



Endicott Research Group, Inc.

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<http://www.ergpower.com>

## Specifications and Applications Information

12/29/08

Preliminary

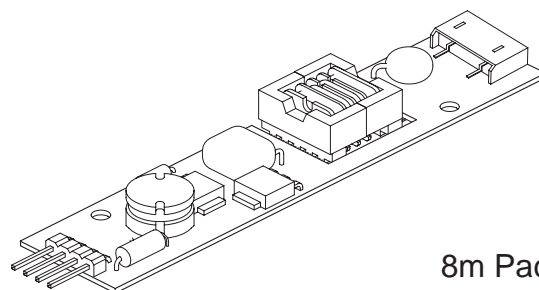
The ERG 8m052038 (**8m Class**) low profile dc to ac inverter is specifically designed to power the Sharp LQ5AW116 and LQ5AW136 LCD display modules to a moderate brightness level from a +5 volt dc source.

This low profile inverter features:

- ✓ Less Than 8 mm in Height
- ✓ 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

# 8m052038

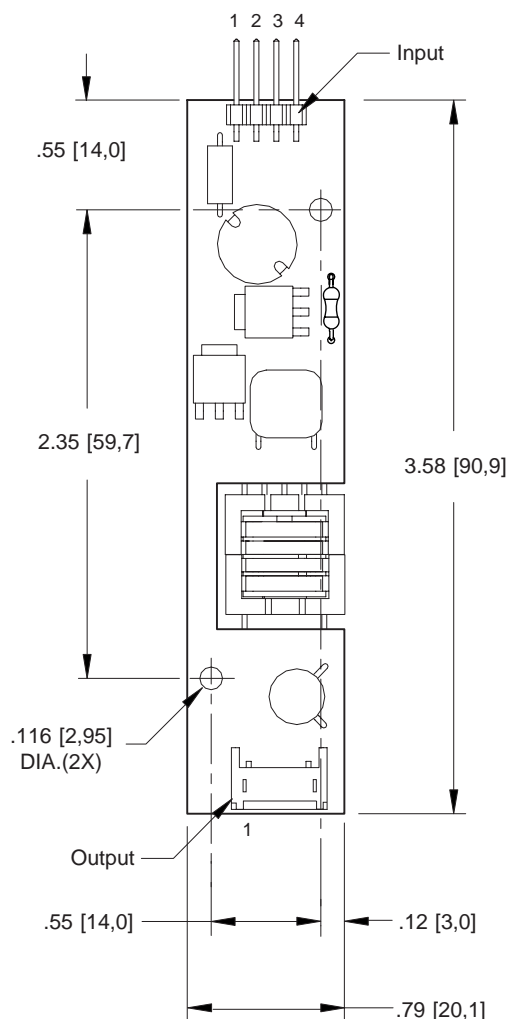
**8m Class**  
Single Lamp  
DC to AC Inverter



**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.

### Connectors

#### Input Connector

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

#### Output Connector

JST  
SM02(8.0)B-BHS-1-TB

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

J2-1 ACreturn  
J2-2 ACout

## 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 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 2)	$T_s$	-20	-	+80	°C
Input Current (note 1)	$I_{in}$	-	1.0	1.1	Adc
Operating Frequency	$F_o$	46	53	60	kHz
Minimum Output Voltage (note 3)	$V_{out} \text{ (min)}$	1500	-	-	Vrms
Efficiency	$\eta$	-	76	-	%
Output Current (per lamp)	$I_{out}$	-	6.5	-	mArms
Output Voltage	$V_{out}$	-	585	-	Vrms
Enable Pin Input Current Requirement (note 4)	$I_{Enable}$	-	10.6	-	mAdc

Specifications subject to change without notice.

(Note 1) 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 2) Surface temperature must not exceed 80 degrees C; thermal management actions may be required.

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

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

### 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) Contact ERG for possible exceptions.



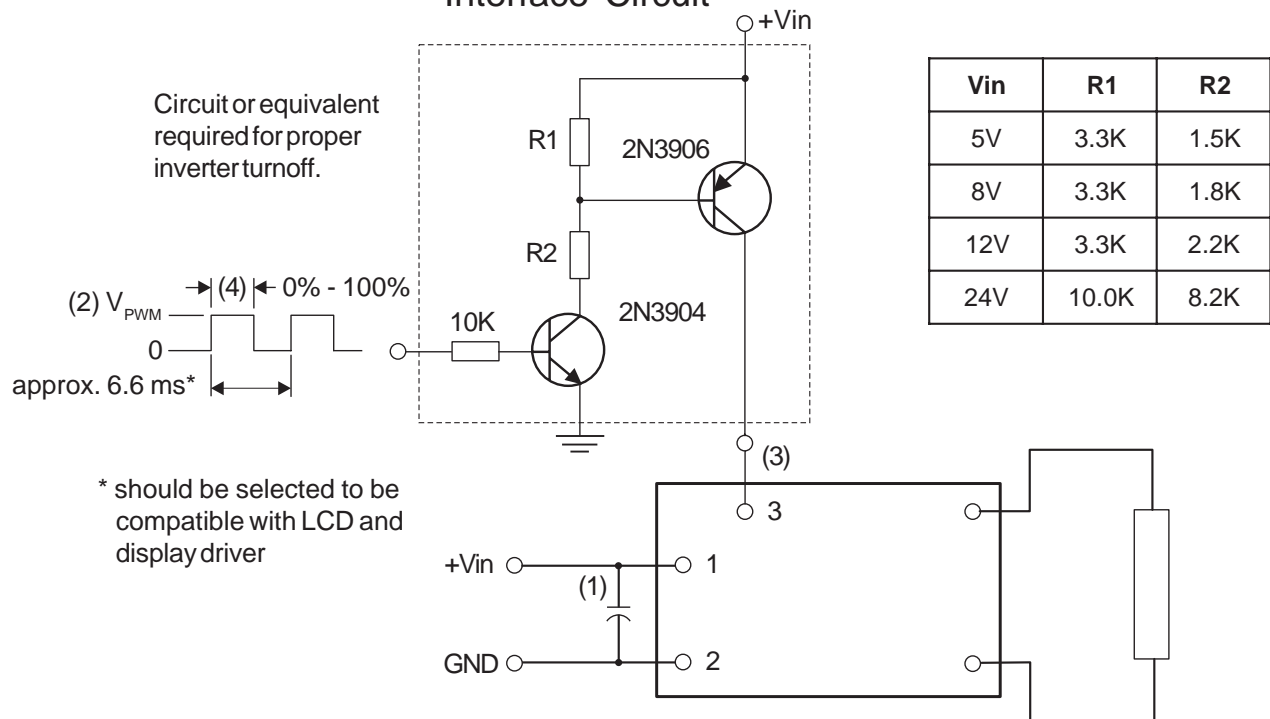
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Made in USA

## PWM Dimming

### Required User Enable/Disable Interface Circuit



- (1) Low ESR type input by-pass capacitor (22 uf - 100 uf) may be required to reduce reflected ripple.
- (2)  $V_{PWM}$  from 2.4V to less than or equal to  $V_{in}$ .
- (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 0% - 100%.