



Endicott Research Group, Inc.

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8mA23603F



Specifications and Applications Information

02/20/08

Preliminary

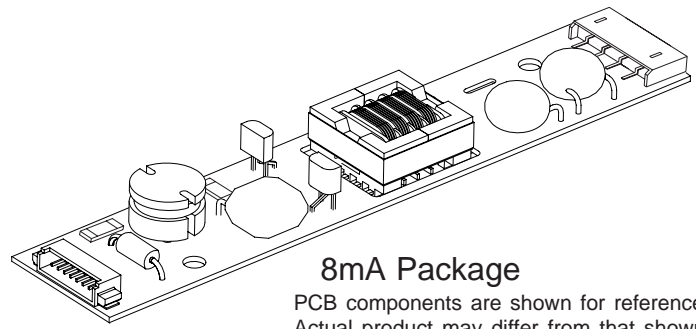
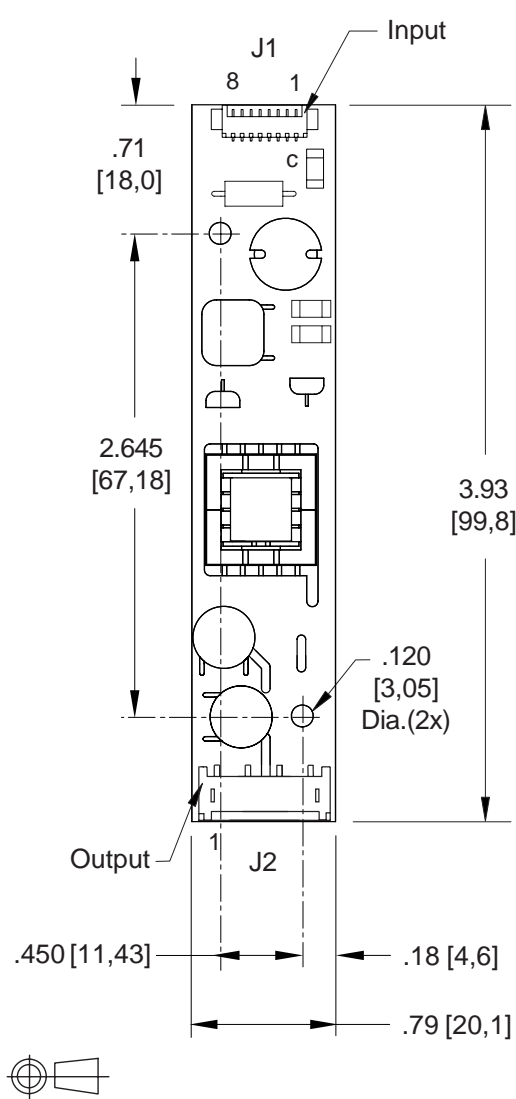
Two Lamp DC to AC Inverter

The ERG 8mA23603F (8m Class) low profile dc to ac inverter is specifically designed to power the NEC NL8048BC24-01 LCD display module 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

Package Configuration



8mA Package

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 ACreturn
J1-4 GND	J2-4 ACreturn
J1-5 Enable *	
J1-6 N/C	
J1-7 N/C	
J1-8 GND	

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

Connectors

Input J1 Molex 53261-0871	Output J2 JST SM04(4.0)B-BHS-1-TB
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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 2)	T_s	-20	-	+80	°C
Input Current ^(note 1)	I_{in}	-	0.45	0.52	Adc
Operating Frequency	F_o	28	33	38	kHz
Minimum Output Voltage ^(note 3)	V_{out} (min)	1500	-	-	Vrms
Efficiency	h	-	87	-	%
Output Current (per lamp)	I_{out}	-	5.0	-	mArms
Output Voltage	V_{out}	-	470	-	Vrms
Enable Pin Input Current Requirement ^(notes 4,5,6)	I_{enable}	-	4.0	-	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.

(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) Contact ERG for possible exceptions.



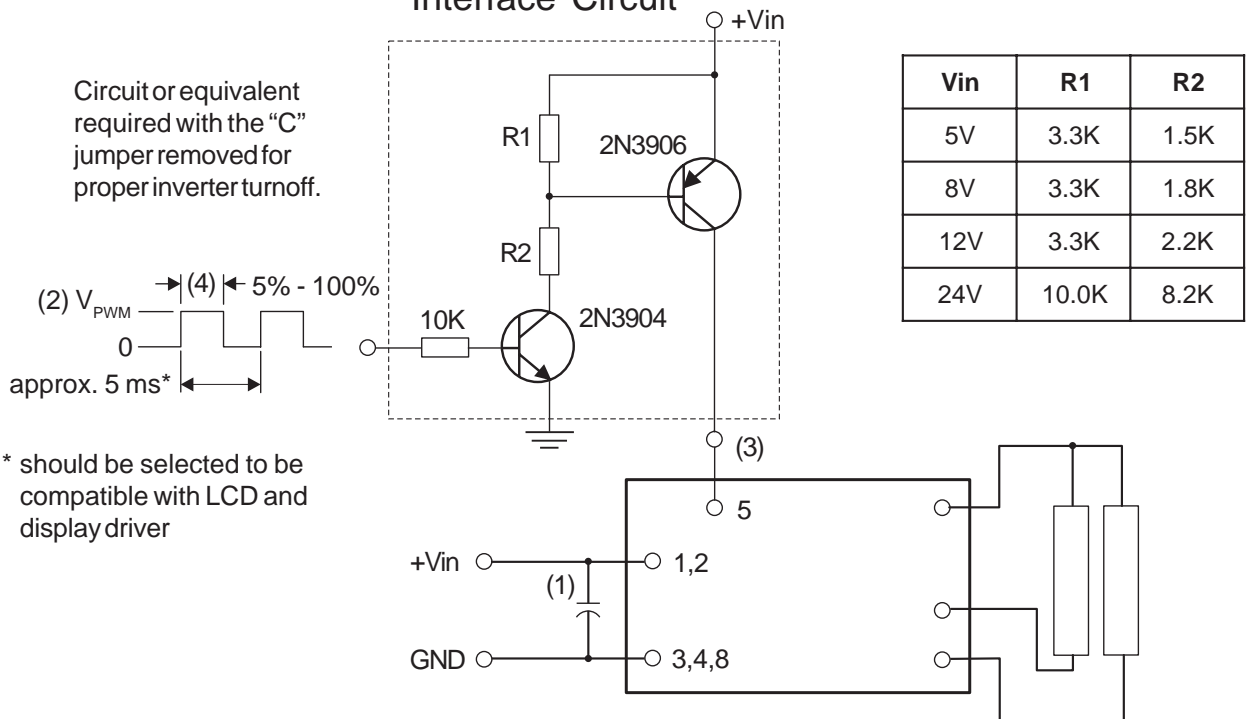
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PWM Dimming

(Valid only with the "C" jumper (JP1) removed)

Required User Enable/Disable Interface Circuit



With the "C" jumper (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 uF - 100 uF) may be required to reduce reflected ripple.
- (2) V_{PWM} from 2.4V to less than or equal to 13.2V.
- (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%.