Endicott Research Group, Inc.
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10mA3595

Specifications and Applications Information

03/04/08 Preliminary

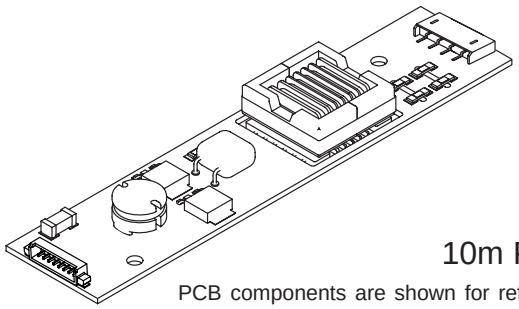
10m Class
Two Lamp
DC to AC Inverter

The ERG 10mA3595 (**10m Class**) low profile dc to ac inverter is specifically designed to power the following display module(s) to a moderate brightness level from a +12 volt dc power supply:

- NEC NL8060BC31-42(D)

This low profile inverter features:

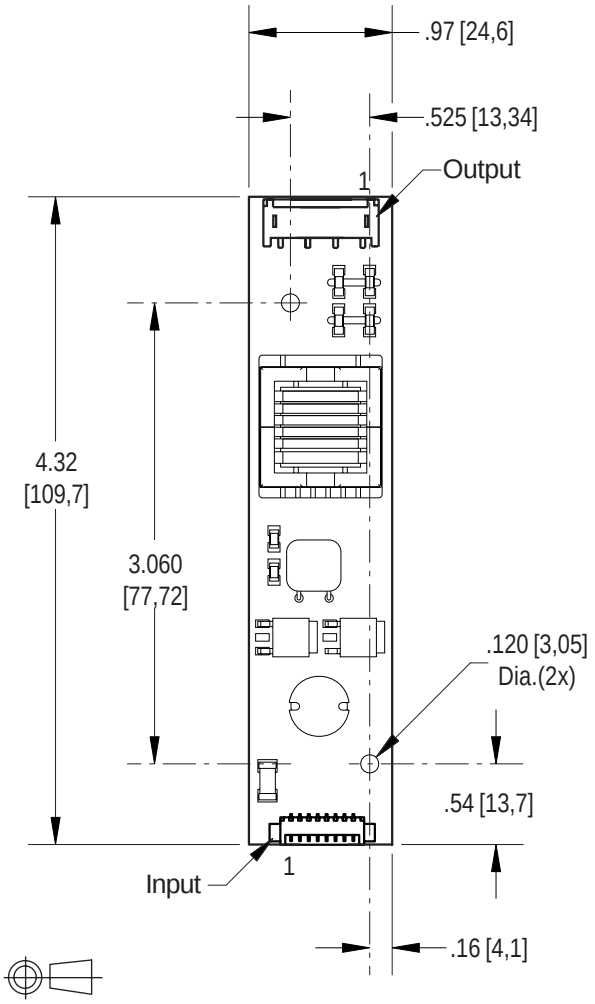
- ✓ Less Than 10 mm in Height
- ✓ LCD Module Specific
- ✓ Display Compatible Output Connector
- ✓ Firm Specifications
- ✓ Application Information
- ✓ Designed, Manufactured and Supported in the USA
- ✓ Custom Input and Output Voltages
- ✓ Flexible System Interface



10m 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.

Mass: 22 grams

Connectors	
Input Connector Molex 53261-0871	**Output Connector** JST SM04(4.0)B-BHS-1-TB
J1-1,2 +Vin J1-3,4 GND J1-5 Enable J1-6,7,8 N/C	J2-1 ACout J2-2 ACout J2-3 ACreturn J2-4 ACreturn

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 Vin = 12.00 Volts dc and Ta = 25°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}	-	0.60	0.69	Adc
Operating Frequency	F_o	35	40	45	kHz
Minimum Output Voltage (note 3)	V_{out} (min)	1600	-	-	Vrms
Efficiency	**h**	-	81	-	%
Output Current (per lamp)	I_{out}	-	5.2	-	mArms
Output Voltage	V_{out}	-	560	-	Vrms
Enable Pin Input Current Requirement (note 4)	I_{enable}	-	4.9	-	mAdc
Enable Pin Input Voltage Requirement (note 4)	V_{enable}	**Off** 0 or Floating	**On** 12.0	**On** 13.2	Vdc

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.

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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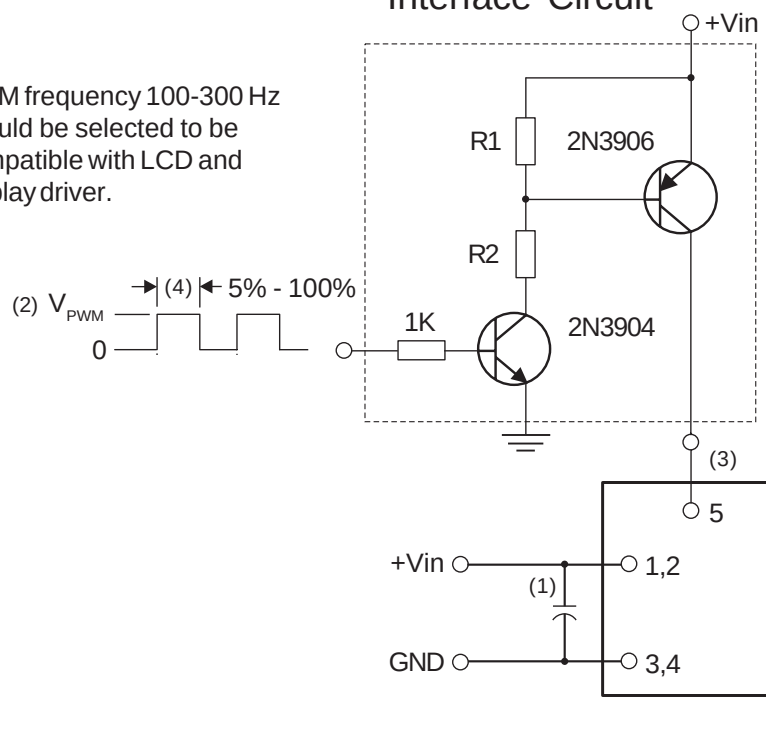
Made in USA

PWM Dimming

Circuit or equivalent required for proper inverter turnoff.

PWM frequency 100-300 Hz should be selected to be compatible with LCD and display driver.

Required User Enable/Disable Interface Circuit



Vin	R1	R2
5V	3.3K	1.5K
8V	3.3K	1.8K
12V	3.3K	2.2K
24V	10.0K	8.2K

(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%.