



Endicott Research Group, Inc.

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<http://www.ergpower.com>

## Specifications and Applications Information

02/23/11

The ERG 8m053366 (*8m Class*) low profile dc to ac inverter is specifically designed to power the backlight of the LG Philips LB040Q02 LCD display to a moderate brightness level from a +5 volt dc source.

This low profile inverter features:

- ✓ Less Than 8 mm in Height
- ✓ LCD Module Specific
- ✓ Display Compatible Output Connector
- ✓ Firm Specifications
- ✓ Application Information
- ✓ Designed, Manufactured and Supported in the USA
- ✓ Custom Input and Output Voltages
- ✓ Flexible System Interface
- ✓ Notebook Display Head Compatible

### Connectors

#### Input Connector

4 pins are 0.315" [8,00] Long, 0.025" [0,63] Square and are on 0.100" [2,54] Centers.

J1-1 +Vin  
J1-2 GND  
J1-3 Enable \*  
J1-4 N/C

\* Valid only with "C" jumper (JP1) removed

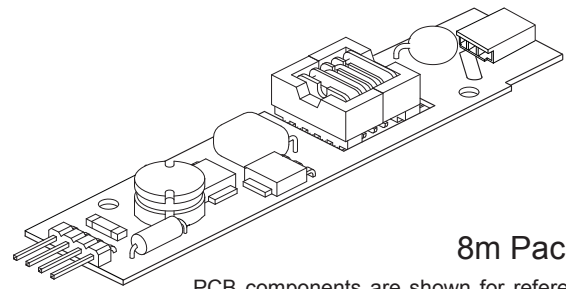
#### Output Connector

JST  
SM02B-BHSS-1-TB

J2-1 ACreturn  
J2-2 ACout

# 8m053366

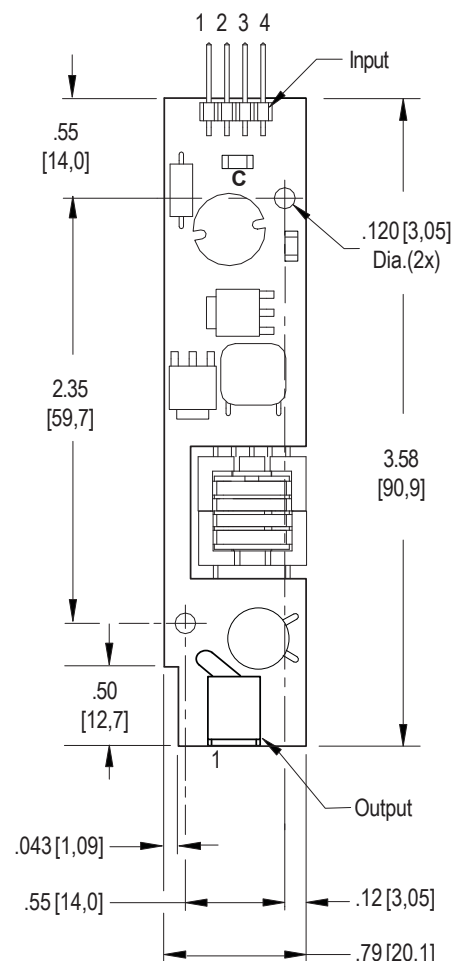
**8m Class**  
Single Lamp  
DC to AC Inverter



**8m Package**

PCB components are shown for reference only.  
Actual product may differ from that shown.

### Package Configuration



PCB components are shown for reference only. Actual product may differ from that shown.

**Absolute Maximum Ratings**

Rating	Symbol	Value	Units
Input Voltage Range	$V_{in}$	-0.3 to +5.5	Vdc
Storage Temperature	$T_{stg}$	-40 to +85	°C

**Operating Characteristics**

With a load simulating the referenced display and lamp warm-up of 5 minutes.

Unless otherwise noted  $V_{in} = 5.00$  Volts dc and  $T_a = 25^{\circ}\text{C}$

Characteristic	Symbol	Min	Typ	Max	Units
Input Voltage	$V_{in}$	+4.50	+5.00	+5.25	Vdc
Component Surface Temperature (note 1)	$T_s$	-20	-	+80	°C
Input Current (note 2)	$I_{in}$	-	0.65	0.76	Adc
Operating Frequency	$F_o$	33	38	43	kHz
Minimum Output Voltage (note 3)	$V_{out} \text{ (min)}$	1300	-	-	Vrms
Efficiency	$\eta$	-	73	-	%
Output Current (per lamp)	$I_{out}$	-	6.1	-	mArms
Output Voltage	$V_{out}$	-	390	-	Vrms
Enable Pin Input Current Requirement (notes 4,5,6)	$I_{Enable}$	-	6.1	-	mAdc

Specifications subject to change without notice.

(Note 1) Surface temperature must not exceed 80 degrees C; thermal management actions may be required.

(Note 2) Input current in excess of maximum may indicate a load/inverter mismatch condition, which can result in reduced reliability. Please contact ERG technical support.

(Note 3) Provided data is not tested but guaranteed by design.

(Note 4) Required User Enable/Disable Interface Circuit is shown on page 3.

(Note 5) Valid only with "C" jumper (JP1) removed.

(Note 6) With the inverter powered and JP1 is in place, a ground applied to the enable pin J1-3 will open the inverter fuse.

**Application Notes:**

- 1) The minimum distance from high voltage areas of the inverter to any conductive material should be .12 inches per kilovolt of starting voltage.
- 2) Mounting hardware to be non-conductive.
- 3) Open framed inverters should not be used in applications at altitudes over 10,000 feet.
- 4) ACreturn should be left floating, not grounded.
- 5) Contact ERG for possible exceptions.



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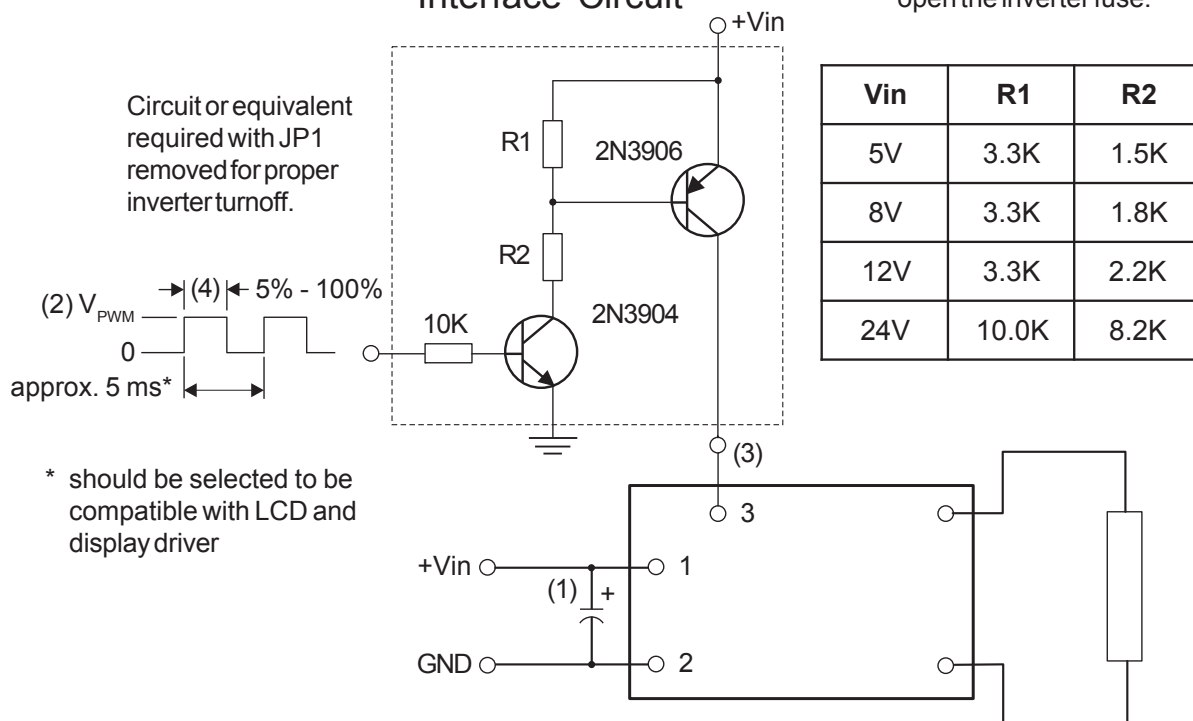
Made in USA

## PWM Dimming

(Valid only with JP1 removed)

### Required User Enable/Disable Interface Circuit

With JP1 in place, a ground applied to the enable pin J1-3 will open the inverter fuse.



- (1) Low ESR type input by-pass capacitor (22  $\mu$ F - 100  $\mu$ F) may be required to reduce reflected ripple.
- (2)  $V_{PWM}$  from 2.4V to less than or equal to +Vin.
- (3) Full brightness without PWM control requires that pin 3 be tied to +Vin. Pin 3 must be at 0V to turn off.
- (4) Duty Cycle 5% - 100%.