LCD Backlight Driver

Model

SIPF150-RH

RoHS COMPLIANT

5 Volt Input

Industrial Grade Single Tube CCFT Inverter

Brightness Control

Physical Specifications

Dimensions:	22.7mm x 96.5mm x 7.3mm (0.894" x 3.79" x 0.287")
Weight:	18g (0.634 oz.)
Operating Temp:	0 to 55°C
Relative Humidity:	20% to 90%, non-condensing
Storage:	-20 to 85°C/5-95% RH
Impact Resistance:	50G half wave per 2 msec
Vibration Resistance:	10-55-10 Hz/min @ 1.5mm

Input Specifications*

Item	Condition	Standard
Input Voltage		
Rated	—	5.0 Vdc
Tolerance	Continuous Operation	4.5 Vdc - 7.0 Vdc
	Starting Condition (Discharge Starting Voltage)	4.5 Vdc - 7.0 Vdc
Max. Input Current	V_{IN} = 4.5 Vdc Luminance @ Max.	1.3 A
Input Leak Current	V_{IN} = 7.0 Vdc Control terminal = H(V_{IN}) On/Off	4.0 µA (Lamp Off)
Max. Rush Current	V_{IN} = 7.0 Vdc Luminance @ Max.	6.5 $A_{zero\text{-}p}$/50 µS
Max. Input Power	V_{IN} = 4.5 Vdc Luminance @ Max.	5.85 W
On/Off Control Terminal Input Current	Control Terminal L = 0.0 - 0.4 Vdc V_{IN} = 7.0 Vdc	I_{LOW} = 2.0 mA (Lamp Lighting)
	Control Terminal H = Open or V_{IN}	— (Lamp Off)

*Above specifications occur @ 25 ± 5°C.

Output Specifications*

Item	Condition	Standard MIN	TYP	MAX
Output Voltage (Vrms)	V_{IN} = 4.5 Vdc	1500	—	—
Tube Current (mArms)	Luminance @ Max.	5.5	6.0	6.5
	Luminance @ Min.	2.5	—	—
Max. Power Output (W)	V_{IN} = 5.0 Vdc/Luminance @ Max.	—	—	4.0
Ignition Frequency (kHz)	Luminance @ Max.	—	45	—
DC/DC Converter Frequency (kHz)	Luminance @ Max.	—	80	—

*Above specifications occur @ 25 ± 5°C & V_{IN} = 4.5 - 7.0 Vdc.

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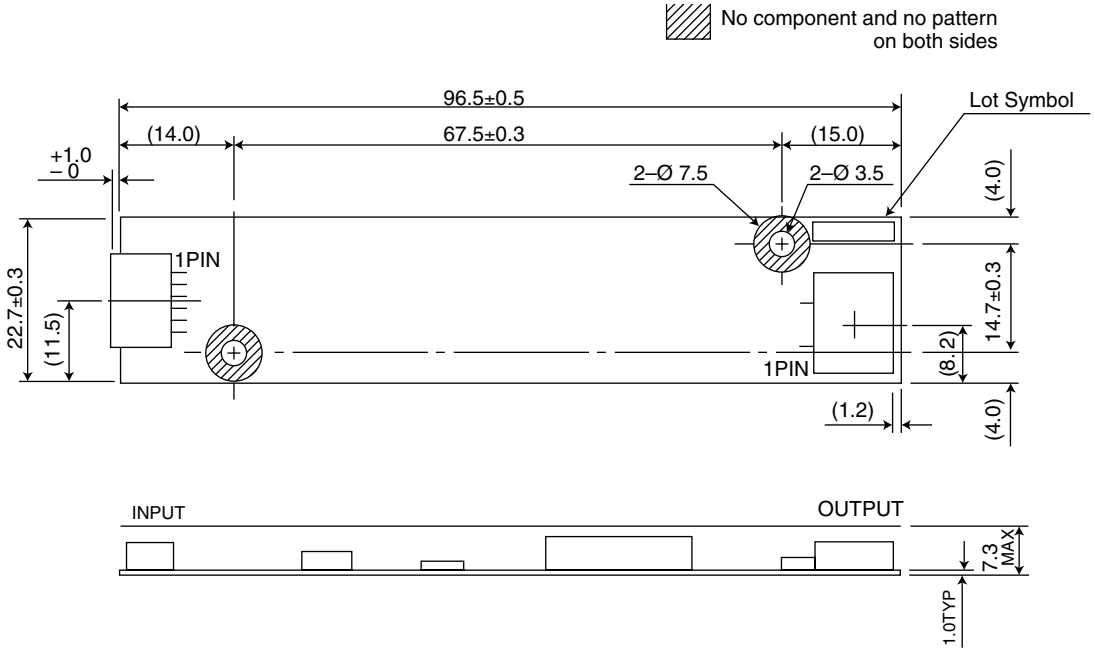
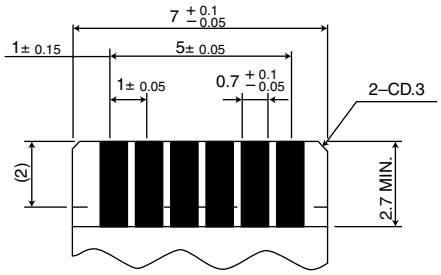
Luminance Variance

Item	Condition	Applied Voltage	Output Current
Luminance @ Max.	Btwn. pin 5 & pin 6	0.0 Vdc	6.0 mA
Luminance @ Min.	Btwn. pin 5 & pin 6	4.5 Vdc	2.5 mA





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FM 32227

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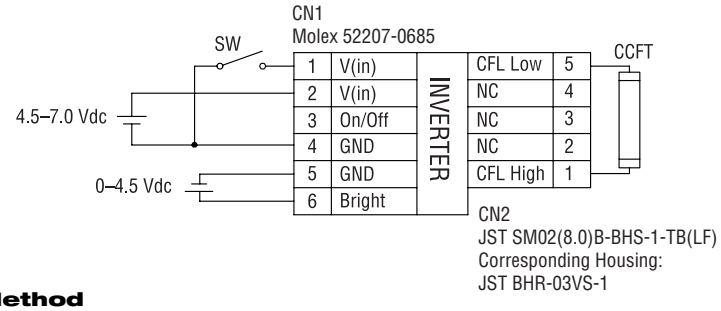
Tech Notes

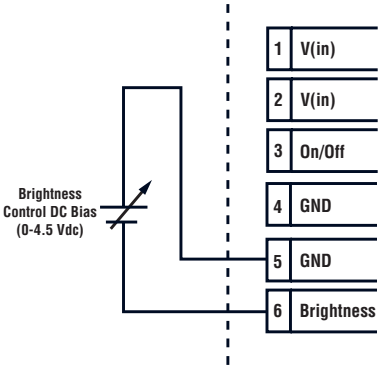
Connection Diagram

SIPF-150-RH



Output Current Optimization Method

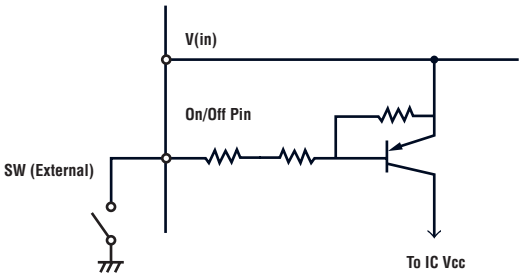
Maximum output current can be adjusted by applying bias voltage between brightness control pins as shown below.



	DC Bias Voltage	Output Current
Luminance Max.	0 Vdc	6.0 mA
Luminance Min.	4.5 Vdc	2.5 mA

On/Off Control

The on/off control is achieved by using the on/off pin on the input side of SIPF150. The circuit for the remote on/off circuitry consists of an active low TTL switch. When the circuit is open, the IC Vcc is cut off. When the circuit is closed, IC Vcc is activated. A mechanical switch or a TTL/CMOS gate needs to be placed between the remote on/off pin and ground creating a condition where the circuit is closed to activate the inverter. Either one of the following will be required for the inverter to operate:



1. Tie on/off pin to ground.
2. Add mechanical switch between on/off pin and ground, close switch.
3. Add TTL/CMOS switch between on/off and ground. Circuit must be closed for unit to operate (as shown above right).

One recommended use of logic switch for remote on/off is shown in the diagram below. Electrical specification for on/off terminal is Low 0 to 0.4V, -0.4 mA or higher when switch is closed.