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**CUSTOMER'S ACCEPTANCE
SPECIFICATIONS**
(Backlight Inverters for cold cathode
fluorescent lamp)

TYPE:INVC667

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Accepted by

Proposed by

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RECORD OF REVISION

DATE	PAGE	SUMMARY	Date Code & Rev.
6.JAN.2004		NEW	
24.MAR.2004	4 page	3.2.1 Input current CHANGED: Min - Typ - Max 540mA-590mA-640mA ↓ 430mA-480mA-530mA	
	7 page	6. Structure and Dimensions ADDITION: Measurement of Output Connector position. (2.0MAX) CHANGED: 1. 90+/-0.5mm ↓ 90.5+/-0.5mm 2. 2-Dia. 2.8+0.1/-0 ↓ 2-Dia. 2.8+/-0.3	

1. Scope

- 1.1 This specification shall apply to inverter INVC667 to operate a cold cathode fluorescent lamp in the liquid-crystal module(LCM).
- 1.2 This inverter INVC667 is designed and adjusted for SX14Q001 LCD-module. (Hitachi's type name)

2. General Specifications

General specifications and condition for use are shown below.

Item	Specification
Cooling condition	Free air flow
Efficiency	75 % min
Weight	20g MAX
Ambient temperature (direct ambient air of Inverter board)	Operating 0~50deg Stock -20~70deg
Humidity	90 % RH.max.
Corrosive gasses	Not acceptable
Audible sound level	35dB max. at 30cm

3. Electrical Characteristics

3.1. Maximum ratings

Items	Min.	Typ.	Max.	unit	Remarks
Input voltage	---	---	7.0	V	

3.2. Operating Characteristics

3.2.1 SX14Q001 LCD module

AT=25deg

Item	Min	Typ	Max	Unit	Remarks
Input voltage	4.5	5.0	5.5	V	
Input current	430	480	530	mA	at 5.0V
Output current	4.5	5.5	6.5	mA	at 5.0V
Main frequency	45	55	65	kHz	at 5.0V

- (1) All characteristics are measured by our certain test equipment. The measurement of condition should be stable lighting (more than 30 minutes after startup :at 25+/-1deg and no breath of wind) (The measurement of input rush current is exception.)
- (2) The electrical characteristics are measured as we show on measurement diagram fig.1. $V_{cc}=5V$.
- (3) As we show on measurement diagram fig.1, the test equipment shall be V1:DC Volt meter (Class0.5) A1:DC Current meter(Class0.5) A2:AC Current meter type2016(Y.E.W) or FLUKE45(FLUKE) V_{cc} :DMS35-2.3(Metronix).
- (4) The line length of between the lamp and 2pin of CN2(high voltage side)is less than 150mm. The line length of between the lamp and 1pin of CN2(low voltage side)is less than 400mm.

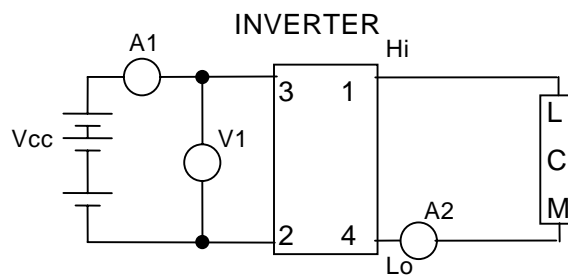


Fig.1 Wiring

3.4. Wiring Diagram

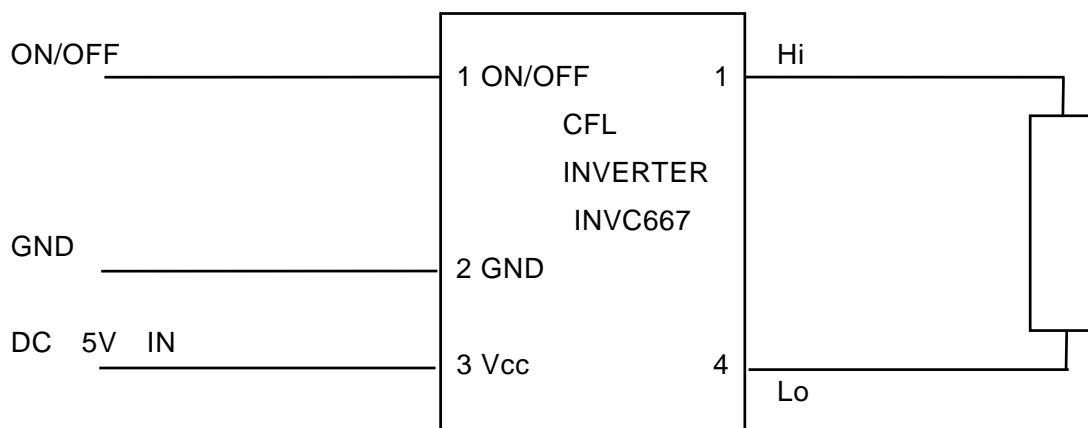


Fig.2 Wiring Diagram

4. Reliability

Item	Test condition
Low temp.oper.	0deg, 5.0V, 100%output, 500Hrs
High temp.oper.	50deg, 5.0V, 100%output, 500Hrs
Low temp.stock.	-20deg, 500Hrs
High temp.stock.	70deg, 500Hrs
High temp. and high humidity	50deg, 95% 5.0V, 100%output, 500Hrs
Cyclic temp.oper.	0deg – 25deg –50deg 1Hrs each 5.0V, 100%output, 50cycles
Thermal shock	-20deg – 70deg, 0.5Hrs each 100cycles
Vibration	3G, 30~200Hz, 0.5Hrs,xyz-axis
Impact test	50G,xyz-axis

5. Structure

5.1 Dimensions

Reference to drawing P.7

5.2 Interface specification

Input connector CN1: PHR-3(JST)

PIN No.	Symbol	Comement
1	CFL ON/OFF	OFF at Open ON at Low
2	GND	---
3	Vcc	Vcc 5.0Vtyp

Output connector CN2:IL-G-4S(JAE)

PIN No.	Symbol
1	CFL High V
2,3	N.C.
4	CFL Low V

6. Structure and Dimensions

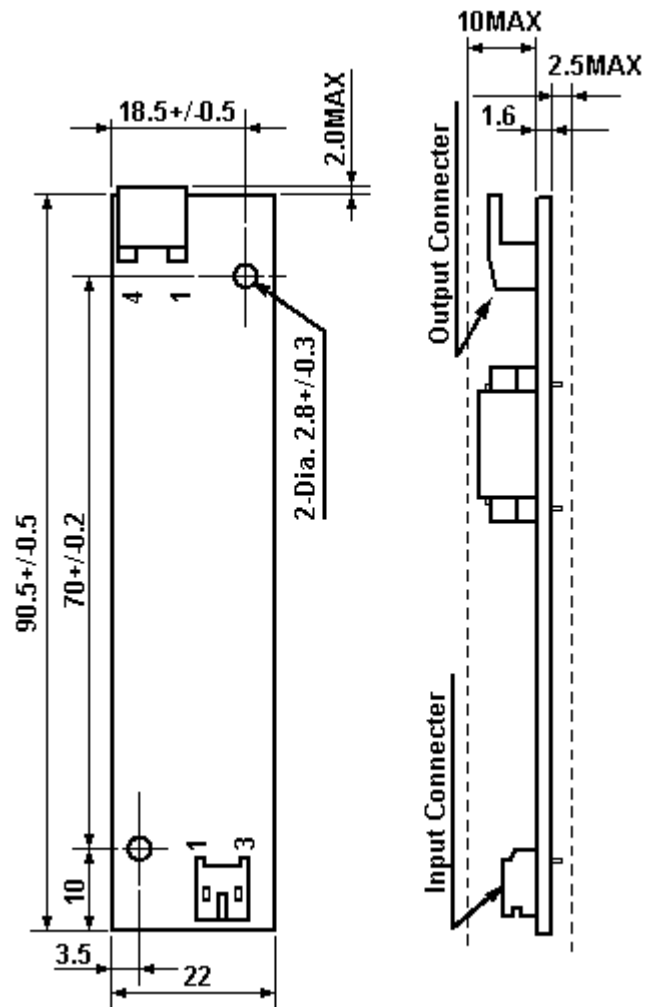


Fig.3 Dimensional Outline

- 1.Manufacturer's Name : "HITACHI" silk print
- 2.Manufacture'No : "667"
- 3.Date code : ex "06A4"

7. Precautions in Design

7.1 Please turn off the power supply of the inverter before the output connector (CN2) is put in or put off. Because the voltage of the output connector is very high.

7.2 The high-voltage wiring of lamps may affect the characteristics of this product even in the presence of a slight stray capacity of 1 to few pF. So, please check whatever the below points have fully considered.

(1) Please use UL1330 equivalents as inverter output leads and keep length within 150mm

(2) Please keep the length of wiring as short as possible and at the same time avoid binding high-voltage and low-voltage leads together and fitting high-voltage leads near the shield.

(3) Consider the electric potential of the parts adjacent to a wire because it greatly affects the electric characteristics and startup characteristics.

7.3 In the case of putting in and putting off the connector (CN1), please switch off the power supply of the inverter. If the power supply is operating it will be possible that the inverter breaks down.

7.4 Please pay attention in using the inverter. Because the transformer in the inverter is weak to impact.

7.5 If it was exposed to thermal shock (out of order), it may have a crack itself.

7.6 Please do not give it any changes, such as reworking it, applying and hardening with adhesives, molding with resin, fixing with tape.

7.7 Please make a tight connection of the output and input connector. (If the inverter's connector contact was imperfect, the components of the inverter have high temperature and break down.)

7.8 Pay attention as printed circuit board is bent, and not adding excessive pressure when printed circuit board is built in. (Deterioration and the damage of component are caused, and movements of inverter are out of order.)