

**SERIES:** VLD24 | **DESCRIPTION:** LED DRIVER

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**FEATURES**

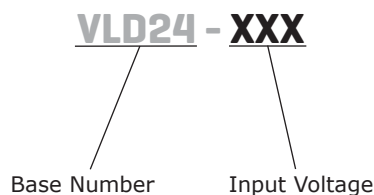
- up to 700 mA constant current
- wide input (5.5~36 V)
- compact package
- PWM or analog dimming capable
- short circuit protection
- remote on/off control
- efficiency up to 96%



MODEL	input voltage		output voltage	output current		dimming control	efficiency
	typ (Vdc)	range (Vdc)	range (Vdc)	min (mA)	max (mA)		typ (%)
VLD24-300	24	6.5~36.0	2~30	0	300	digital + rheostat	96
VLD24-350	24	6.5~36.0	2~30	0	350	digital + rheostat	96
VLD24-500	24	6.5~36.0	2~30	0	500	digital + rheostat	96
VLD24-600	24	6.5~36.0	2~30	0	600	digital + rheostat	96
VLD24-700	48	6.5~36.0	2~30	0	700	digital + rheostat	96

**PART NUMBER KEY**

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## INPUT

parameter	conditions/description	min	typ	max	units
maximum input voltage	for $\leq 10$ seconds	5.5		40	Vdc
operating input voltage		6.5	24	36	Vdc
quiescent input current in off mode	$V_{in} = 24\text{ V}, V_r < 0.6\text{ V}$			400	$\mu\text{A}$
input filter	capacitor				
remote on/off	ON ( $V_r$ on pin 3) OFF	open or $2.8\text{ V} < V_r < 6\text{ V}$ $V_r < 0.6\text{ V}$			
remote pin current	$V_r = 5\text{ V}$			1	mA
PWM frequency			0.2	10	kHz

## OUTPUT

parameter	conditions/description	min	typ	max	units
output voltage range	$V_{in} = 36\text{ V}$	2		30	Vdc
current accuracy	$V_{in} = 24\text{ V}, 5\text{ LEDs}$		$\pm 7$	$\pm 12$	%
current stability	$V_{in} = 24\text{ V}, 1\sim 5\text{ LEDs}$		$\pm 8$	$\pm 15$	%
temperature coefficient			$\pm 0.03$		%/ $^{\circ}\text{C}$
capacitive load				470	$\mu\text{F}$

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
short circuit protection	continuous				

## SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	for 1 minute at 1 mA max.	1,500			Vdc
isolation resistance	at 500 Vdc	1,000			$\text{M}\Omega$
MTBF		1,000,000			hours
RoHS compliant	yes				

## ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	300 and 350 mA	-40		85	$^{\circ}\text{C}$
	500, 600, and 700 mA	-40		71	$^{\circ}\text{C}$
storage temperature		-55		125	$^{\circ}\text{C}$
case temperature				100	$^{\circ}\text{C}$
storage humidity	non-condensing			95	%
temperature rise	at full load		15		$^{\circ}\text{C}$
lead temperature	1.5 mm from case for 10 seconds			300	$^{\circ}\text{C}$

## MECHANICAL

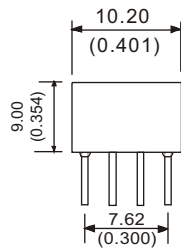
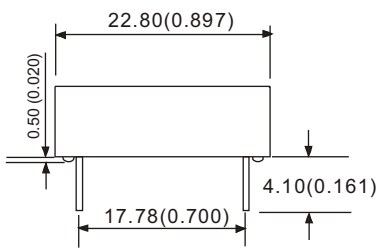
parameter	conditions/description	min	typ	max	units
dimensions	0.897 x 0.401 x 0.374 (22.80 x 10.2 x 9.5 mm)				inch
case material	plastic (UL94-V0)				
weight			3.5		g

## MECHANICAL DRAWING

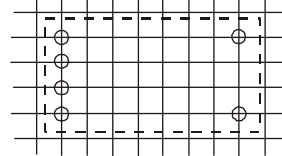
units: mm [inches]

tolerance:  $\pm 0.25$  [ $\pm 0.010$ ]

pin section tolerance:  $\pm 0.05$  mm [ $\pm 0.002$ ]



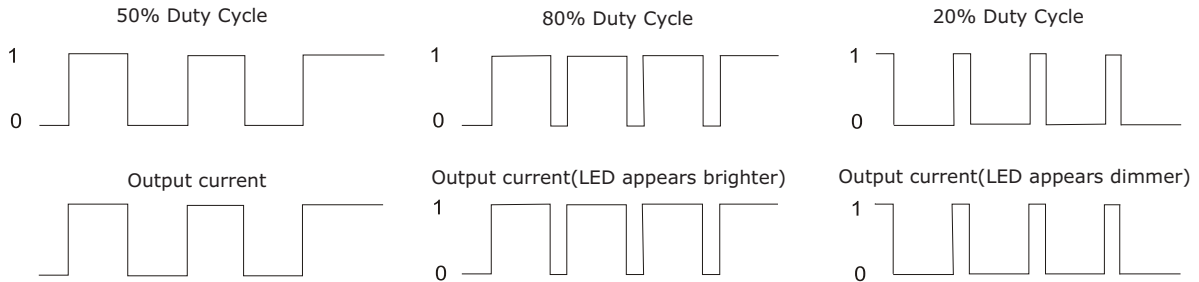
Top view, grid: 2.54mm (0.1inch), diameter: 1.00mm (0.039inch)



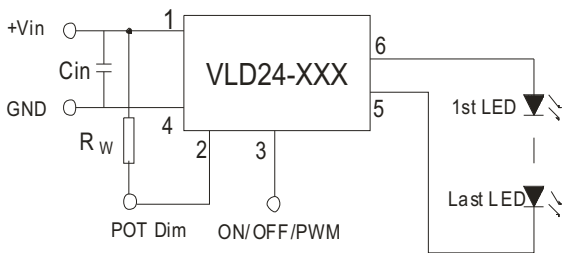
PIN CONNECTIONS		
PIN	FUNCTION	COMMENTS
1	Vin	DC supply
2	Rheostat Dim	must connect to Vin if not in use
3	On/Off/PWM	leave open if not in use
4	GND	do not connect to -Vo
5	-Vo	LED cathode connection
6	+Vo	LED anode connection

## APPLICATION NOTES

### 1. Digital Dimming Control

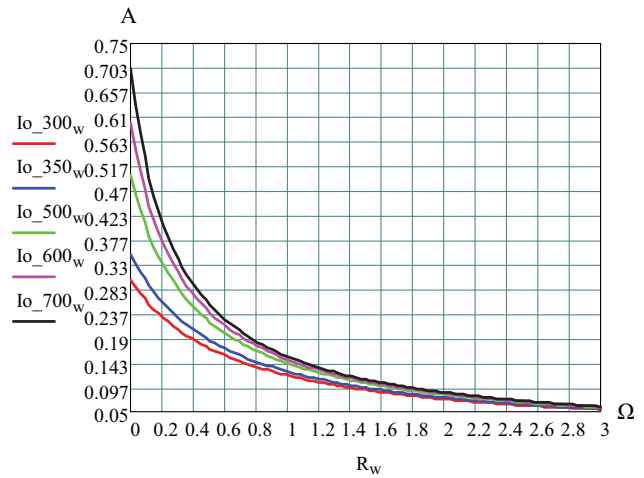


### 2. Analog Dimming Control

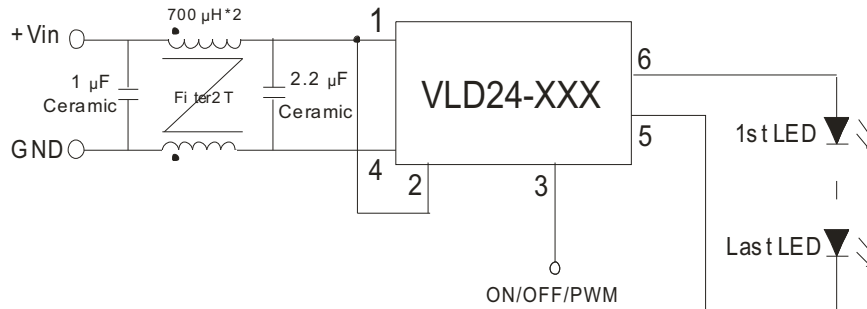


General:  
Cin: 47  $\mu$ F for best performance

Io can be set between 0A and Io(max) with trim pot Rw.  
For example, to set the output current (Io) to 200mA using the VLD24-350, choose Rw=0.4 $\Omega$ . The trim pot should be placed close to pins 1 and 2 with shortest possible leads.



### 3. EMS Filter Circuits



## REVISION HISTORY

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rev.	description	date
1.0	initial release	07/18/2008
1.01	new template applied	09/02/2011
1.02	new template applied	06/27/2012

The revision history provided is for informational purposes only and is believed to be accurate.



**CUI INC**<sup>®</sup>

**Headquarters**  
20050 SW 112th Ave.  
Tualatin, OR 97062  
**800.275.4899**

Fax 503.612.2383  
**cui.com**  
techsupport@cui.com

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