



Endicott Research Group, Inc.

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# 8mA23796F



## Specifications and Applications Information

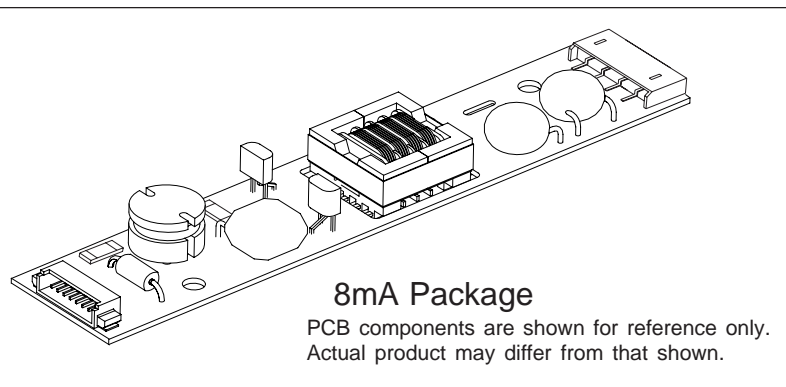
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Preliminary

The ERG 8mA23796F (*8m Class*) low profile dc to ac inverter is specifically designed to power the Sharp LQ084S3LG01 display to a moderate brightness level from a +12 volt dc source.

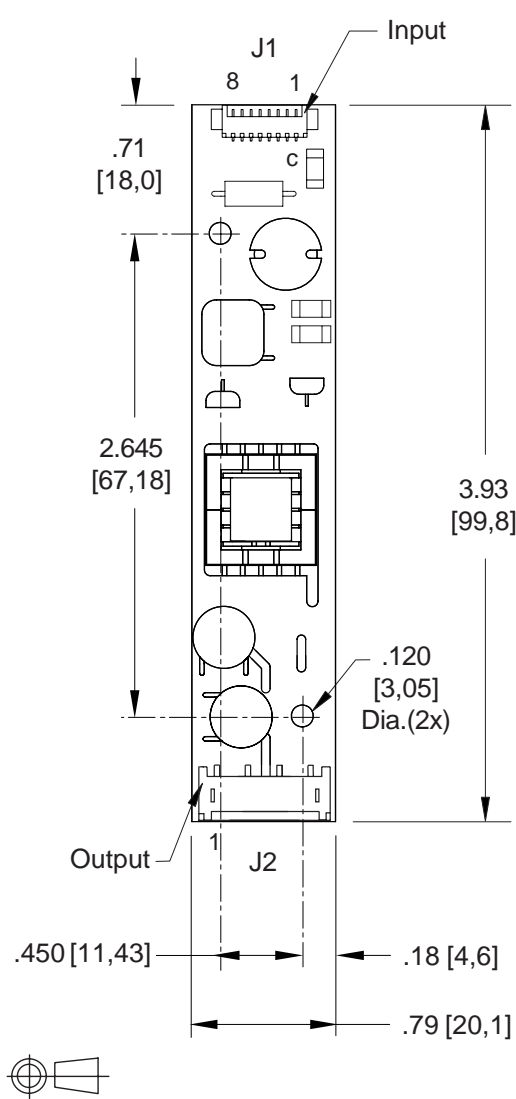
This low profile inverter features:

- ✓ 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



### Two Lamp DC to AC Inverter

### Package Configuration



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

#### Pin Descriptions

J1-1 +Vin	J2-1 ACout
J1-2 +Vin	J2-2 ACout
J1-3 GND	J2-3 N/C
J1-4 GND	J2-4 ACreturn
J1-5 Enable *	
J1-6 N/C	
J1-7 N/C	
J1-8 GND	

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

Connectors	
Input J1 Molex 53261-0871	Output J2 JST SM04(4.0)B-BHS-1-TB

## Absolute Maximum Ratings

Rating	Symbol	Value	Units
Input Voltage Range	$V_{in}$	-0.3 to +13.2	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  $V_{in} = 12.00$  Volts dc and  $T_a = 25^\circ\text{C}$ .

Characteristic	Symbol	Min	Typ	Max	Units
Input Voltage	$V_{in}$	+10.8	+12.0	+12.6	Vdc
Component Surface Temperature (note 1)	$T_s$	-20	-	+80	°C
Input Current (note 2)	$I_{in}$	-	0.50	0.58	Adc
Operating Frequency	$F_o$	39	44	49	kHz
Minimum Output Voltage (note 3)	$V_{out} \text{ (min)}$	1250	-	-	Vrms
Efficiency	$\eta$	-	86	-	%
Output Current (per lamp)	$I_{out}$	-	6.1	-	mArms
Output Voltage	$V_{out}$	-	425	-	Vrms
Enable Pin Input Current Requirement (notes 4,5,6)	$I_{Enable}$	-	4.4	-	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 J1-5 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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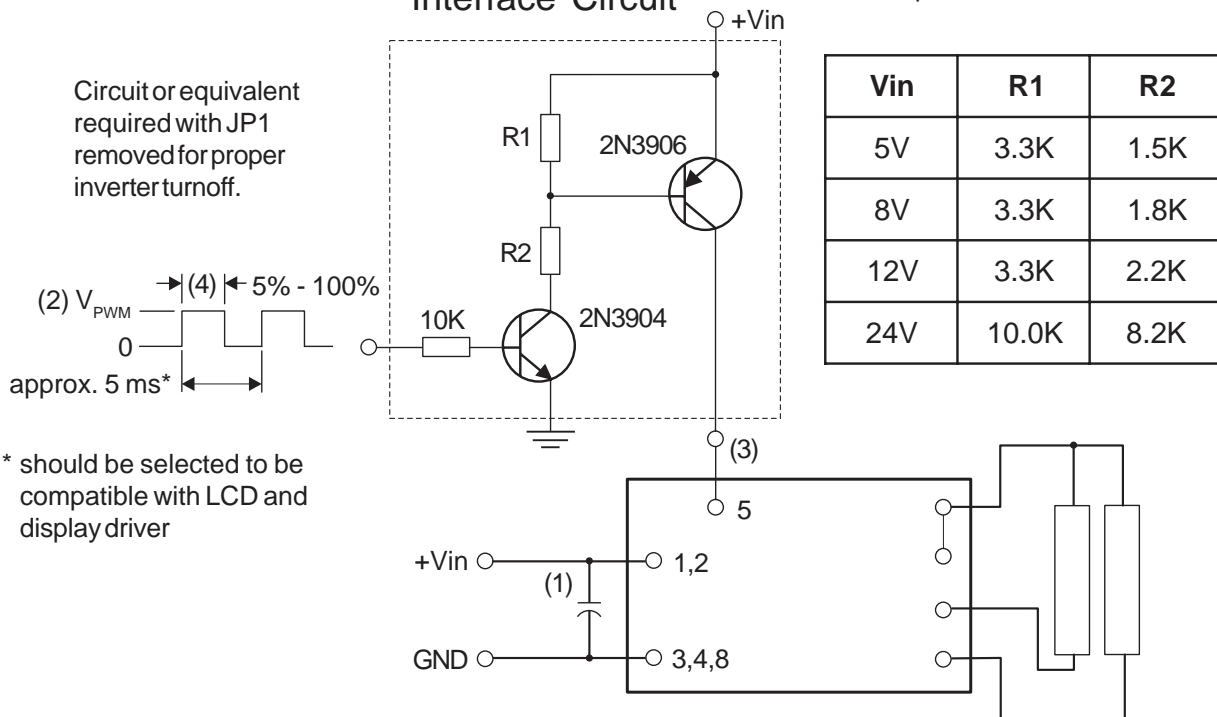
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## PWM Dimming

(Valid only with JP1 removed)

### Required User Enable/Disable Interface Circuit

With JP1 in place, a ground applied to the enable pin J1-5 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)  $V_{P_{PWM}}$  from 2.4V to less than or equal to +Vin.
- (3) Full brightness without PWM control requires that pin 5 be tied to +Vin. Pin 5 must be at 0V to turn off.
- (4) Duty Cycle 5% - 100%.