

Model

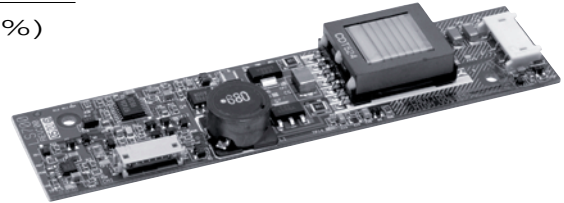
# LS700-RH

## RoHS COMPLIANT

12 Volt Input

Dual Tube CCFT Inverter (8W)

Brightness Control (PWM Dimming 20-100%)



### Physical Specifications

Dimensions:	25mm x 105mm x 10mm (0.98" x 4.13" x 0.39")
Operating Temp:	0 to 60°C, convection cooling
Relative Humidity:	20% to 90%, non-condensing
Storage:	-20 to 80°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		
		MIN	TYP	MAX
Input Voltage Rated Tolerance	—	12 Vdc		
	Continuous Operation Starting Condition (Discharge Starting Voltage)	10.8 Vdc - 13.2 Vdc		
Max. Input Current	$V_{IN} = 10.8 \text{ Vdc}$ Luminance @ Max.	1.0 A		
Max. Input Power	$V_{IN} = 12 \text{ Vdc}$ Luminance @ Max.	12 W		
On/Off Input Current	On $V_{CONT} = 2.0\text{-}V_{CC} \text{ Vdc}$	$I_{MAX} = 4.0 \text{ mA}$		
	Off $V_{CONT} = 0.3\text{-}0.8 \text{ Vdc}$	$I_{MAX} = 50 \mu\text{A}$		
DC-Bright	$I_{OUT} = \text{Max}$	3.8 V		
	$I_{OUT} = \text{Min}$	2.0 V		
PWM Bright Duty Ratio	$t_{ON} / t_{BC} \text{ Max}$	1.00		
	$t_{ON} / t_{BC} \text{ Min}$	0.30		
PWM Bright Pulse Frequency	$1 / t_{BC}$	400 Hz		
		380 ~ 420 Hz		

\*Above Specifications Occur @ 25 ± 5°C

### Output Specifications\*

Item	Condition	Standard		
		MIN	TYP	MAX
Output Voltage (Vrms)	$V_{IN} = 10.8 \text{ Vdc}$	1500	1650	—
Tube Current for 2 Lamps (mArms)	Luminance @ Max. ( $V_{IN} = 12.0 \text{ Vdc}$ )	10.4	12.0	13.6
	Luminance @ Min. ( $V_{IN} = 12.0 \text{ Vdc}$ )	—	7.0	—
Max. Power Output for 2 Lamps (W)	$V_{IN} = 12 \text{ Vdc}$ /Luminance @ Max.	—	—	8.0
Ignition Frequency (kHz)	Luminance @ Max. ( $V_{IN} = 12.0 \text{ Vdc}$ )	50	60	70

\*Above specifications occur @ 25 ± 5°C &  $V_{IN} = 10.8 - 13.2 \text{ Vdc}$ .

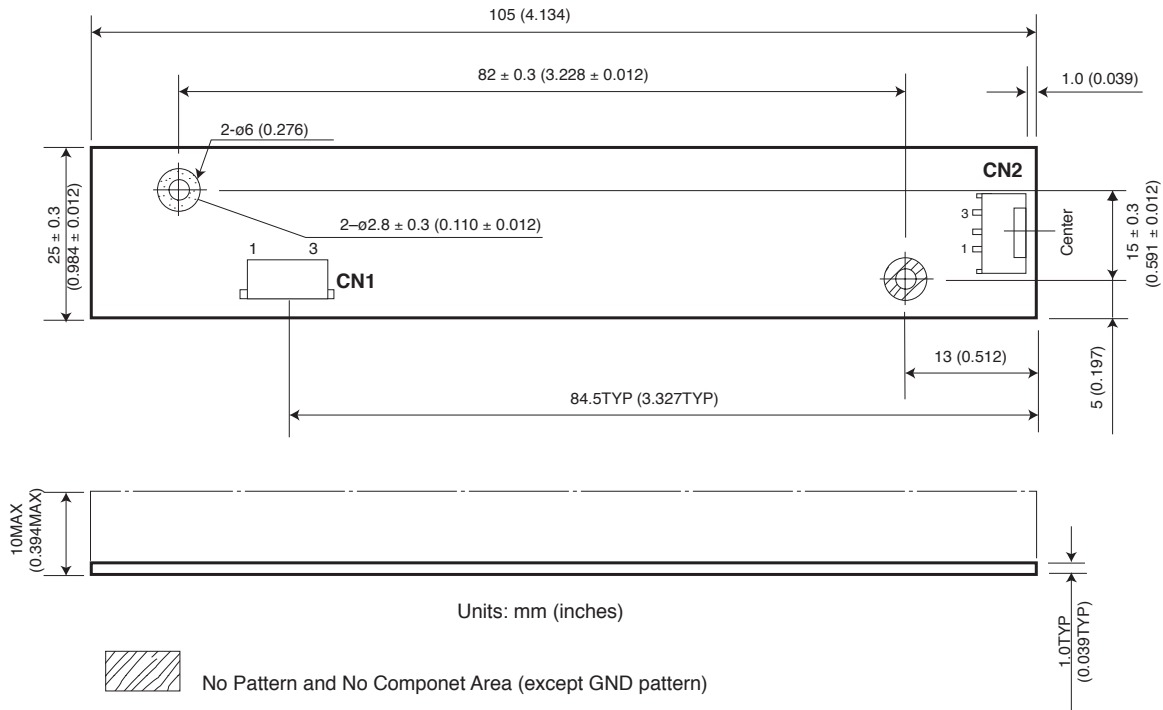
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## Luminance Variance\* (DC Bias Control)

Item	Condition	Applied Voltage	Output Current
Luminance @ Max.	Btwn. pin 4 & 6	Vcont = 3.8 V	12.0 mA (2 lamps)
Luminance @ Min.	Btwn. pin 4 & 6	Vcont = 2.0 V	6.5 mA (2 lamps)

\* Luminance can also be controlled by applying PWM signal to pin 5 (pin 4 must be connected to GND).



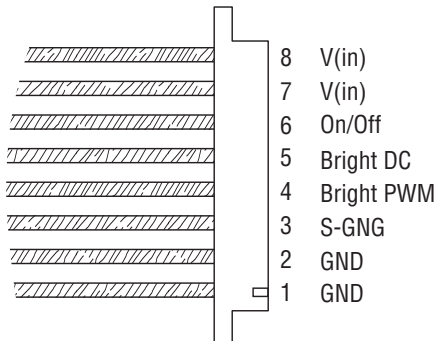
### CN1 Input Connector

Hirose DF13-8P-1.25H  
(pin number 1 is marked on PCB)

V(in)	1
V(in)	2
On/Off	3
Bright DC	4
Bright PWM	5
S-GNG	6
GND	7
GND	8

### CN1 Corresponding Housing

Hirose DF13-8S-1.25C  
(Hirose Connector Pin Numbers)



### CN2 Output Connector

JST SMO3 (4.0) B-BHS-1-TB

CCFT LOW	1
CCFT HIGH	2
CCFT HIGH	3

### CN2 Corresponding Housing

JST BHR-03VS-1

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## TAIYO YUDEN

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FM 32227

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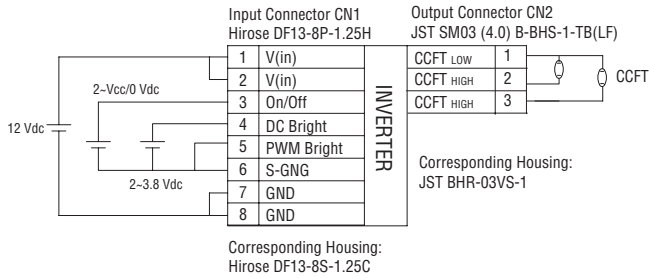
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## Tech Notes

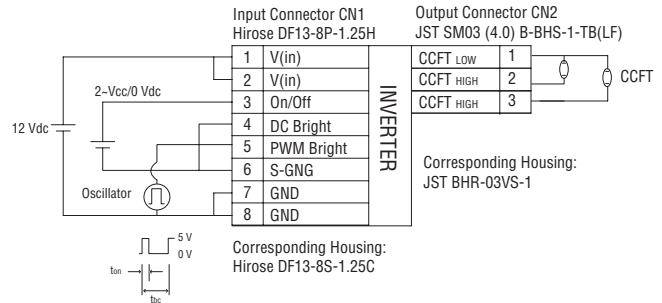
### Connection Diagram

#### LS700A-RH

##### DC Bright Control Connection

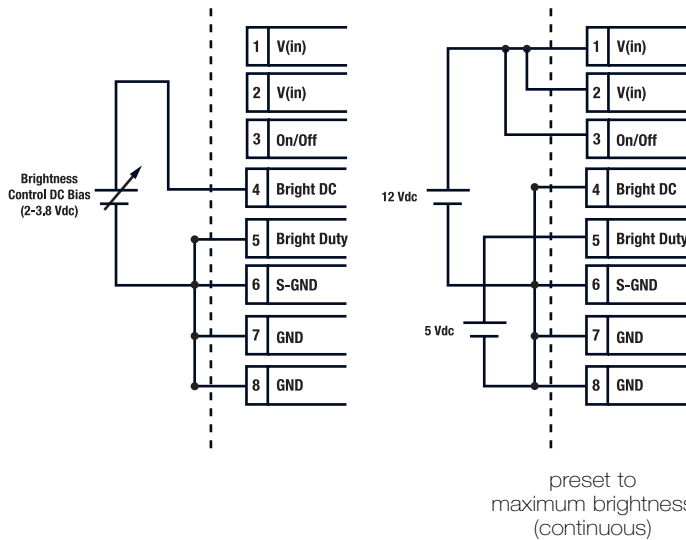


##### PWM Bright Control Connection

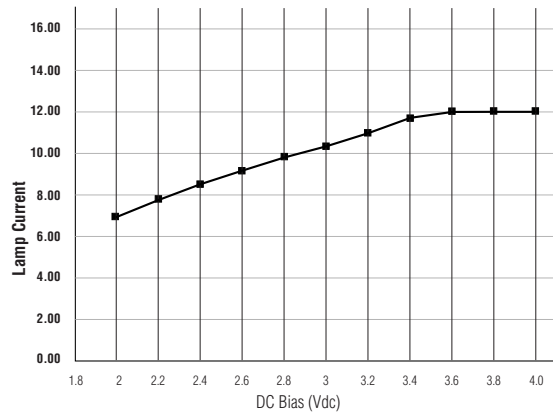


### DC Bright Control Method\*

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



DC Bias	Lamp Current (2 lamps)
2.0 V	6.98 mA
2.2 V	7.89 mA
2.4 V	8.60 mA
2.6 V	9.22 mA
2.8 V	9.80 mA
3.0 V	10.40 mA
3.2 V	11.00 mA
3.4 V	11.72 mA
3.6 V	12.00 mA
3.8 V	12.00 mA
4.0 V	12.00 mA



\* Above specifications occur @ 25 ± 5°C, pin 5 connected to GND, and V<sub>IN</sub> = 12 Vdc using Mitsubishi AA121SK panel.

### On/Off Control

The inverter is ON if one of the following conditions are met:

- Pin 3 (On/Off) is connected to pin 1/2 (V<sub>IN</sub>)
- Pin 3 (On/Off) = 2 Vdc — 13.2 Vdc

The inverter is OFF if one of the following conditions are met:

- Pin 3 (On/Off) is connected to pin 7/8 (GND)
- Pin 3 (On/Off) ≤ 0.8 Vdc

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