



Endicott Research Group, Inc.

2601 Wayne St., Endicott, NY 13760
607-754-9187 Fax 607-754-9255
http://www.ergpower.com

MS262777

Specifications and Applications Information

05/01/04

Preliminary

The ERG MS262777 DC to AC inverter features onboard connectors and can be easily dimmed using an external pulse-width modulated control signal or using the onboard PWM with an external analog voltage. This unit is only 17mm in height and the four mounting holes makes installation very straight forward.

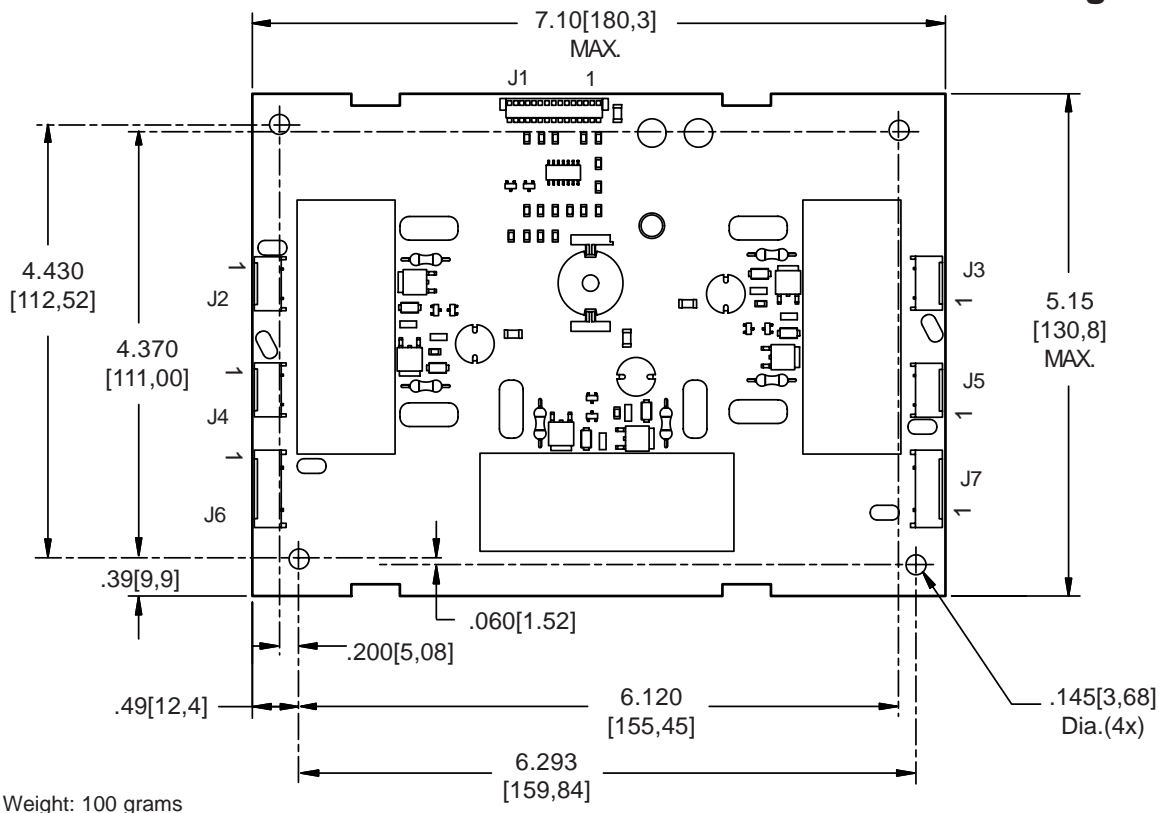
Powered by a regulated +12 volt DC source the MS262777 is specially designed to power the Samsung LTM240W1-L01 display.

Six Tube
DC to AC Inverter

Product Features

- ✓ Encapsulated high voltage transformers.
- ✓ High Efficiency
- ✓ Made in U.S.A.
- ✓ Excellent dimming range.

Package Configuration



Weight: 100 grams

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

Connectors and Pin Descriptions

J1		J2-J5		J6,J7	
Molex 53398-1590		JST SM02(8.0)B-BHS-1-TB		JST SM02(12.0)B-BHS-1-TB	
J1-1	+Vin	J2-J5-1	ACout	J6,J7-1	ACout
J1-2	+Vin	J2-J5-2	NC	J6,J7-2	NC
J1-3	+Vin	J2-J5-3	ACout	J6,J7-3	NC
J1-4	+Vin			J6,J7-4	ACout
J1-5	+Vin				
J1-6	+Vin				
J1-7	GND				
J1-8	GND				
J1-9	Test Point				
J1-10	GND				
J1-11	GND				
J1-12	Enable				
J1-13	GND				
J1-14	Control				
J1-15	GND				



Absolute Maximum Ratings (Note 1)

Rating	Symbol	Value	Units
Input Voltage	V_{in}	-0.3 to +15	Vdc
Operating Temperature	T_a	-0 to +85	°C
Storage Temperature	T_s	-40 to +85	°C

Recommended Operating Conditions

Rating	Symbol	Value	Units
Input Voltage	V_{in}	+10.8 to 12.6	Vdc
Operating Temperature <small>(Note 2)</small>	T_a	0 to +50	°C

Electrical Characteristics

Unless otherwise noted $V_{in} = 12.00$ Volts dc and $T_a = 25^\circ\text{C}$

Characteristic	Symbol	Min	Typ	Max	Units
Input Current	I_{in}	-	4.44	5.2	A_{DC}
Input Ripple Current	I_{rip}	-	50	-	mA_{pk-pk}
Operating Frequency	F_o	26	31	36	KHz
Efficiency	η	-	87	-	%
Output Voltage (no load)	V_{start}	2300	-	-	V
Output Voltage (with lamp) <small>(Note 4)</small>	V_{out}	-	1200 800	-	V
Output Current (per tube)	I_{out}	-	9.6	-	mA_{rms}
Disable/Enable (pin J1-12)					
Turn-off Threshold	V_{thoff}	-	-	2.0	V
Turn-On Threshold	V_{thon}	4.0	-	-	V
Impedance to V_{in}	$R_{disable}$	9.5	10	10.5	KOhms

(Note 1) Reliable and predictable operation of the device is not guaranteed with applied stresses at or beyond those listed in "Absolute Maximum Ratings". Operation at these limits may reduce device reliability and is therefore not recommended. Please refer to "Recommended Operating Conditions" for reliable operation of the device.

(Note 2) Reliable operation above 50°C is possible if airflow is provided.

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

(Note 4) Volt = 800V used for efficiency calculation.

Input voltage specification modified for clarity on 5/2004.



Onboard PWM

Unless otherwise noted $V_{in} = 12.00$ Volts DC , $T_a = 25$ °C and unit has been running for 5 minutes.

Characteristic	Symbol	Min	Typ	Max	Units
Frequency	f_{pwm}	-	160	-	Hz
Control Input Bias Current	I_{cbias}	-	-	10	μA

Pin Descriptions

- Vin** Input voltage to the inverter. All pins should be connected for optimum reliability and efficiency .
- GND** Inverter ground. All pins should be connected for optimum reliability and efficiency.
- Control** Analog voltage input to the onboard pulse width modulator. Increasing this voltage increases the off time of the onboard PWM resulting in decreased brightness.
- Disable/Enable** Inverter disable. Pull this pin low to disable inverter operation. If this pin is left floating or driven high, the inverter is enabled.

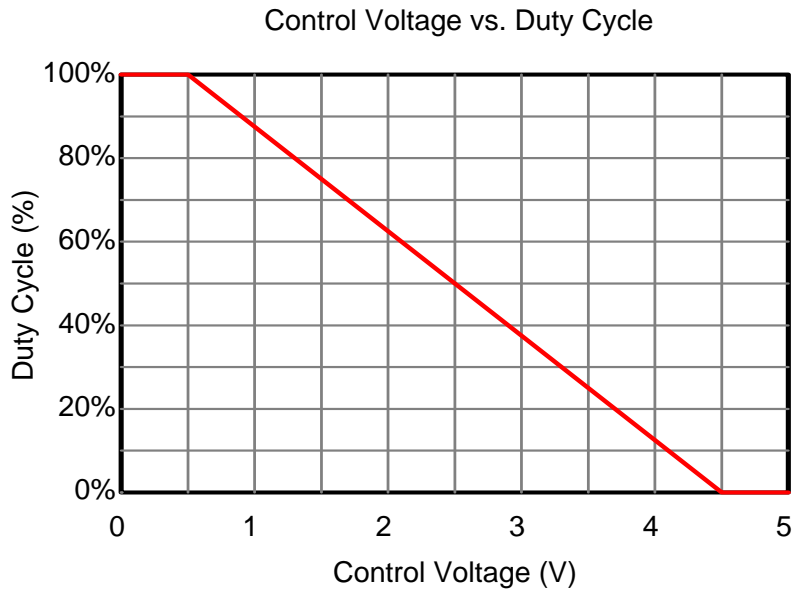
Application information

The MS262777 is designed to power six cold cathode fluorescent tubes with combined power of 50 watts.

External shutdown of the inverter is accomplished using the Disable pin. Pulling this pin low (below V_{thoff}) disables the inverter. Enabling the inverter is accomplished by pulling this pin high (above V_{thon}).

An analog voltage applied to the control pin will activate the on board PWM circuit. Figure 1 shows how to connect the inverter for onboard PWM operation. Graph 1 shows the relationship of PWM duty cycle to input control voltage.

An external PWM circuit may be used by applying this signal to the enable input while connecting the control input to ground.



Graph 1

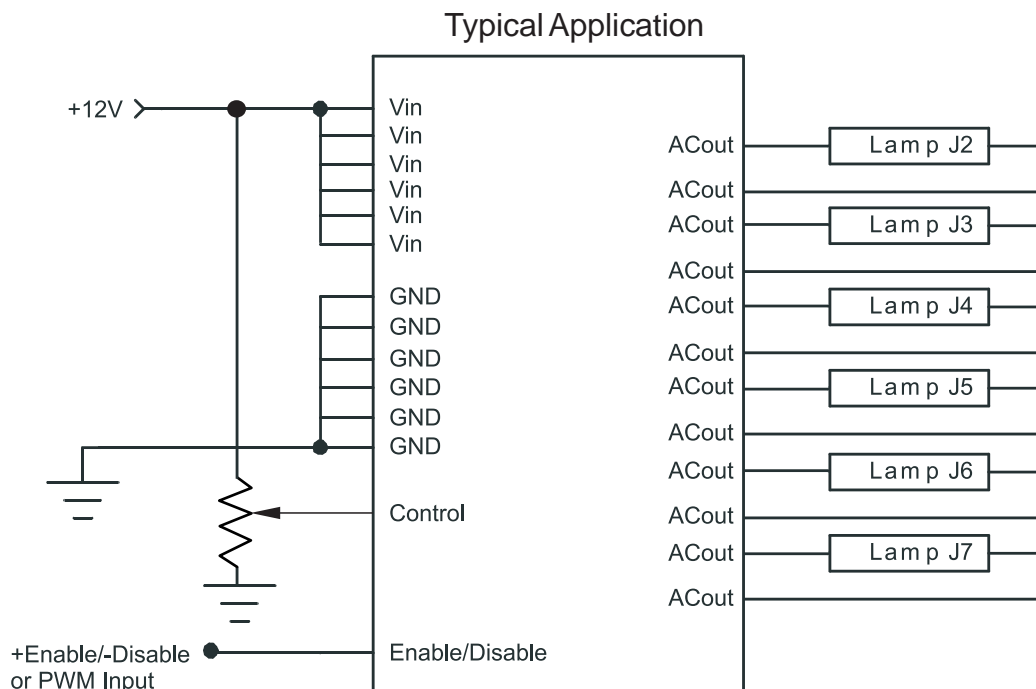


Figure 1



Endicott Research Group, Inc. (ERG) reserves the right to make changes in circuit design and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets are current before placing orders. Information furnished by ERG is believed to be accurate and reliable. However, no responsibility is assumed by ERG for its use.