

I-DRIVE 5, 3.4 WATT LED DRIVER (50V, One to Four Channels)

GENERAL DESCRIPTION

The ACI-2756 represents the 5th generation of I-Drive technology used for powering LED backlights.

Operating as a true constant current source and capable of driving up to 4 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 of +10V to +18V.

Please refer to Table 1 on page 3, for the maximum output current per channel, based on the number of channels connected.

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, mode & intensity control inputs.

MECHANICAL/ENVIRONMENTAL

Weight = 39.3 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 3.29 IN x 2.04 IN x 0.510 IN

PCB thickness = 0.062 IN

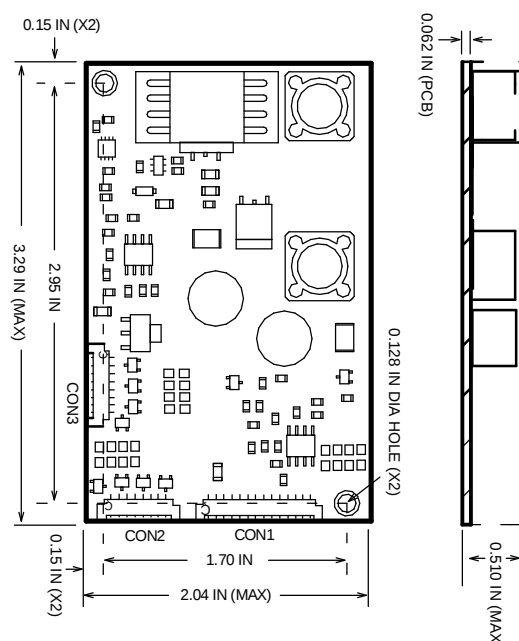
Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connectors = CON2

RoHS Compliant

This unit is conformal-coated with Insulcast 116FR



OVERALL MAX DIMENSIONS INCLUDE INSULCAST COATING.
MOUNTING HOLES COATED WITH INSULCAST.

INPUT CONNECTOR

CON1
MOLEX 53261-1471

PIN#	FUNCTION
1	+10 to +18V (PWR)
2	+10 to +18V (PWR)
3	+10 to +18V (PWR)
4	+10 to +18V (PWR)
5	GND (PWR)
6	GND (PWR)
7	GND (PWR)
8	GND (PWR)
9	ENABLE
10	ICNTL
11	MODE
12	TBD
13	+5VDC REF OUT
14	GND (SIGNAL)

OUTPUT CONNECTOR

CON2
MOLEX 53261-0871

PIN#	FUNCTION
1	+ LED (ANODE)
2	+ LED (ANODE)
3	+ LED (ANODE)
4	+ LED (ANODE)
5	- LED (CATHODE 1) Master*
6	- LED (CATHODE 2)
7	- LED (CATHODE 3)
8	- LED (CATHODE 4)

*The Master Channel must always be used.

OUTPUT CONNECTOR
CON3
MOLEX 53261-0871

DO NOT USE

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)	4.5	W
Top	Operating Temperature (Still air ambient around Driver)	-30 to +70	°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	50	Vdc
Icntl	LED Intensity Control Voltage	0	10	Vdc

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

ELECTRICAL CHARACTERISTICS

Vin = +12V, Vf = 50V, # of Channels = 4, Icntl = 0V, Enable = +5V, Mode = 0V unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	55	60	65	Vdc
Iout	Output Current per Channel		16	17	18	mAdc
Iadj	Nominal Output Current Adjust Range	Icntl(Pin 10) >= 9.9V	0			mAdc
		Icntl(Pin 10) <= 0.1V			17	mAdc
ENoff	Enable Control, Unit Off				0.5	Vdc
ENoff	Enable Control, Unit Off	Pin 9 Floating				
ENon	Enable Control, Unit On		2.0			Vdc
MODEoff	Mode Control, Unit Off		2.0			Vdc
MODEoff	Mode Control, Unit Off	Pin 11 Floating				
MODEon	Mode Control, Unit On				0.5	Vdc
+5Vref	+5V Output Reference Voltage	1K Ohm Load to Ground (Pin 13)	4.75	5.0	5.25	Vdc
Iin	Input Current Draw			0.325		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 9) = 0V			0.06	Adc
Eff	Electrical Efficiency			87		%

Number of Channels Connected	1	2	3	4
Maximum Output Current per Channel (mA)	68	34	22.7	17

Table 1 - Maximum Output Current per Channel, based on the number of channels connected

Pin 5 of CON2 is the Master Channel and must always be used.

BRIGHTNESS CURVE

