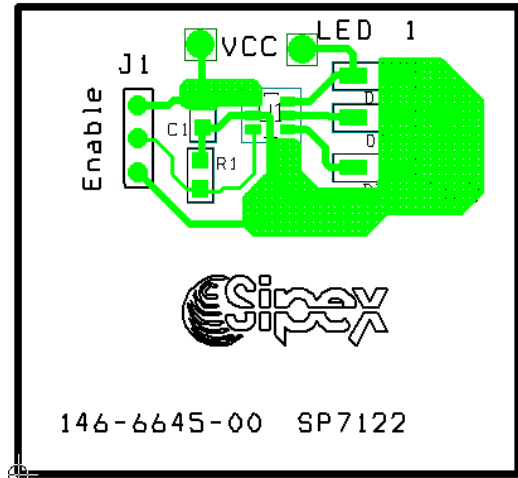


## Evaluation Board Manual

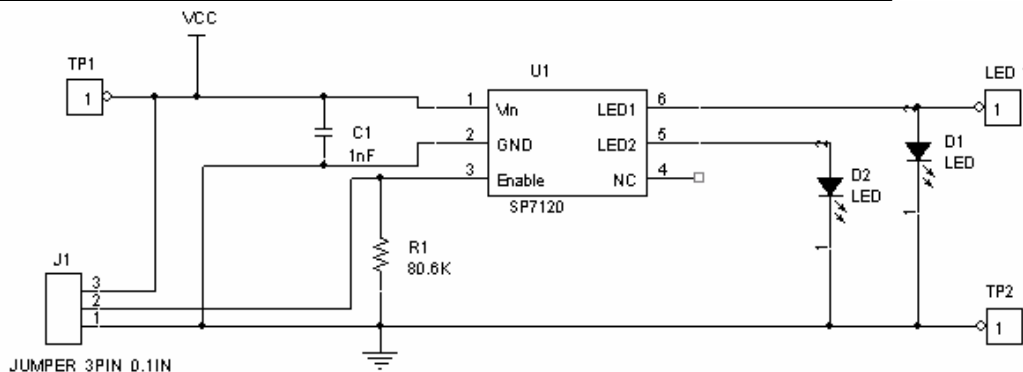
- LED Driver for common cathode parallel connected LEDs
- Ultra Low Dropout Voltage of 150mV
- No EMI, no switching noise
- Integrated current matching
- PWM and Analog brightness control
- Enable/Shutdown control
- Shutdown current < 1 $\mu$ A
- Small footprint SOT23-6 Package



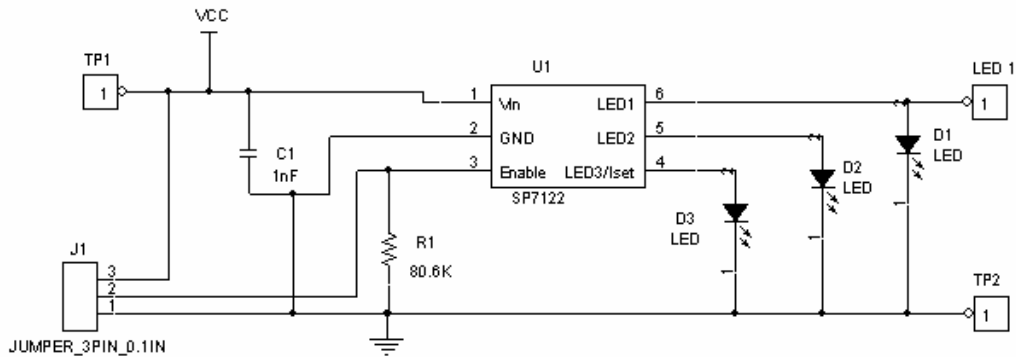
### DESCRIPTION

The SP712X driver's family provides a simple solution for a matched current source for any color common cathode LEDs. The common cathode connection allows the user to increase the led power dissipation by having the cathodes heat sinked to the ground plane of the circuit board. The SP7120 may drive two LEDs or one LED at twice the current with two channels connected in parallel. The factory preset current values of 15mA (version A), 20mA (version B), or 25mA (version C) per channel. The SP7122 has three channels with factory preset current values of 15, 20, or 25mA and may drive three LEDs or one LED at three-times the current with all channels connected in parallel. At shutdown mode (EN pin is LOW) the supply current drops to .04 $\mu$ A typical. The SP712x drivers are available in a small footprint 6-pin SOT23-6 package.

### BOARD SCHEMATIC



SP7120 Eval Board Schematic



SP7122 Eval Board Schematic

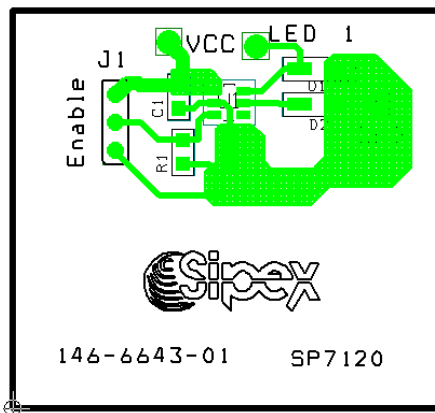
## USING THE EVALUATION BOARD

### 1) Powering Up the SP7120 or the SP7122 Circuit

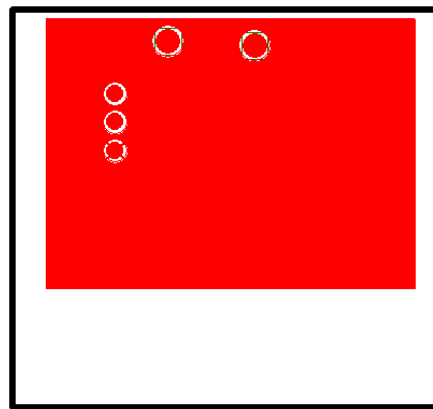
The Evaluation Board can be powered from inputs ranging from 2.7 to 5.5Vin. All that is required is to populate the LED location with desired LED and connect the source voltage to Vin and GND. There is a jumper located on the PCB. The jumper needs to be set between center pin and Vin to activate the part. If the jumper is left unpopulated the driver will be off due to the pull down resistor on the enable pin.

**For typical test results please refer to the data sheet.**

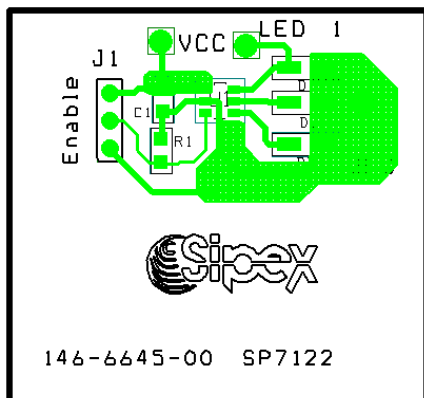
## EVALUATION BOARD LAYOUT



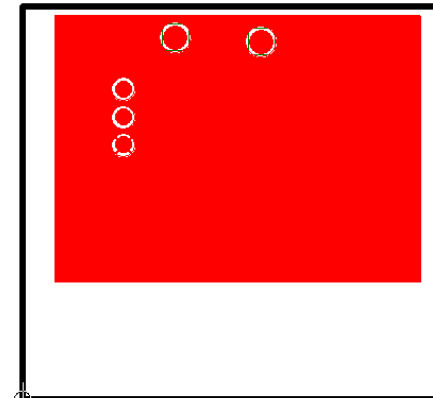
TOP Side SP7120



TOP Side SP7122



TOP Side SP7122



TOP Side SP7122

**SP7120**

QTY	Ref Desigantor	Manufacturer	Part Number	Description
1	U1	Sipex	SP7120***	
2	C1	Murata	GRM188R71H102KA01	1nF Capacitor
1	R1	Vishay	CRCW060380K6FKEA	80.6K Resistor
1	J1	Würth	61303611121	3 Pin 2.54 mm Header
1		Würth	60900213421	2.54mm Jumper
3		Millmax(DigiKey)	0300-11501-4727100	Test point pin
1		Sipex	146-6643-01	PCB

**\*\*\*EACH PCB WILL HAVE A STICKER ON IT IDENTIFYING THE WHICH VERSION IC IS ON THE DEMO BOARD**

**SP7122**

QTY	Ref Desigantor	Manufacturer	Part Number	Description
1	U1	Sipex	SP7122***	
2	C1	Murata	GRM188R71H102KA01	1nF Capacitor
1	R1	Vishay	CRCW060380K6FKEA	80.6K Resistor
1	J1	Würth	61303611121	3 Pin 2.54 mm Header
1		Würth	60900213421	2.54mm Jumper
3		Millmax(DigiKey)	0300-11501-4727100	Test point pin
1		Sipex	146-6645-00	PCB

**\*\*\*EACH PCB WILL HAVE A STICKER ON IT IDENTIFYING THE WHICH VERSION IC IS ON THE DEMO BOARD**

<b>Part Number</b>	<b>Description</b>
<b>SP7120AEB</b>	<b>SP7120A 2 channel (15mA) Eval Board</b>
<b>SP7120BEB</b>	<b>SP7120B 2 channel(20mA) Eval Board</b>
<b>SP7120CEB</b>	<b>SP7120C 2 channel(25mA) Eval Board</b>
<b>SP7122AEB</b>	<b>SP7122A 3 channel(15mA) Eval Board</b>
<b>SP7122BEB</b>	<b>SP7122B 3 channel (20mA) Eval Board</b>
<b>SP7122CEB</b>	<b>SP7122C 3 channel (25mA) Eval Board</b>

For further assistance:

Email: [Sipexsupport@sipex.com](mailto:Sipexsupport@sipex.com)  
WWW Support page: <http://www.sipex.com/content.aspx?p=support>  
Sipex Application Notes: <http://www.sipex.com/applicationNotes.aspx>



**Sipex Corporation**  
**Headquarters and**  
**Sales Office**  
233 South Hillview Drive  
Milpitas, CA95035  
tel: (408) 934-7500  
fax: (408) 935-7600

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