

I-DRIVE 8, 40.3 WATT LED DRIVER

Dual Range, 120V, 4 Channels

0.00mA – 3.75mA per Channel (Low Range)

0.00mA – 84mA per Channel (High Range)

GENERAL DESCRIPTION

The ACI-2761 represents the 8th 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 120V. This driver provides a complete integrated solution that is regulated over an input voltage range from +21.6V to +26.4V.

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

This unit features enable, intensity and high/low range select 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 13.7mm

Size (L x W x H) = 4.72 IN x 3.94 IN x 0.540 IN

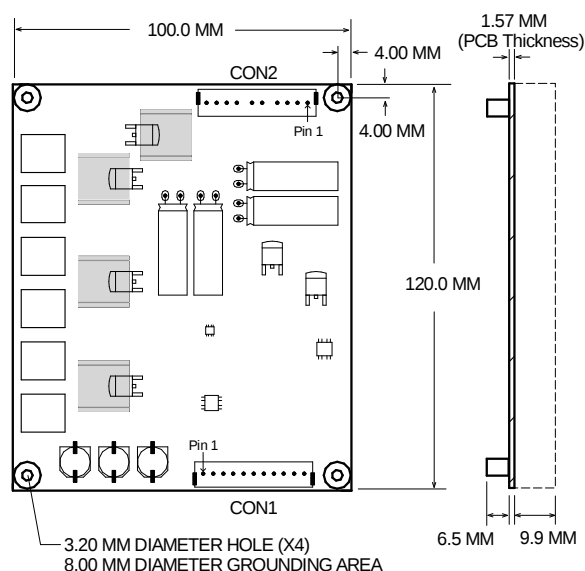
PCB thickness = 1.57 mm (0.062 IN)

Mounting Holes = 3.2 mm diameter (X4)

Input Power & Control Connector = CON1

LED Output Connector = CON2

RoHS Compliant



INPUT CONNECTOR CON1
JST S11B-PH-SM4-TB(LF)(SN)

OUTPUT CONNECTOR CON2
JST S12B-PH-SM4-TB(LF)(SN)

PIN#	FUNCTION	PIN#	FUNCTION
1	+21.6V to +26.4V	1	- LED (CATHODE 1) Master*
2	+21.6V to +26.4V	2	- LED (CATHODE 2)
3	+21.6V to +26.4V	3	NC
4	+21.6V to +26.4V	4	NC
5	GND (PWR)	5	NC
6	GND (PWR)	6	+ LED (ANODE)
7	GND (PWR)	7	+ LED (ANODE)
8	GND (PWR)	8	NC
9	PWMcntl	9	NC
10	Range Select	10	NC
11	ENABLE	11	- LED (CATHODE 3)
		12	- LED (CATHODE 4)

*The Master Channel must always be used.

MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.7 to 30	Vdc
Vip1	Voltage applied to PWMcntl (Pin 9) (Referenced to Ground)	-0.7 to +18	Vdc
Vip2	Voltage applied to Range Select (Pin 10) (Referenced to Ground)	-0.7 to 35	Vdc
Vip3	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)	49	W
Top ¹	Operating Temperature (Measured at top of inductor L3)	-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.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
Vin	Supply Voltage (Referenced to Ground)	21.6	26.4	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	**Vin + 1	120	Vdc
PWMcntl	Intensity Control PWM Duty-Cycle Range (User Supplied Input)	0	100	%
PWMfreq	Intensity Control PWM Frequency Range (User Supplied Input)	100	1000	Hz

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

ELECTRICAL CHARACTERISTICS

Vin = +24.0V, Vf = 120V, # of Channels = 4, PWMcntl = 100%, Enable = +5V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	133	140	147	Vdc
Rs	Range Select, High Range	Pin 10	14.4			Vdc
	Range Select, Low Range	Pin 10			3.6	Vdc
PWMhi	PWM High Signal Level (V _{IH})	Pin 9	3.0		15	Vdc
PWMlo	PWM Low Signal Level (V _{IL})	Pin 9			0.8	Vdc
ENoff	Enable Control, Unit Off	Pin 11			0.8	Vdc
ENon	Enable Control, Unit ON	Pin 11	2.0			Vdc
Iind	Input Current Draw (Disabled)	Enable (Pin 11) = 0V			0.06	Adc
Eff	Electrical Efficiency			91		%

Electricals continued on page 3.

ELECTRICAL CHARACTERISTICS (Part 2 of 2)

Vin = +24.0V, Vf = 120V per channel, # of channels = 4, PWMcntl = 100%, Enable = +5V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
High Range, Range Select Rs (Pin 10) = 28V						
Iout	Output Current per Channel		79.8	84	88.2	mAdc
Iadj	Nominal Output Current Adjustment Range per Channel	PWMcntl (Pin 9) = 0%	0			mAdc
		PWMcntl (Pin 9) = 100%			84	mAdc
Iin	Input Current Draw			1.85		Adc
Low Range, Range Select Rs (Pin 10) = 0V						
Iout	Output Current per Channel		3.56	3.75	3.94	mAdc
Iadj	Nominal Output Current Adjustment Range per Channel	PWMcntl (Pin 9) = 0%	0			mAdc
		PWMcntl (Pin 9) = 100%			3.75	mAdc
Iin	Input Current Draw			0.1		Adc

