

# DC-AC INVERTER UNIT

PS-P1212B-091 (8W DOUBLE OUTPUT WITH DIMMING FUNCTION)

(MODIFICATION)

## DESCRIPTION:

This DC to AC Inverter was developed for many other low LCD Backlight power supply as low profile applications, either for LCD Optimized for Sharp: LQ121S1DG41

## APPLICABLE LCD:

- 10 to 15 inches double lamp type
- Lamp Voltage 600V
- Lamp Current 5,5mA
- Lamp Start Up Voltage 1700Vrms (Vin : 12V)



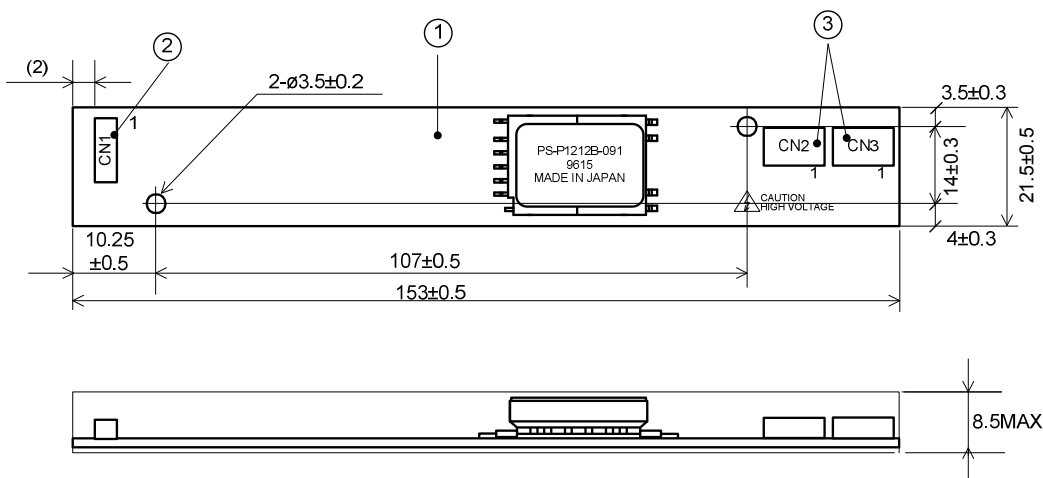
## FEATURES :

- Current Feedback Circuit
- High Efficiency
- Low noise with voltage resonant circuit
- Regulated output current

## TEMPERATURE & HUMDITY :

- Operating Temperature Range -10 ° C ~ +70° C
- Storage Temperature Range -30 ° C ~ +85° C
- Humidity 95 %RH max

## DIMENSIONS :



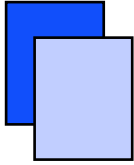
Unit : mm  
Weight :21.2g typ.

No.	Part Discription	Qty.	Material	Note
1	PCB	1	UL94V-0 (FR-4 or CEM-3)	t=1.0mm
2	Connector CN1	1	53261-0790	Molex
3	Connector CN2; CN3	2	SM02(8.0)B-BHS-1	JST

## Power Systems – The Power Solution

Web: [www.Power-Systems.de](http://www.Power-Systems.de)  
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**Input Side CN1:**

**Output Side CN2:**

**Output Side CN3:**

Pin No.	Symbols	Ratings
CN 1-1	Vin	10.8~13.2V
CN 1-2		
CN1-3	GND	0V
CN1-4		
CN 1-5	Vrmt	0~0.4V: OFF / 2.5V~Vin: ON
CN 1-6	Vst	0V / 5V The warning output 5V in abnormal circumstances
CN 1-7	Vbr / Rbr	0~2.5V / 0~50kΩ

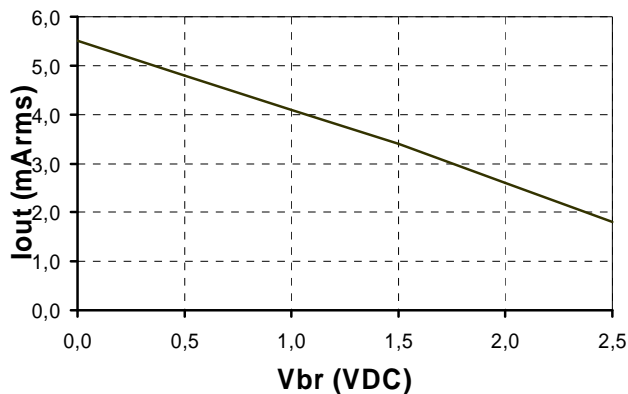
Pin No.	Symbols	Ratings
CN 2-1	VHIGH1	600Vrms
CN 2-2	N.C.	-
CN 2-3	VLOW1	(2V)

Pin No.	Symbols	Ratings
CN 3-1	VHIGH2	600Vrms
CN 3-2	N.C.	-
CN 3-3	VLOW2	(2V)

**ELECTRICAL CHARACTERISTICS :**

Items	Symbols	Conditions				Specification			Unit	
		Vin [V]	Ta [°C]	RL1 [KΩ]//CL1 [pF] RL2 [KΩ]//CL2 [pF]	Vbr [V] / VR [Ω]	Vrmt [V]	Min.	Typ.		Max.
Output Current	Iout	12±1.2	-10~70	85~95//5	0 / 0	5±0.25	4.8	5.5	6.2	mA <sub>rms</sub>
			23±5	90//5	0 / 0		5	5.5	6	
Input Current	Iin1	12±0.6	-10~70	85~95//5	0 / 0	5±0.25	-	0.8	1.0	Adc
	Iin2									
Frequency	F	12±0.6	-10~70	85~95//5	0 / 0	5±0.25	35	40	45	kHz
Open Circuit Voltage	Vopen	12±1.2	-10~70	∞	0 / 0	5±0.25	1500	1700	-	V <sub>rms</sub>
Dimming Function	Iout1/Iout2	12±1.2	-10~70	85~95//5	2.5 / 50k	5±0.25	1.1	2.0	2.9	mA <sub>rms</sub>
		12±0.6	23±5	90//5			1.2	2.0	2.8	
Warning Output	Vst	12±1.2	-10~70	85~95//5	0 / 0	5±0.25	4.5	5.0	5.5	Vdc
				∞						
				∞						
				85~95//5						
				85~95//5			-	0	0.5	

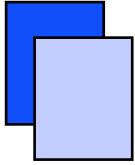
**DIMMING CHARACTERISTICS (Reference)**



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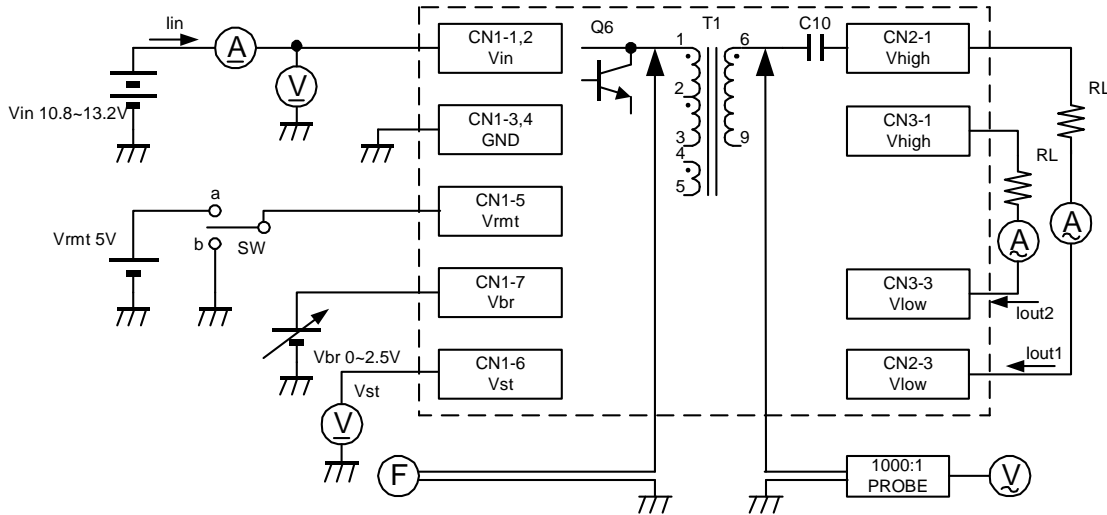
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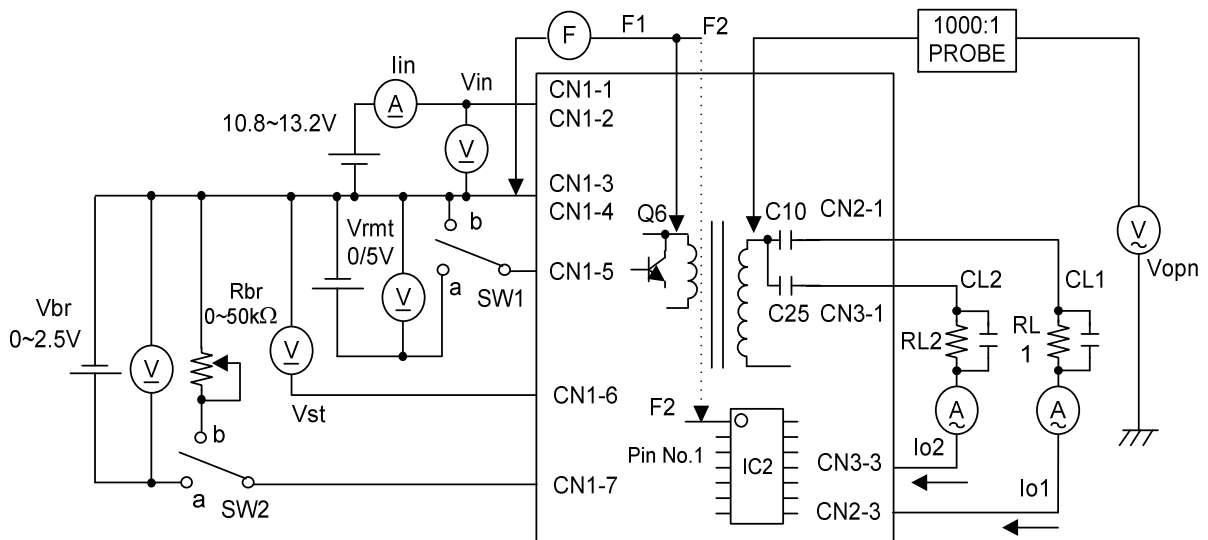
## APPLICATION (for example)

Voltage Dimming Type



## TEST CIRCUIT

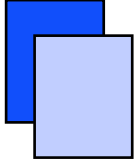
4-1. RL1,2: Load resistance (7W MIN.)  
 CL1,2: Stray capacitor (3kV MIN.)



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- Note 1. For circuit connection, please refer to test circuit diagram
- Note 2. Please use minimum of 2mm clearance (all directions) between inverter high voltage area and any conductors. Please refer to mechanical drawing for marking of high voltage area.
- Note 3. Open voltage (strike voltage) is measured across the transformer secondary winding at no load as the reading at the output connector would be less than the actual value
- Note 4. If the start voltage falls below Cold Cathode Tube strike voltage, the CCFL will not light up easily specially at lower ambient temperature. Please review mounting instruction to avoid any abnormal operation due to coupling/leakage capacitance of inverter high voltage area to any surrounding conductor.
- Note 5. Please check your lamp characteristic for minimum operational current and set the limit point in your design to avoid flickering and/or abnormal operation.
- Note 6. For proper operation of circuit protection (FUSE or IC PROTECTOR), please use minimum of 2A capacity for input power supply.

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