

ACI-3092

PRODUCT DATA SHEET

04/18/23

I-DRIVE, 3.8 WATT LED DRIVER

(19V, 4 Channels, 0-50mA per channel)

GENERAL DESCRIPTION

The ACI-3092 is an exact drop-in replacement, in terms of form, fit and function to the **NLT 65PW01F** LED Driver, with improved efficiency.

The ACI-3092 operates as a true constant current source and is capable of driving up to four channels of series connected LEDs with a forward voltage drop up to 19V. This driver provides a complete integrated solution that is regulated over an input voltage range from +10 to +15VDC.

This unit features enable and three types of intensity control inputs.

MECHANICAL/ENVIRONMENTAL

Weight = 7.3 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 77.5mm x 25.0mm x 6.4mm

Size (L x W x H) = 3.05 IN x 0.98 IN x 0.25 IN

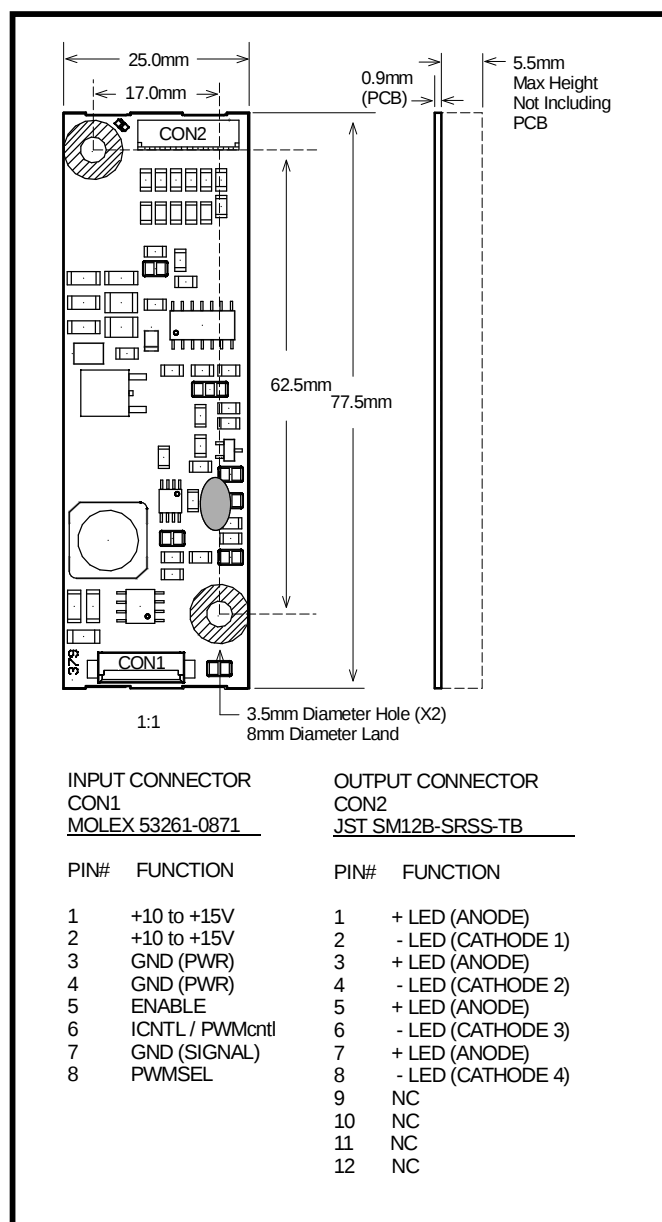
PCB thickness = 0.9 mm (0.035 IN)

Mounting Holes = 3.5mm diameter (X2)

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 18	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)	5.0	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
Vf	Series Connected Cumulative LED Forward-Drop Voltage	**Vin + 1	19	Vdc
Icntl	Iout Control (using Voltage control method) (User Supplied Input)	0	2.5	Vdc
	Iout Control (using Resistor control method) (User Supplied Input)	0	10K	Ohm
PWMcntl	Iout Control (using PWM control method)	0	100	%
	PWM Duty-Cycle Range (User Supplied Input)			
PWMfreq	PWM Frequency Range (User Supplied Input)	100	1000	Hz

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

ELECTRICAL CHARACTERISTICS

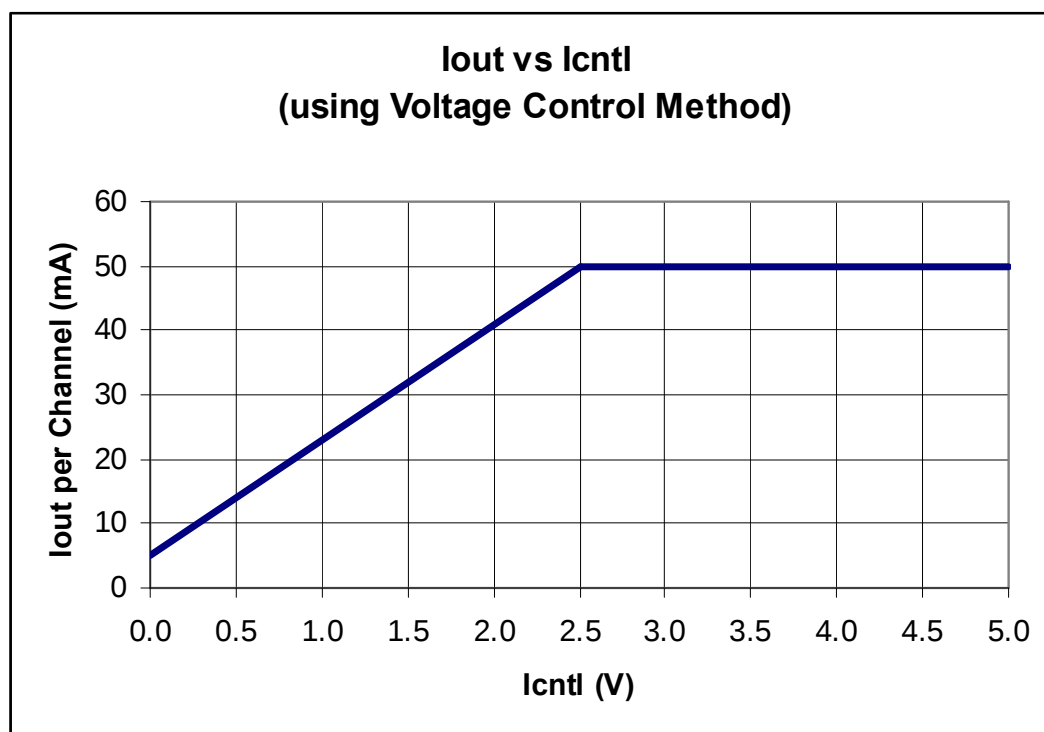
Vin = +12V, Vf = 19V per channel, # of channels = 4, PWMSEL = +5V, Icntl = +2.5V, Enable = +5V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	40	45	50	Vdc
Iout	Output Current per Channel	4 Channels Connected	45	50	55	mAdc
Iadj	Nominal Output Current Adjust Range Per Channel	Icntl (Pin 6) = 0V or Icntl (Pin 6) = 0 Ohms or PWMcntl (Pin 6) = 0%	5			mAdc
		Icntl (Pin 6) >= +2.5V or Icntl (Pin 6) >= 7K Ohms or PWMcntl (Pin 6) = 100%			50	mAdc
PWMcntl	PWM Control Input High Signal Level (V _{IH})		2.5			Vdc
PWMcntl	PWM Control Input Low Signal Level (V _{IL})				0.8	Vdc
PWMSEL	PWM Select Input High (V _{SH})		2.0			Vdc
PWMSEL	PWM Select Input Low (V _{SL})				0.5	Vdc
ENoff	Enable Control, Unit Off				0.5	Vdc
ENon	Enable Control, Unit ON		2.0			Vdc
Iin	Input Current Draw			0.36		Adc
Iind	Input Current Draw (Disabled)	Enable (Pin 5) = 0V			0.06	Adc
Eff	Electrical Efficiency			89		%

Brightness Control Methods

1.0 Voltage Control

Pin No.	Symbol	Remarks
6	Icntl/PWMcntl	Apply 0-5VDC
8	PWMSEL	Leave Open or Apply +5VDC or Logic High



2.0 Resistor Control

Pin No.	Symbol	Remarks
6	Icntl/PWMcntl	Apply 0-10K Ohms Connect 10K Ohm POT, as shown in Figure 1.
8	PWMSEL	Leave Open or Apply +5VDC or Logic High

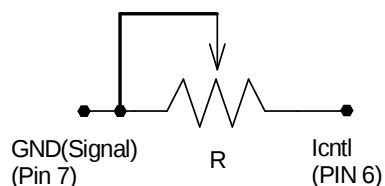
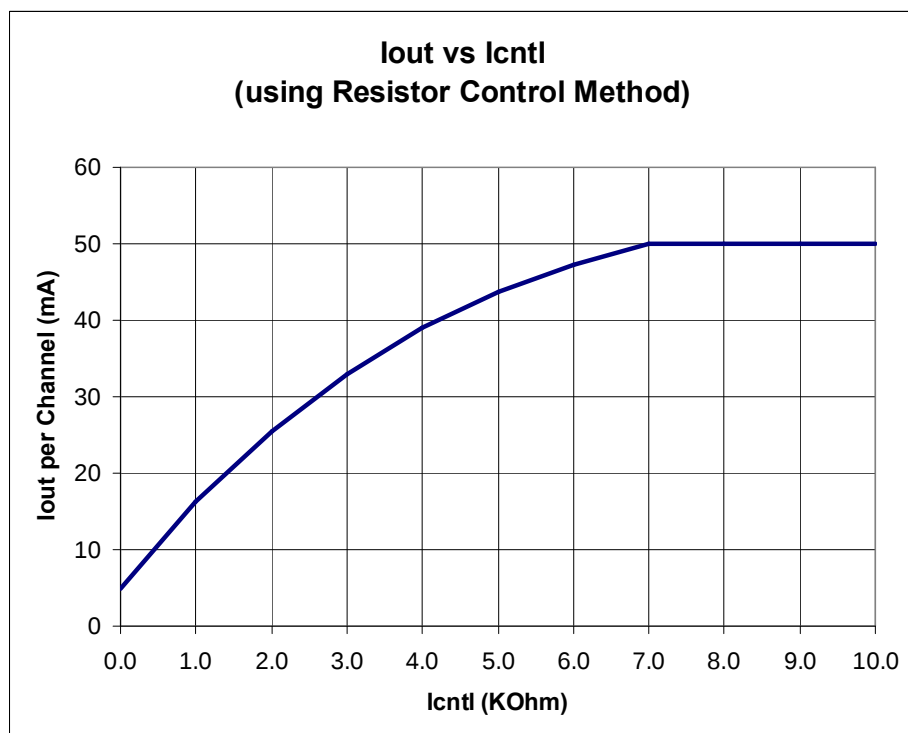


FIGURE 1 - Connecting 10K Ohm Potentiometer, when using Resistor Control Method



3.0 PWM Control

Pin No.	Symbol	Remarks
6	Icntl/PWMcntl	Apply 0-100% PWM Duty Cycle
8	PWMSEL	To enable external PWM control, PWMSEL (Pin 8) must be connected to GND Signal (Pin 7) or Logic Low

