Applied Concepts
INNOVATION IN POWER CONVERSION TECHNOLOGY

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ACI-C120105-2512

PRODUCT DATA SHEET

06/05/14

I-DRIVE 3, 12.6 WATT LED DRIVER
(Single Channel 120V, 0-105mA)

GENERAL DESCRIPTION

The ACI-C120105-2512 represents the 3rd 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.

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 = 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

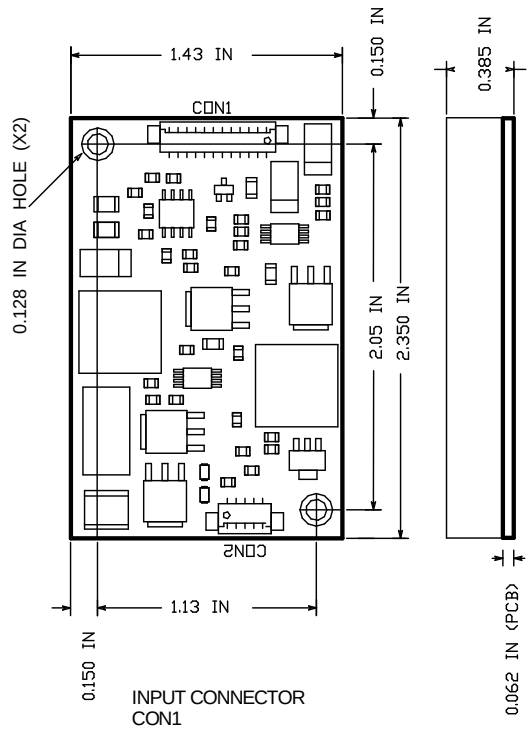
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connector = CON2

RoHS Compliant



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)

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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)	16.9	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	0.1	4.6	Vdc

ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 120Vdc, Icntl = +0.1V, 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		100	105	110	mAdc
Iadj	Nominal Output Current Adjust Range	Icntl(Pin 8)= +4.6V to +0.1V	0		105	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			1.2		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 7) = 0V			0.06	Adc
Eff	Electrical Efficiency		86			%

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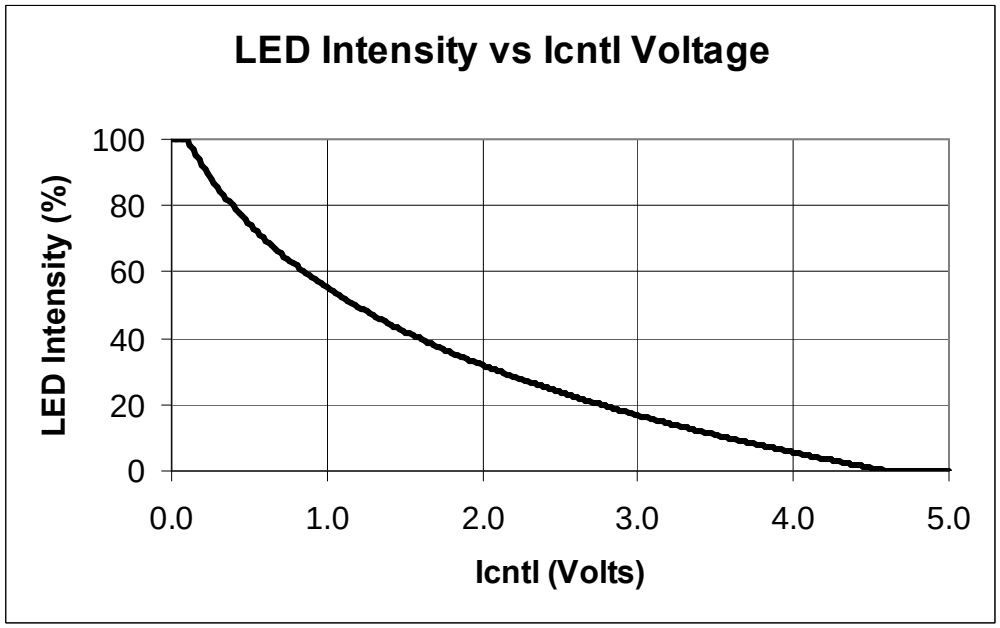

NOTE: The intensity response curve is designed to be compatible with the Digital View LCD Controller and Button Board.

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)