

ACI-3014

PRODUCT DATA SHEET

07/15/2020

I-DRIVE 8, 76 WATT LED DRIVER

(50V, 16 Channels Utilizing Custom Output Cable, 95mA per Channel)

GENERAL DESCRIPTION

The ACI-3014 represents the 8th generation of I-Drive technology used for powering LED backlights.

The ACI-3014 operates as a true constant current source and is capable of driving up to 16 parallel banks of series connected LEDs with a forward voltage drop up to 50V. This driver provides a complete integrated solution that is regulated over an input voltage range from +20.0V to +28.0V.

Simple to connect and operate, this driver solution is capable of providing precise control to support wide dimming applications. The driver is also designed to work with a 16 channel output cable **27-R0331** for proper current sharing.

This unit features enable and intensity control inputs.

MECHANICAL/ENVIRONMENTAL

Weight = 84.5 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 120mm x 100mm x 7.35mm

Size (L x W x H) = 4.72 IN x 3.94 IN x 0.289 IN

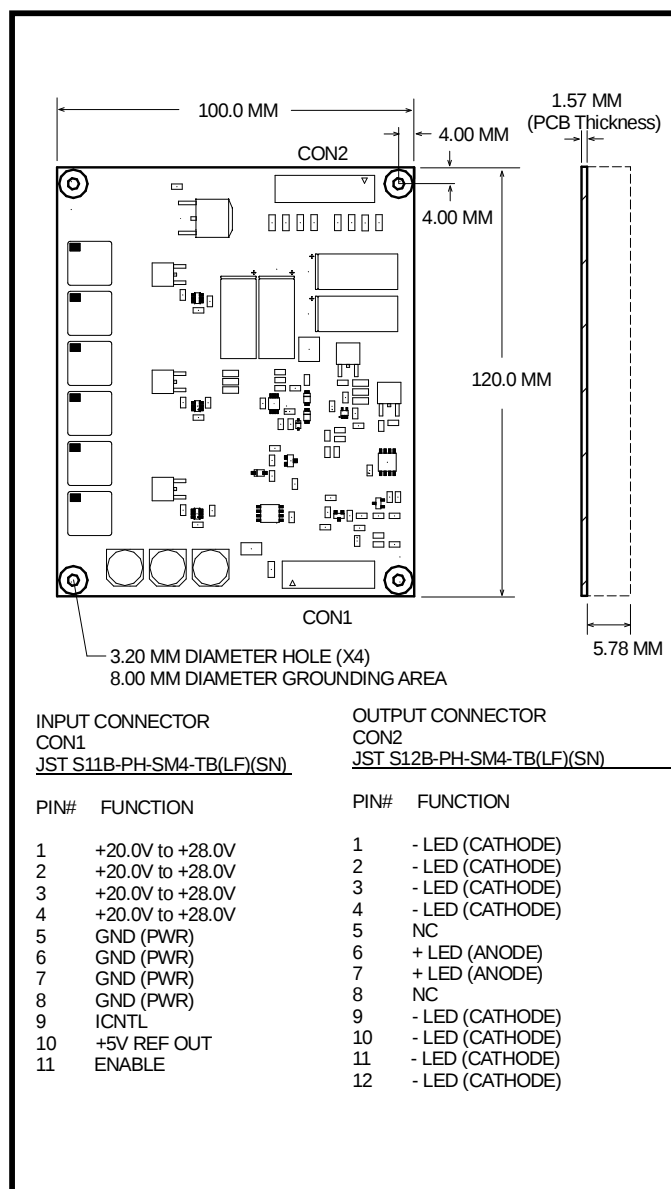
PCB thickness = 1.57 mm (0.062 IN)

Mounting Holes = 3.2 mm diameter (X4)

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 30	Vdc
Vip	Voltage applied to Enable (Pin 11) (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)	98	W
Top ¹	Operating Temperature (Measured at top of inductor L3) (Reference Figure 1, page 3)	-30 to +100	°C
Tstg	Storage Temperature	-40 to +105	°C

*Maximum Ratings are those values beyond which damage to the driver may occur.

¹ Adequate thermal management of driver must be provided (Reference Figure 1, page 3).

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	50	Vdc
Icntl	Intensity Control Voltage Range (User Supplied Input)	0.25	4.75	Vdc

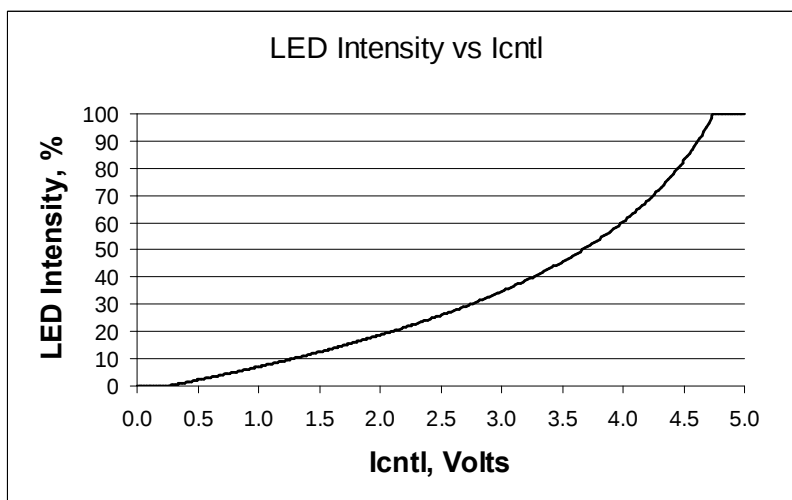
**Vin must be less than the minimum Forward-Drop Voltage (Vf).

ELECTRICAL CHARACTERISTICS

Vin = +24.0V, Vf = 50V, # of Channels = 16, Icntl = 4.75V, Enable = +5V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	69	73	77	Vdc
Iout	Output Current per Channel	Using 16 Channel Output Cable 27-R0331	90	95	100	mAdc
Iadj	Nominal Output Current Adjust Range Per Channel	Icntl(Pin 9) <= 0.25V	0			mAdc
		Icntl(Pin 9) >= 4.75V			95	mAdc
ENoff	Enable Control, Unit Off				0.8	Vdc
ENon	Enable Control, Unit ON		2.0			Vdc
+5Vref	+5V Output Reference Voltage	1K Ohm Load to Ground (Pin 10)	4.75	5.0	5.25	Vdc
Iin	Input Current Draw			3.5		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 11) = 0V			0.06	Adc
Eff	Electrical Efficiency			90		%

BRIGHTNESS CURVE



For thermal management, mount LED Driver upside down, as shown in Figure 1.
Sandwich thermally conductive material between top of inductors and aluminum chassis.
The objective is to pull heat away from the LED Driver, so that it does not exceed its maximum operating temperature (Top) specification.

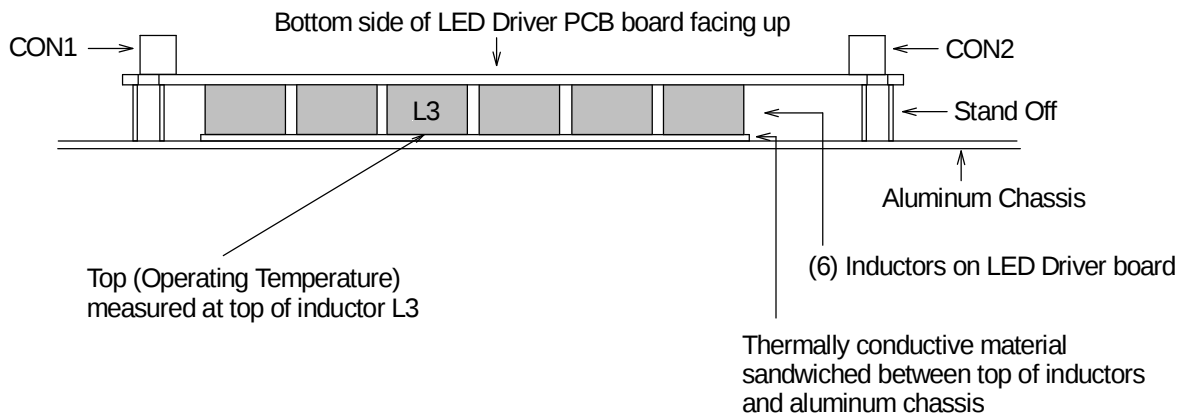


FIGURE 1. - Thermal Management (Side View)