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I-DRIVE 5, 28.4 WATT LED DRIVER

(Single Channel 90V, 0-315mA)

GENERAL DESCRIPTION

The ACI-3115 represents the 5th 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 90V. This driver provides a complete integrated solution that is regulated over an input voltage range from +10V to +15V.

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 = 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 Connector = CON2

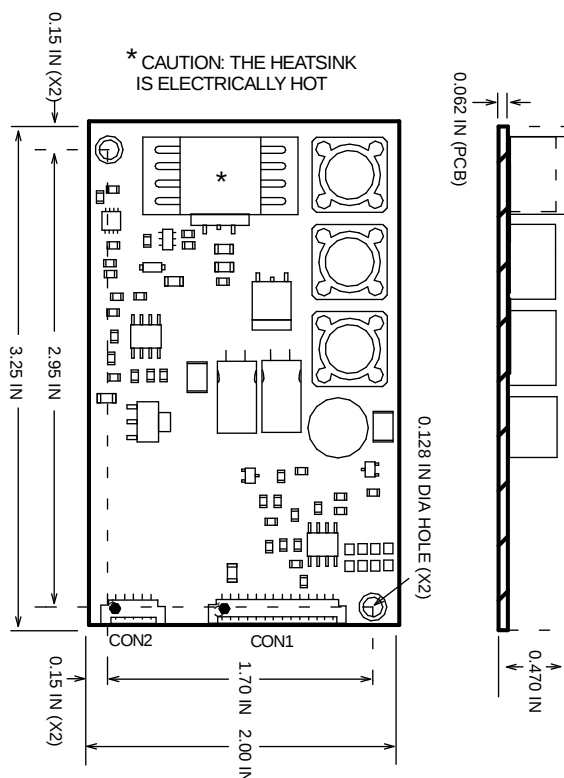
PCB Conformally Coated with Humiseal 1B73

RoHS Compliant

ACI-3115

PRODUCT DATA SHEET

07/08/22



INPUT CONNECTOR

CON1

MOLEX 53261-1471

PIN# FUNCTION

1	+10 to +15V (PWR)
2	+10 to +15V (PWR)
3	+10 to +15V (PWR)
4	+10 to +15V (PWR)
5	GND (PWR)
6	GND (PWR)
7	GND (PWR)
8	GND (PWR)
9	ENABLE
10	ICNTL / PWMcntl
11	NC (RESERVED FOR FUTURE USE)
12	NC (RESERVED FOR FUTURE USE)
13	+5VDC REF OUT
14	GND (SIGNAL)

OUTPUT CONNECTOR

CON2

MOLEX 53261-0571

PIN# FUNCTION

1	+ LED (ANODE)
2	+ LED (ANODE)
3	NC
4	- LED (CATHODE)
5	- LED (CATHODE)

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)	37.7	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

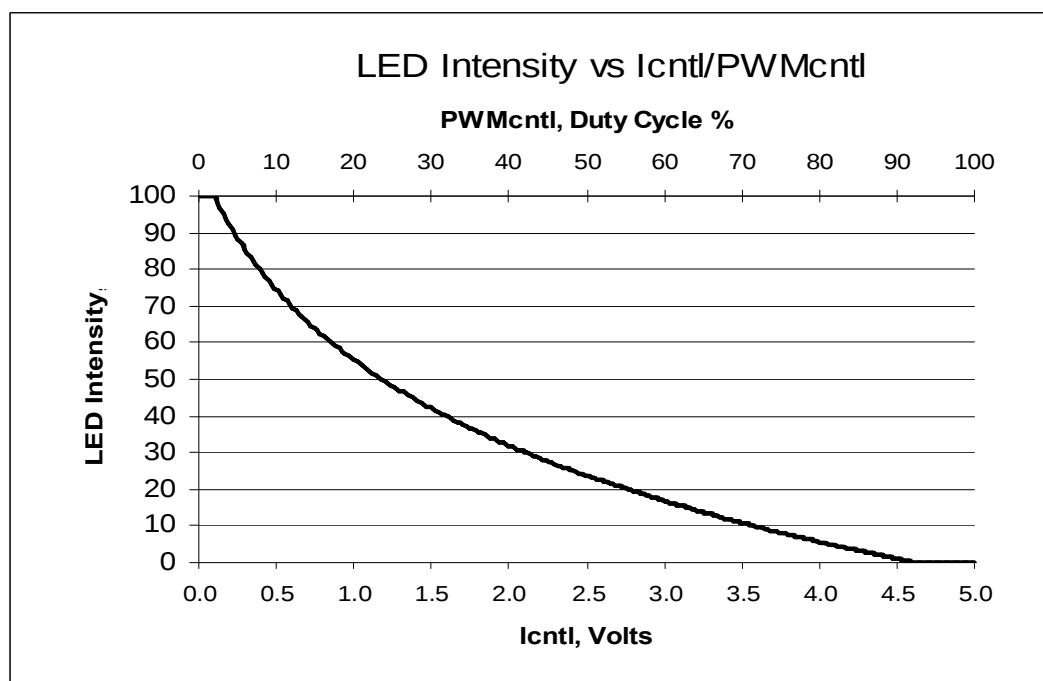
Symbol	Parameter	Min	Max	Unit
Vin	Supply Voltage (Referenced to Ground)	10.0	15.0	Vdc
VinShutDown	Supply Voltage Shut Down (Referenced to Ground)	9.3	9.7	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	**Vin + 1	90	Vdc
Icntl	LED Intensity Control Voltage Range (User Supplied Input)	0.1	4.6	Vdc
PWMcntl	Intensity Control PWM Duty-Cycle Range (User Supplied Input)	0	100	%
PWMfreq	Intensity Control PWM Frequency Range (User Supplied Input)	100	1000	Hz

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

ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 90V, Icntl = +0.1V, Enable = +5V, +5Vref = +5.0V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	133	140	147	Vdc
Iout	Output Current		299	315	331	mAdc
Iadj	Nominal Output Current Adjust Range	Icntl(Pin 10) <= +0.1 or PWMcntl(Pin 10) = 0%			315	mAdc
		Icntl(Pin 10) >= +4.6V or PWMcntl(Pin 10) = 100%	0			mAdc
PWMhi	PWM High Signal Level (V _{IH})		4.6			Vdc
PWMlo	PWM Low Signal Level (V _{IL})				0.1	Vdc
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			2.4		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 9) = 0V			0.06	Adc
Eff	Electrical Efficiency			87		%



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)