Applied Concepts
INNOVATION IN POWER CONVERSION TECHNOLOGY

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ACI-F090660-2517

PRODUCT DATA SHEET

11/5/19

I-DRIVE 6, 59.4 WATT LED DRIVER

(Single Channel, 90V, 0-660mA)

GENERAL DESCRIPTION

The ACI-F090660-2517 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 1 rail of series connected LEDs with a forward voltage drop up to 90V. This driver provides a complete integrated solution that is regulated over an input voltage range from +20V to +28V 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 3 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

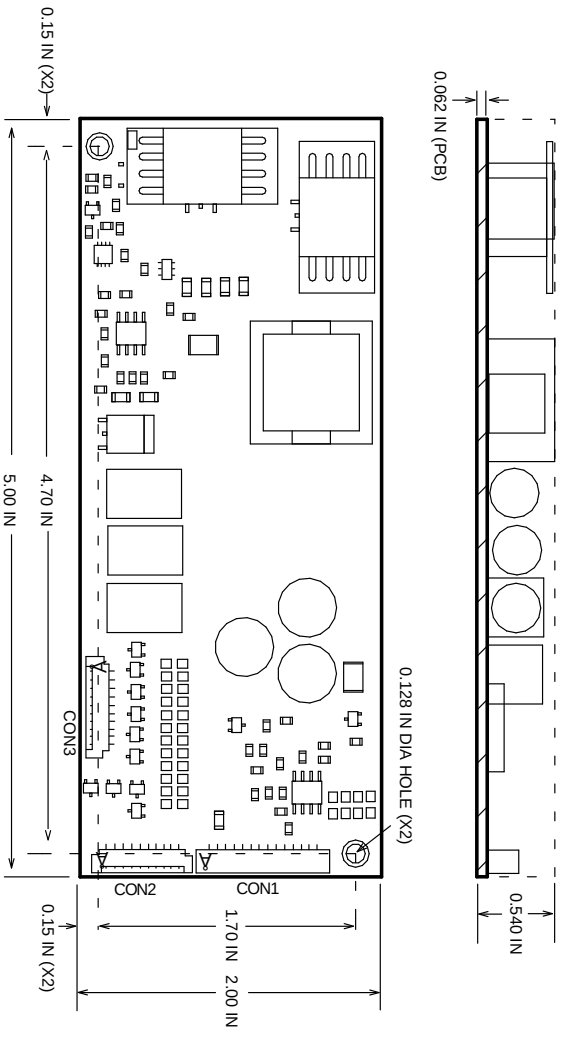
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connector = CON2

RoHS Compliant



PLEASE REFER TO PAGE 3,
FOR INPUT AND OUTPUT CONNECTOR PIN ASSIGNMENTS

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MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.7 to 30	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)	74.6	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)	20.0	28.0	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	**Vin + 1	90	Vdc
Icntl	LED Intensity Control Voltage	0.1	4.6	Vdc

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

ELECTRICAL CHARACTERISTICS

Vin = +24.0V, Vf = 90V per channel, # of channels = 1, Icntl = +0.1V, Enable = +5V unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	105	110	115	Vdc
Iout	Output Current per Channel		627	660	693	mAdc
Iadj	Nominal Output Current Adjust Range	Icntl(Pin 10) <= 0.1V			660	mAdc
		Icntl(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			2.7		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 9) = 0V			0.06	Adc
Eff	Electrical Efficiency			92		%

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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 1 +20.0 to +28.0V (PWR) 2 +20.0 to +28.0V (PWR) 3 +20.0 to +28.0V (PWR) 4 +20.0 to +28.0V (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 OUT)	PIN# FUNCTION 1 +LED (ANODE) 2 NC 3 NC 4 NC 5 NC 6 -LED (CATHODE #1) MASTER* 7 NC 8 NC 9 NC 10 NC	(NOT USED)

*The Master Channel must always be used.

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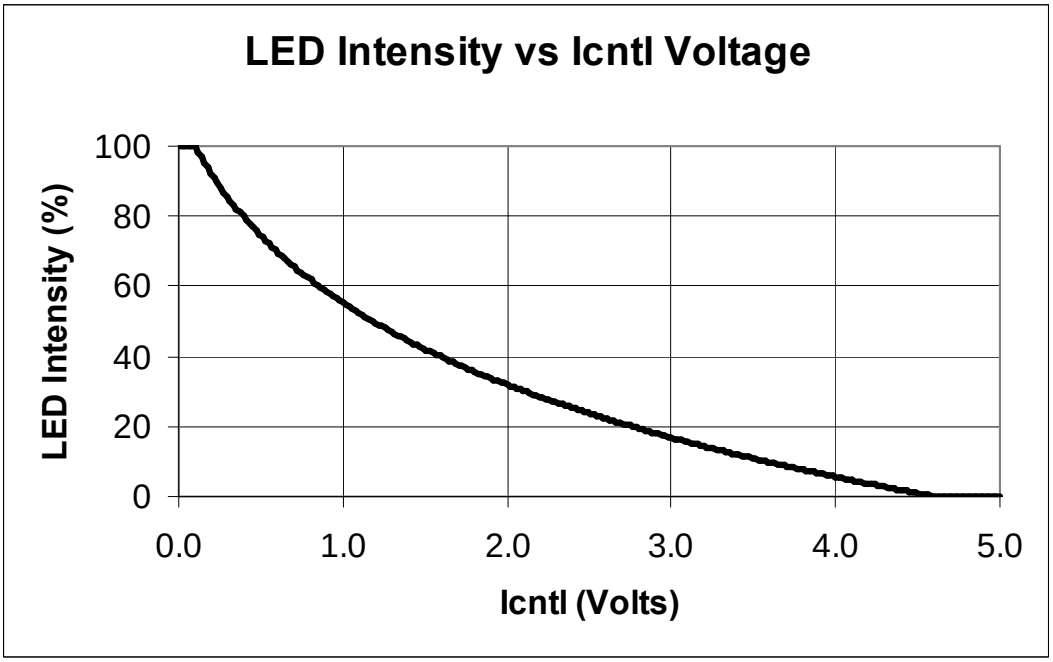
BRIGHTNESS CURVE



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
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)