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Specifications and Applications Information

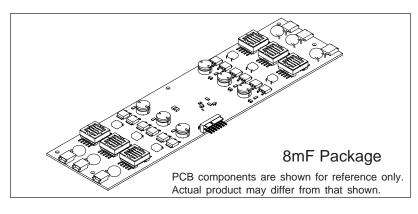
05/01/04 Preliminary

The ERG 8mF62763 (8mF Series) 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 less than 9mm in height and the six mounting holes makes installation very straight forward.

Powered by a regulated 12 Volt DC source, the 8mF62763 is designed to power the LG Philips LM181E05-C3 6 tube backlight, with onboard PWM.

Product Features

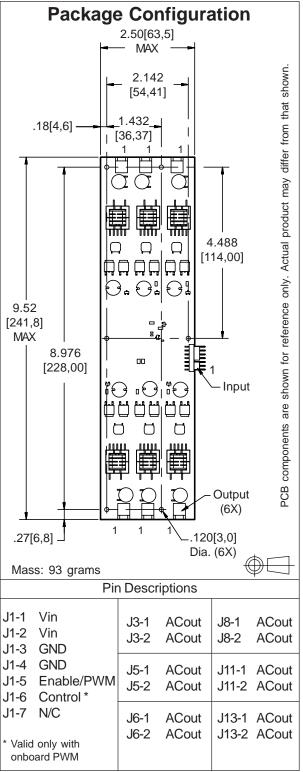
- ✓ Small Package Size, less than 9mm in height.
- ✓ High Dimming Ratio (Greater than 1000:1)
- ✓ High Efficiency
- ✓ Made in U.S.A.



Connectors			
Input	Output (6X)		
Molex 22-05-3071	JST SM02B-BHSS-1-TB		

8mF62763

Six Tube DC to AC Inverter





Absolute Maximum Ratings (Note 1)

Rating	Symbol	Value	Units	
Input Voltage	V _{in}	-0.3 to +13.2	V _{DC}	
Disable	V _{Disable}	-0.3 to +0.3	V _{DC}	
Operating Temperature	T _a	-0 to +70	°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 (Note 2)	T _a	0 to +70	°C

Electrical Characteristics

Unless otherwise noted Vin = 12.00 Volts dc and Ta = 25°C and unit has been running for 20 minutes.

Characteristic	Symbol	Min	Тур	Max	Units
Input Current	I in	-	2.7	3.1	A _{DC}
Input Ripple Current	l rip	-	60	-	mA _{pk-pk}
Operating Frequency	F _o	33	38	43	KHz
Efficiency	h	-	89	-	%
Output Voltage (no load)	V _{start}	1500	-	-	V
Output Voltage (with lamp)	V _{out}	-	715	-	V
Output Current (per tube)	I out	-	7.4	-	mArms
Enable (pin J1-5)					
Turn-off Threshold	V thoff	-	-	2	V
Turn-On Threshold	V thon	4	-	-	V
Impedance to Vin	R _{Disable}	45	47	50	V

⁽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 70°C is possible if airflow is provided.

Input voltage specification modified for clarity on 5/2004.



Onboard PWM

Unless otherwise noted Vin = 12.00 Volts DC , T_a = 25 °C and unit has been running for 20 minutes.

Characteristic	Symbol	Min	Тур	Max	Units
Frequency	fpwm	-	160	-	Hz
Control Full On	V _{ctrll}	-	<.5	-	V
Control Full Off	V _{ctrlh}	-	>4.5	-	V
Control Input Bias Current	I cbias	-	-	10	uA

Pin Descriptions

GND Inverter ground. Both 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.

Enable/ Inverter Enable/Disable. If this pin is driven high, the inverter is enabled. Pull this pin low to disable

Disable inverter operation.

Application information

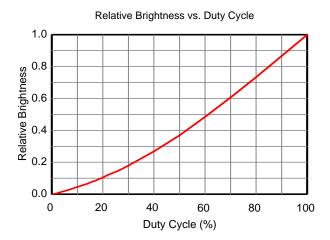
The 8mF series of inverters is designed to power up to six cold cathode fluorescent tubes with combined power from ten watts to forty watts. An external enable/disable control and an onboard analog controlled pulse width modulator provide flexibility in allowing either PWM or analog methods for dimming. The 8mF inverter can reliably dim to less than 0.5% duty cycle, which results in an electrical dimming ratio of greater than 200:1. Depending upon the attached backlight assembly, optical dimming ratios of greater than 1000:1 can be accomplished. Graph 1 shows the relationship of relative brightness to duty cycle for a typical backlight assembly.

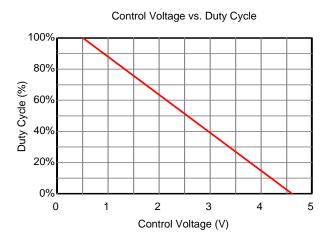
External shutdown or external PWM operation of the inverter is accomplished using the Enable/Disable pin. Enabling the inverter is accomplished by pulling this pin high (above Vthon). Pulling this pin low (below Vthoff) disables the inverter.

If analog voltage dimming is required, the onboard PWM can be enabled. The analog voltage is applied to the Control pin. Figure 1 shows how to connect the inverter for onboard PWM operation. Graph 2 shows the relationship of PWM duty cycle to input control voltage.

If more than one inverter is used in a backlight assembly, the PWM signal for each inverter should be synchronized to prevent flickering. Connect the Enable/Disable pin of each inverter to the external PWM source.

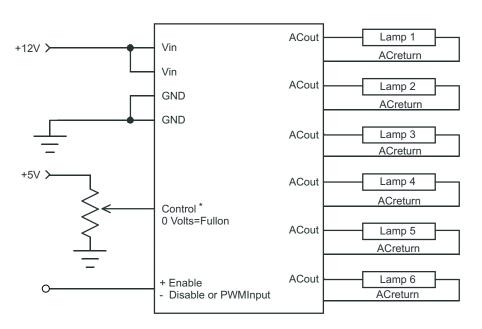






Graph 1 Graph 2

Typical Application



^{*} Valid only with onboard PWM

Figure 1



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