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ACI-3187

PRODUCT DATA SHEET

03/04/22

I-LITE, 5.0 WATT LED DRIVER

(Common-Cathode, Six Channels¹)

GENERAL DESCRIPTION

The ACI-3187 is designed to drive up to 6 parallel channels of series connected LEDs. Each series channel can provide an adjustable 0 to 21mA max of output current into a maximum forward voltage of 40V. Additional ranges are supported via the 4 position rotary switch.

Operating as a true constant current source, the driver provides a complete integrated solution that operates from a nominal +8 to +17 VDC source.

Simple to connect and operate, the driver solution is capable of providing precise control to support dimming applications of over 5,000 to 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 = 7.2 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 2.0 IN x 0.95 IN x 0.285 IN

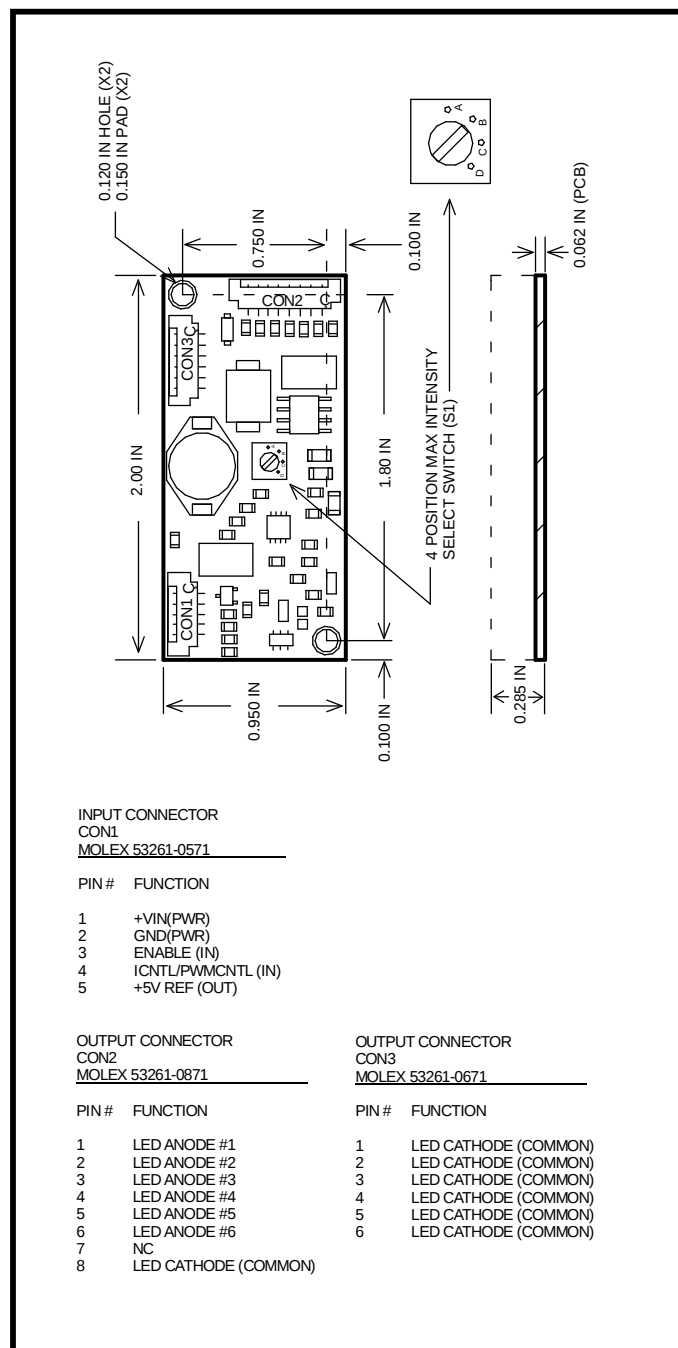
PCB thickness = 0.062 IN

Mounting Holes = 0.120 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connectors = CON2 and CON3

RoHS Compliant



¹ When using less than the total number of channels available, refer to I-Lite Application Note.

MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.3 to 18	Vdc
Vip	Voltage applied to any Input Pin (Referenced to Ground)	-0.3 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)	6.4	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 LED driver may occur.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
Vin	Supply Voltage (Referenced to Ground)	8	17	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	18	36	Vdc
Icntl	LED Intensity Control Voltage	0.1	4.6	Vdc
PWMcntl	Intensity Control PWM Frequency Range (User Supplied Input)	100	1000	Hz

ELECTRICAL CHARACTERISTICS

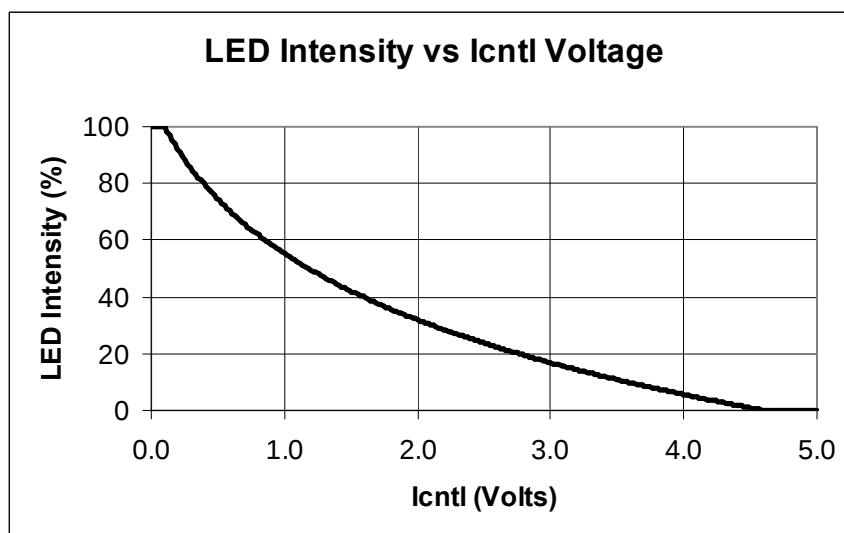
Vin = +12V, Vf = 34V per channel, # of channels = 6, Icntl = +0.1V or 0%, Enable = +5V, S1 = A, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	45	50	55	Vdc
Iout-a	Output Current per Channel, Setting A	Switch S1 = A	18.7	20.8	22.9	mADC
Iout-b	Output Current per Channel, Setting B	Switch S1 = B	13.5	15	16.5	mADC
Iout-c	Output Current per Channel, Setting C	Switch S1 = C	11.3	12.5	13.8	mADC
Iout-d	Output Current per Channel, Setting D	Switch S1 = D	7.5	8.3	9.1	mADC
Icntl	Nominal Output Current per Channel Adjustable Range Per Channel	Icntl (Pin 4) >= +4.6V or PWMcntl (Pin 4) = 100%	0			mADC
		Icntl (Pin 4) <= 0.1V or PWMcntl (Pin 4) = 0%			20.8	
PWMhi	PWM Signal Level High (V _{IH})		4.6			Vdc
PWMlo	PWM Signal Level Low (V _{IL})				0.1	Vdc
ENoff	Enable Control, Unit Off	Enable (Pin 3)			0.5	Vdc
ENon	Enable Control, Unit ON	Enable (Pin 3)	2.0			Vdc
+5Vref	+5V Output Reference Voltage	1K Ohm Load to Ground (Pin 5)	4.75	5.0	5.25	Vdc
Iin	Input Current Draw			0.40		
Iind	Input Current Draw (Disabled)	Enable (Pin 3) = 0V		0.001	0.06	Adc
Eff	Electrical Efficiency			90		%

Possible Configurations

Switch Setting (S1)	Number of LED Channels Connected					
	1	2	3	4	5	6
	Iout/ch (mA)	Iout/ch (mA)	Iout/ch (mA)	Iout/ch (mA)	Iout/ch (mA)	Iout/ch (mA)
A	125	62.5	41.7	31.3	25	20.8
B	90	45	30	22.5	18	15
C	75	37.5	25	18.8	15	12.5
D	50	25	16.7	12.5	10	8.3

TABLE1. – Output Current per Channel, based on Switch (S1) Setting and Number of Channels Connected.



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)