	6 -LED (CATHODE #1) (MASTER)*	6 -LED (CATHODE #5)
7 GND (PWR)	7 NC	7 NC
8 GND (PWR)	8 -LED (CATHODE #2)	8 -LED (CATHODE #6)
9 ENABLE	9 -LED (CATHODE #3)	9 -LED (CATHODE #7)
10 ICNTL	10 -LED (CATHODE #4)	10 -LED (CATHODE #8)
11 TBD		
12 TBD		
13 +5VDC REF OUT		
14 GND (SIGNAL OUT)		

*The Master Channel must always be used.

Brightness Curve



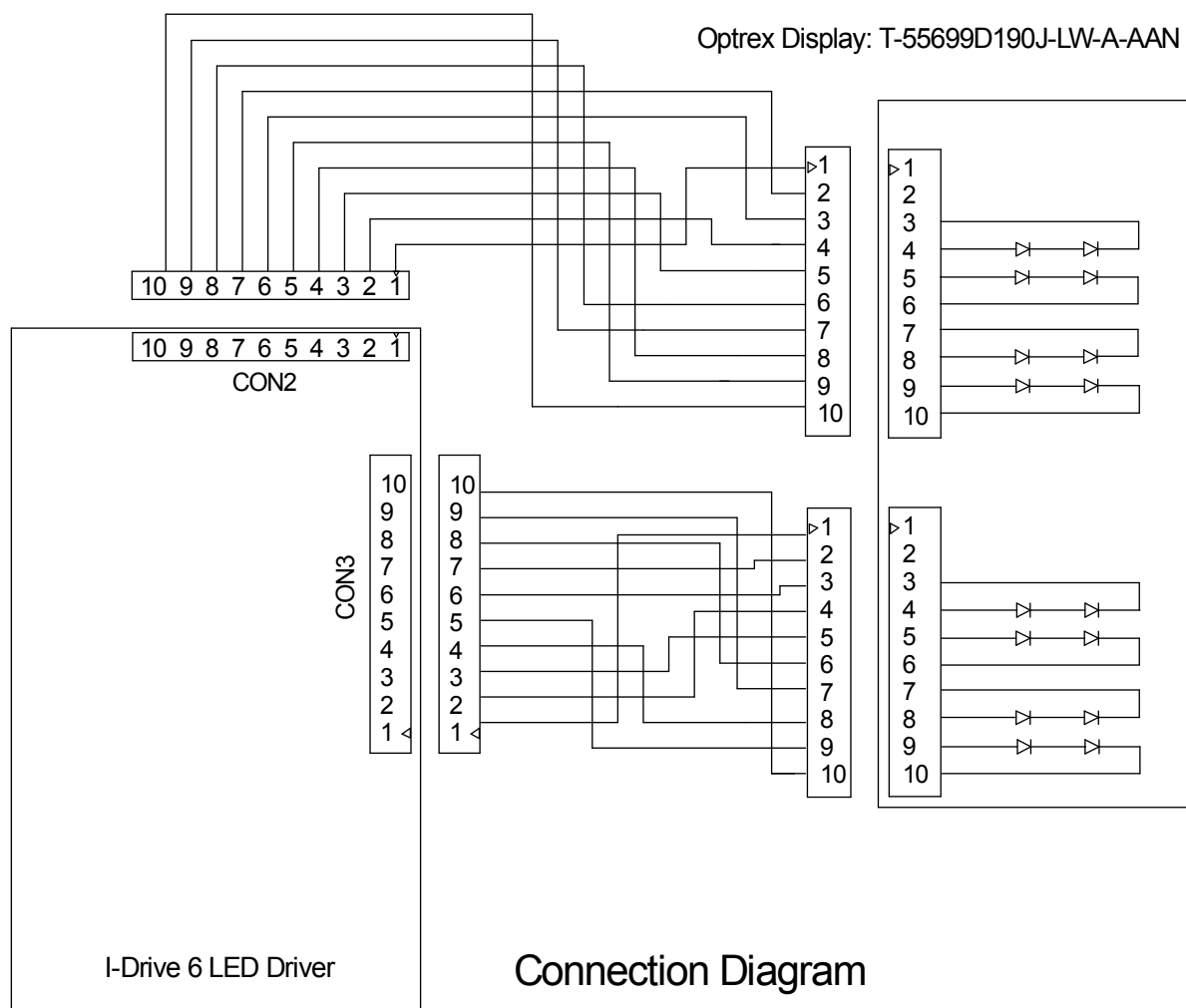
NOTE: The intensity response curve is designed to be compatible with the Digital View LCD Controller and Button Board.

Digital View LCD Controllers and Jumper Settings

LCD Controller		Jumper Settings
Model	P/N	
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)
SVX-1920	41721003X-3 or up	(JB1 = 1-2) (JB2 = 2-3) (JB3 = 1-2) (JB5 = 1-2)

Output Cable Assembly P/N 27-R0118
(2 per Display)

Optrex Display: T-55699D190J-LW-A-AAN 19"



Connection Diagram