

I-DRIVE 5, 19.25 WATT LED DRIVER (Dual Channel 35V, 0-275mA per Channel)

GENERAL DESCRIPTION

The ACI-2828 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 2 banks of series connected LED's with a forward voltage drop up to 35V. This driver provides a complete integrated solution that is regulated over an input range of +10V to +18V.

Simple to connect and operate, this driver solution is capable of providing precise control to support dimming applications.

This unit is designed for Touch Intl/GMS.

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

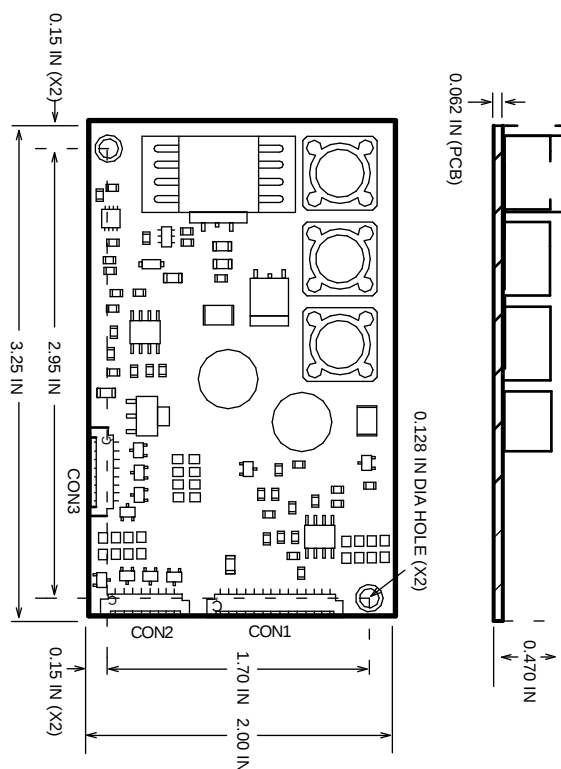
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connectors = CON2 and CON3

RoHS Compliant



INPUT CONNECTOR

CON1

MOLEX 53261-1471

OUTPUT CONNECTORS

CON2, CON3

MOLEX 53261-0871

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	TBD
12	TBD
13	+5VDC REF OUT
14	GND (SIGNAL)

PIN# FUNCTION

1	+ LED (ANODE)
2	+ LED (ANODE)
3	NC
4	NC
5	- LED (CATHODE1) MASTER*
6	- LED (CATHODE2)
7	NC
8	NC

* The Master Channel must always be used

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)	26	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

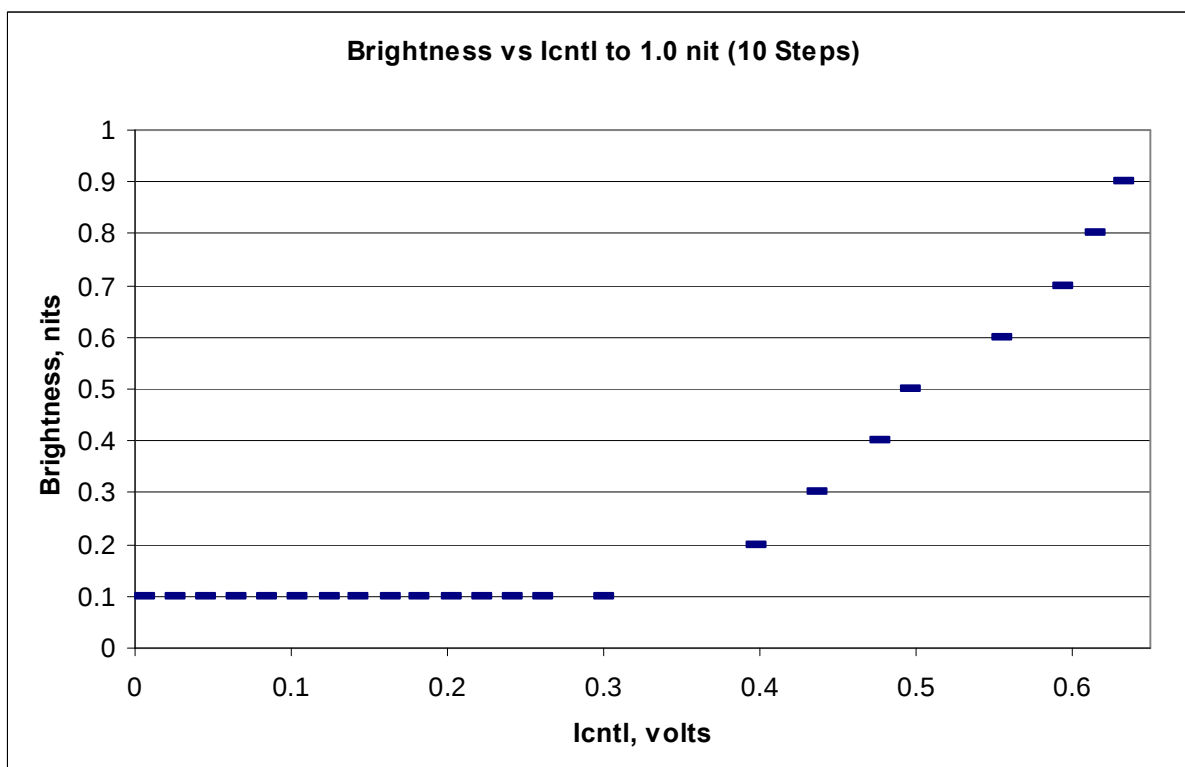
Symbol	Parameter	Min	Max	Unit
Vin	Supply Voltage (Referenced to Ground)	10.0	18.0	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	**Vin + 1	35	Vdc
Icctl	LED Intensity Control Voltage	0	5	Vdc

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

ELECTRICAL CHARACTERISTICS

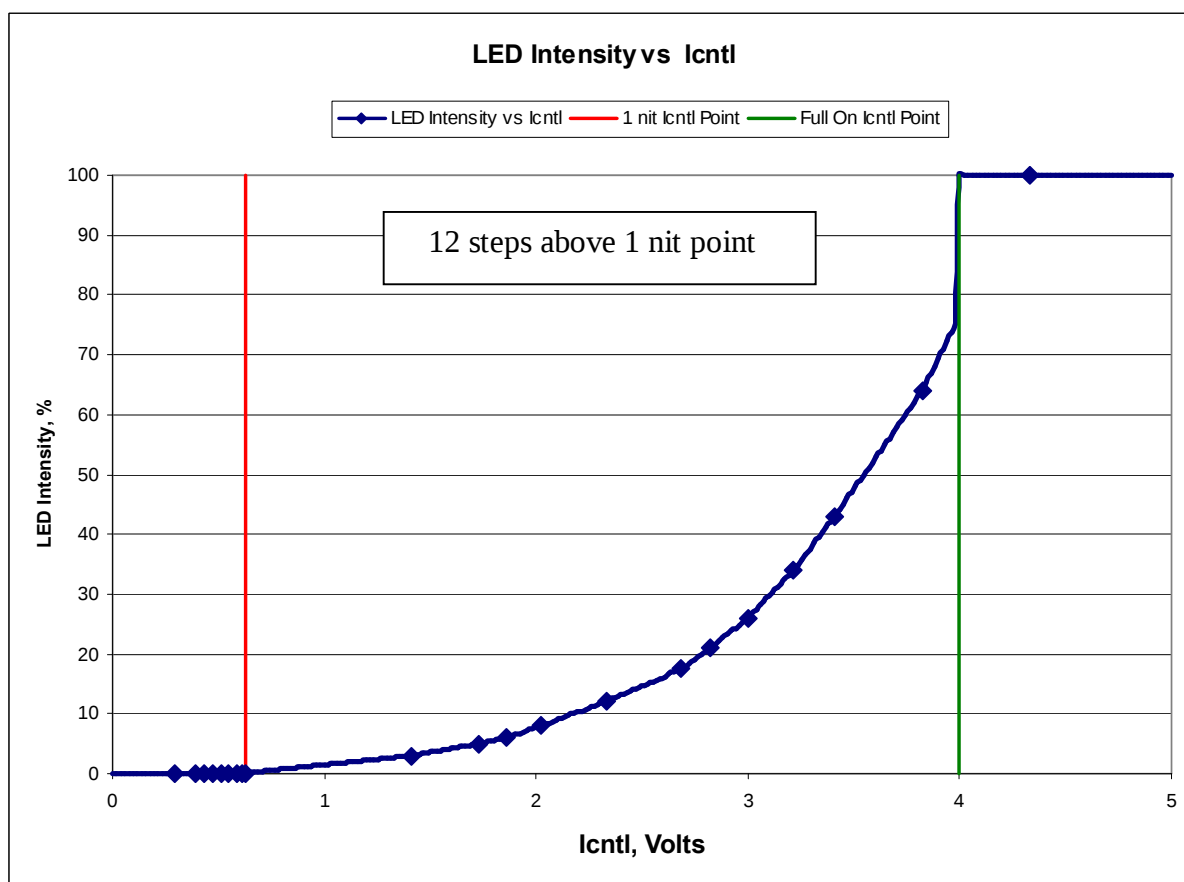
Vin = +12V, Vf = 35V per channel, # of channels = 2, Icctl = GMS Index 29, Enable = +5V unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	40	45	50	Vdc
Iout	Output Current per Channel		261	275	289	mAdc
Iadj	Nominal Output Current Adjust Range	Icctl(Pin 10) = GMS Index 1 to GMS Index 29	0.028		275	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)	4.9	5.0	5.1	Vdc
Iin	Input Current Draw			1.84		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 9) = 0V			0.06	Adc
Eff	Electrical Efficiency			87		%



Graph A

NOTE 1: Brightness based upon Display Enhancements provided by Touch International to Display Part # AUO G190ETN01.2. Brightness values used for reference purposes only.



Graph B

NOTE 2: Graph B Green Line shows that when $I_{cntl} \geq 4.0V$, the driver goes to 100% (Full On)

ACI-2828 Addendum to Datasheet
 8/1/2017
 Display: AUO G190ETN01.2 19"
 ID5P Solution

GMS Index	Icintl (V)	ACI Index	% of Full Brightness	*Theoretical Brightness
1	0.2979	1	0.01	0.1
2	0.3955	2	0.02	0.2
3	0.4004			
4	0.4297	3	0.03	0.3
5	0.4346			
6	0.4639	4	0.04	0.4
7	0.4688			
8	0.4980	5	0.05	0.5
9	0.5029			
10	0.5371	6	0.06	0.6
11	0.5420			
12	0.5762	7	0.07	0.7
13	0.5811			
14	0.6055	8	0.08	0.8
15	0.6104			
16	0.6250	9	0.09	0.9
17	0.6299			
18	1.4209	10	3	30
19	1.7285	11	5	50
20	1.8604	12	6	60
21	2.0166	13	8	80
22	2.3242	14	12	120
23	2.6904	15	18	180
24	2.8320	16	21	210
25	3.0078	17	26	260
26	3.2129	18	34	340
27	3.4180	19	43	430
28	3.8184	20	64	640
29	4.3311	21	100	1000

*Brightness values For Reference Purposes Only