

new product
information

**PANELMATCH™ STAYLIT™ CCFL
INVERTERS LXMG1626-XX-45/46
6W DUAL OUTPUT**

New Product Information and Sales Kit

Manufactured by:
Microsemi Integrated Products
Garden Grove
Telephone: 714-898-8121

www.Microsemi.com

More than solutions – enabling possibilities

INTRODUCTION

CONFIDENTIAL INFORMATION

This new product introduction guide is intended for use only by Microsemi's sales people and authorized representatives and distributors. This material can be adapted for customer presentations, but the sales strategy and summary [pricing, availability, etc.] is confidential and should not be shown to customers

DESCRIPTION

The LXMG1626-05-45, LXMG1626-12-45, LXMG1626-05-46 and the LXMG1626-12-46 are new Direct Drive CCFL (Cold Cathode Fluorescent Lamp) Inverter Modules. They are specifically designed to match with some LCD panels not covered by Microsemi's previously released inverters and/or to provide lower cost, higher performance inverters to replace our aging LXMG1621-02/03 inverters.

Microsemi is introducing the new feature StayLIT™ with these inverters. StayLIT™ allows the display to remain operating even with the failure of one of the two lamps. If a single lamp opens or is shorted, the inverter will continue to properly and safely drive the remaining lamp while signaling that a failure has occurred with a FAULT output pin. This feature is particularly useful in higher reliability applications (medical, banking, POS) where the display must keep operating (albeit at lower brightness) until repairs can be made. The FAULT output pin allows the inverter to signal the user that the display is in need of repair.

Like the earlier Microsemi inverter modules, they provide the designer with a vastly superior display brightness range and are ideal for driving 6.4" to 9" dual lamp common return TFT displays.

All four inverters include the PanelMatch™ feature which simplifies the matching of these inverters to corresponding LCD panel specifications. A dedicated pin on the input connector, 'SET' allows the user to externally program the maximum output current in two steps, so the inverter's current can be 'matched' to the LCD panel specification. Since the same inverter will be able to match (be adapted to) a wider range to LCD panels the feature will simplify the supply chain and procurement process and is key selling point to end customer running several projects or to distributors.

Other inverter benefits include a wide temperature rating of -20°C to 70°C, stable fixed-frequency operation, secondary-side strike voltage regulation, and both open and shorted lamp protection with fault timeout.

Products are released only as RoHS compliant version. No Leaded version is available. These new modules – as all modules – are part of Microsemi Registration Program.

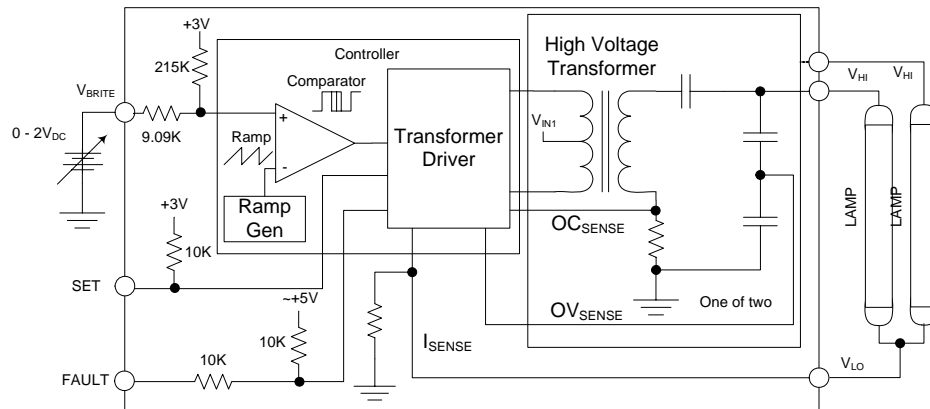
With these new additions to the PanelMatch™ family and first StayLit™ family Microsemi continues its tradition of providing robust, flexible and cost effective backlight inverter solutions.



KEY PRODUCT INFORMATION

LXMG1626-05-45 / LXMG1626-12-45

BLOCK DIAGRAM



KEY FEATURES AND BENEFITS

- T SM04(4.0)B-BHS-1-TB Output (high, high, nc, low)
- Designed to Drive 8.4" to 9" Common Return Dual Lamp LCD Panels
- StayLIT™ Feature Maintains Illumination During Single Lamp Failure and Signals the End User Maintenance is Necessary (FAULT Output Signal)
- 5V or 12V Input Supply
- Single JS Feature Maintains Illumination During Single Lamp Failure and Signals the End User Maintenance is Necessary (FAULT Output Signal)
- Up to 6W Total Output Power
- External Programmability of the Output Current (PanelMatch™) Allows Inverter to Mate With a Wide Variety of LCD's
- RangeMAX™ Wide Range Flicker Free Dimming
- Easy to Use Brightness Control Allows Smooth, Flicker Free Dimming
- Output Short-Circuit Protection ,Timeout
- Automatic Strike-Voltage Regulation and Timeout
- Rated From -20 to 70°C
- RoHS Compliant & UL60950 Certified Component (file number E175910)

APPLICATIONS

- Medical, Industrial Display Controls
- Desktop Displays
- POS displays and Factory Automation
- Applications where continued safe operation is key

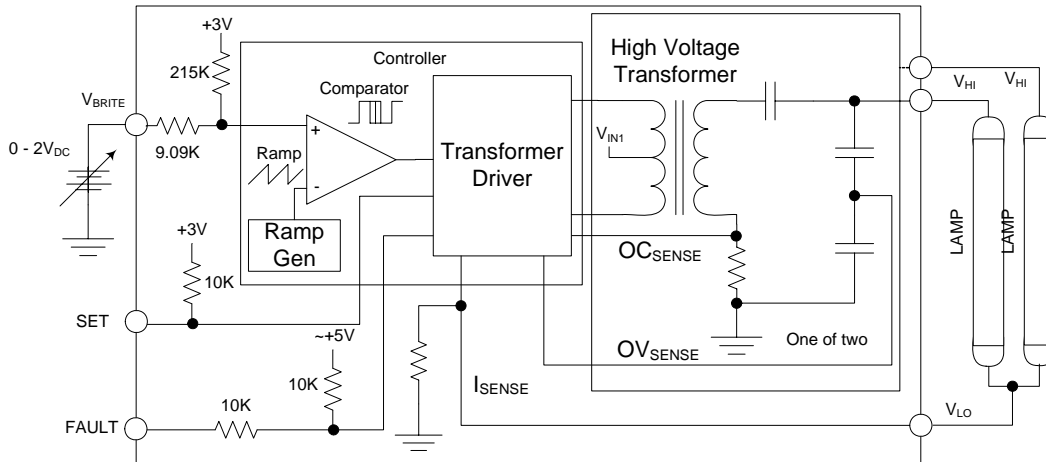


New Product Information and Sales Kit

KEY PRODUCT INFORMATION

LXMG1626-05-46 / LXMG1626-12-46

BLOCK DIAGRAM



KEY FEATURES AND BENEFITS

- 5V or 12V Input Supply
- Single JST SM04(4.0)B-BHS-1-TB Output (high, high, nc, low)
- Designed to Drive 6.4 to 8.4" Common Return Dual Lamp LCD Panels
- StayLIT™ Feature Maintains Illumination During Single Lamp Failure and Signals the End User Maintenance is Necessary (FAULT Output Signal)
- Up to 6W Total Output Power
- External Programmability of the Output Current (PanelMatch™) Allows Inverter to Mate With a Wide Variety of LCD's
- RangeMAX™ Wide Flicker Free Range Dimming
- Easy to Use Brightness Control Allows Smooth, Flicker Free Dimming
- Output Short-Circuit Protection ,Timeout
- Automatic Strike-Voltage Regulation and Timeout
- Rated From -20 to 70°C
- RoHS Compliant & UL60950 Certified Component (File number E175910)

APPLICATIONS

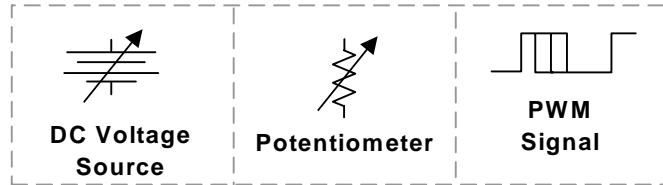
- Medical, Industrial Display Controls
- Desktop Displays
- POS displays and Factory Automation
- Applications where continued safe operation is key



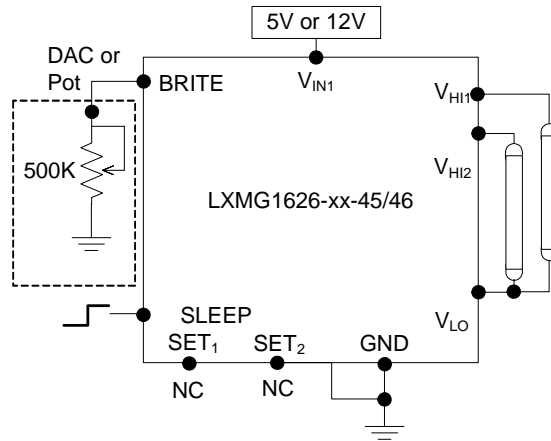
New Product Information and Sales Kit

COMMON FEATURES AND APPLICATIONS

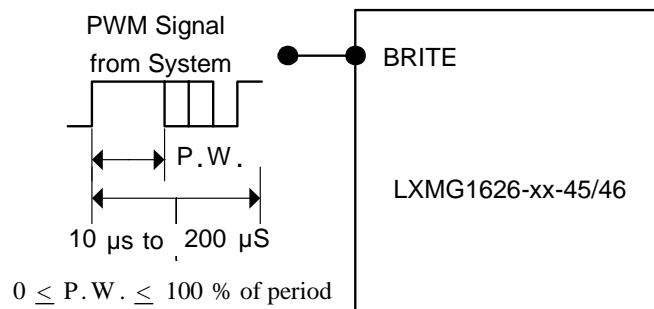
UNIVERSAL DIMMING INPUT "PWM", V_{DC} , OR POTENTIOMETER



DC Source or Potentiometer

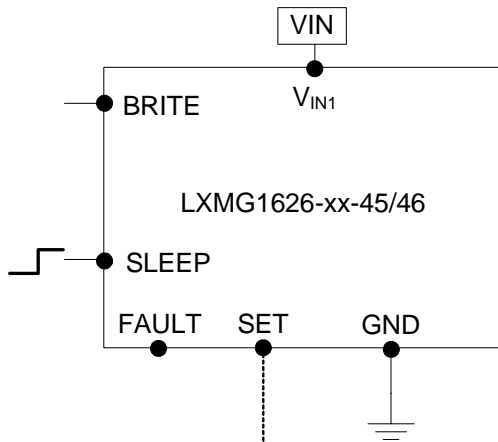


PWM Signal



COMMON FEATURES AND APPLICATIONS

Programmable Maximum Output Current

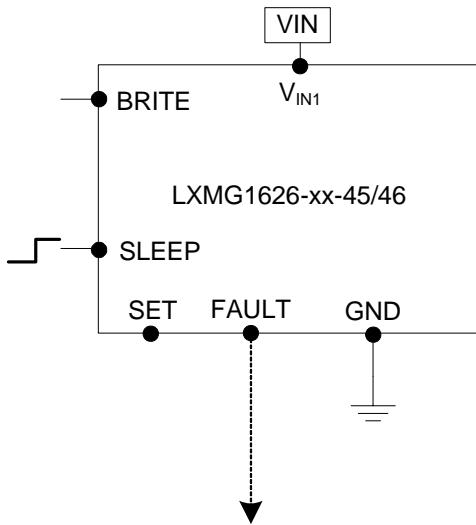


OUTPUT CURRENT SETTINGS LXMG1626-xx-45/46	
SET (Pin 7)	Nominal Output Current (Each Lamp Pair)
Open*	12.0mA
Ground	10.0mA

* If driven by a logic signal it should be open collector or open drain only, not a voltage source.

COMMON FEATURES AND APPLICATIONS

StayLIT™ Feature and FAULT Output Signal



StayLIT™ Operation and FAULT Output Signal LXMG1626-xx-45/46

Lamp(s) Status	FAULT Signal	Inverter Operation
Normal Operation	Low	Normal full lamp current
One Lamp Open	High	Normal @ ~½ lamp current*
Both Lamps Open	High	Inverter Shutdown
One Lamp High Side Short to Ground	High	Normal @ ~½ lamp current*
Both Lamps High Side Short to Ground	High	Inverter Shutdown

* Under some conditions the second lamp could also shutdown, this is especially true if the inverter draws an arc going open or when shorted.

COMPETITIVE ANALYSIS

LXMG1626-05-45/46

Competitor	Device	V _{IN} Range	Maximum Output Current	Physical Dimensions (mm)	Temperature Range / Typ PWM Frequency	StayLIT™ / FAULT
Microsemi	LXMG1626-05-45/46	4.75 to 5.25V	10mA or 12mA	113 x 30 x 6.5	-20° to 70°C / 225Hz	Yes /Yes
ERG	8mA23001	4.5 to 5.25V	12mA	99.8 x20.1 x 8.0	0°C to 70°C	No / No
ERG	8ma23334	4.5 to 5.25V	10mA	99.8 x20.1 x 8.0	-10°C to 70°C	No / No

LXMG1626-12-45/46

Competitor	Device	V _{IN} Range	Maximum Output Current	Physical Dimensions (mm)	Temperature Range/ Typ PWM Frequency	StayLIT™ / FAULT
Microsemi	LXMG1626-12-45/46	10.8 to 13.2V	10mA or 12mA	113 x 30 x 6.5	-20° to 70°C / 225Hz	Yes /Yes
TDK	CXA-0368	10.8 to 13.2V	Fixed 12mA	110 x 22 x 8.5	-10° to 65°C / 175Hz	No /Yes I
TDK	CXA-0420	11.4 to 12.6V	Fixed 10mA	113 x 25 x 7.5	-10° to 75°C / 255Hz	Yes /Yes I
ERG	8mA23002	10.8 to 12.6V	Fixed 12.6mA	99.8 x 20.1 x 8	0°C to 70°C	No / No
ERG	8mAD3003	10.8 to 12.6V	Fixed 12.0mA	99.8 x 20.1 x 8	0°C to 70°C	No / No
ERG	8mA23335	10.8 to 12.6V	Fixed 10.0mA	99.8 x 20.1 x 8	-10°C to 70°C	No / No
NEC	84PW031	10.8 to 13.2V	Fixed 10mA	113 x 27 x 10	-10° to 75°C / 255Hz	Yes /Yes I



COMPETITIVE CROSS

LXMG1626-xx-45

- All crosses are 'functional' only, input connector type and/or pinouts are different for each manufacturer
- Sales should also verify that selected microsemi inverter crosses to actual LCD panel customer is using by using panel cross reference located at <http://www.microsemi.com/products/backlight/overview.asp>

ERG	Microsemi RangeMAX	Notes
8mA23334	LXMG1626-05-45	NOT PIN TO PIN, ERG = analog dimming

TDK	Microsemi RangeMAX	Notes
CXA-0368	LXMG1626-12-45	NOT PIN TO PIN
CXA-0420		NOT PIN TO PIN

NEC	Microsemi RangeMAX	Notes
84PW031	LXMG1626-12-45	NOT PIN TO PIN

ERG	Microsemi RangeMAX	Notes
8mA23335	LXMG1626-12-45	NOT PIN TO PIN, ERG = analog dimming

COMPETITIVE CROSS

LXMG1626-xx-46

- All crosses are 'functional' only, input connector type and/or pinouts are different for each manufacturer
- Sales should also verify that selected microsemi inverter crosses to actual LCD panel customer is using by using panel cross reference located at <http://www.microsemi.com/products/backlight/overview.asp>

ERG	Microsemi RangeMAX	Notes
8mA23001	LXMG1626-05-46	NOT PIN TO PIN, ERG = analog dimming

ERG	Microsemi RangeMAX	Notes
8mA23003	LXMG1626-12-46	NOT PIN TO PIN, ERG = analog dimming
8mAD3003		

MICROSEMI INVERTER FAMILY MATRIX

Type	Typ V _{IN} [V]*	V _{LAMP} Range [V]*	Typ I _{OLAMP} [mA]*	V _{LS} [V]	Min/Typ/Max Dimming	Operating Temp [°C]*	Base PN	Input Cable Available***	Status	DIMENSIONS (L, W, H) [mm]	
Single Lamp	3.3	[260,380]	4	1250/1400	100:1	[0,70]	LXMG1616-03-X	LX9506G	NRND - Please CF	94 x 15 x 4.6	
		[325,435]	3.5 to 5.0	1000/1100	<5:1	[-20,70]	LXMG1618-03-2X		Active	86 x 16 x 4.6	
		[450,620]	5.8	1500/1650	50:1	[0,70]	LXMG1618-05-2X		NRND - Please CF	126 x 16 x 8 86 x 16 x 4.6 86 x 16 x 6.2	
	5	[465,635]	5.0 to 6.5	1300/1400	<5:1	[-20,70]	LXMG1617-05-4X		Active	100 x 16 x 7.5	
		[545,735]	5.0 to 8.0	1400/1650	50:1	[0,70]	LXMG1611-01		NRND - Please CF	100 x 16 x 7.3 126 x 16 x 8	
		[300,600]	5.8	1500/1650	<5:1	[-20,70]	LXMG1618-12-4X		Active	86 x 16 x 4.6 86 x 16 x 6.2	
	12	[465,635]	5.0 to 6.5	1300/1400	50:1	[-20,70]	LXMG1617-12-4X		Active	100 x 16 x 7.5	
		[500,1000]	3.8 to 8.8	/2000	100:1	[-40,85]	LXMG1614E-14-11		Active - AUTOMOTIVE LEVEL	130 x 23 x 8.5	
		[545,735]	5.0 to 8.0	1400/1650	<5:1	[0,70]	LXMG1617-12-6X		Active	100 x 16 x 7.5	
	Dual Lamp	5	[320,420]	5.0 to 6.0	1250/1400	100:1	[0,70]	LXMG1626-05-46		In Development	113 x 30 x 6.2
			[385,485]	5.0 to 6.5	1450/1600	50:1	[-20,70]	LXMG1623-05-4X	LX9501G	Active	115 x 30 x 6.5 108.7 x 22.35 x 10.2
			[350,530]	5.2 to 6.7	1350/1500	100:1	[-20,70]	LXMG1626-05-67		In Development	133 x 25 x 7.5
12		[460,620]	5.0 to 7.0	1400/1650	50:1	[0,70]	LXMG1626-05-66		Active	165 x 21 x 7.5	
		[510,690]	5.0 to 6.5	1400/1500	100:1	[0,70]	LXMG1623-05-6X		In Development	113 x 30 x 6.5	
		[480,720]	5.0 to 8.0	1500/1650	50:1	[-20,70]	LXMG1624-03		Active - NEW	124 x 32 x 8.5	
12		[320,420]	5.0 to 6.0	1250/1400	100:1	[0,70]	LXMG1626-12-46		Active	115 x 30 x 6.5	
		[385,485]	5.0 to 6.5	1450/1600	<5:1	[-20,70]	LXMG1624-12-4X		Active	108.7 x 22.35 x 10.2	
		[350,500]	5.0 to 6.7	1500/1650	50:1	[0,70]	LXMG1623-12-44		Active	133 x 25 x 7.5	
12		[470,640]	5.0 to 7.0	1450/1600	100:1	[0,70]	LXMG1626-12-66		Active	165 x 21 x 7.5	
		[480,720]	5.0 to 8.0	1400/1650	<5:1	[-20,70]	LXMG1621-04		Active	124 x 32 x 8.5	
		[500,750]	6.5	1500/1650	50:1	[0,70]	LXMG1623-12-6X		Active	165 x 21 x 7.5	
12	[510,690]	5.0 to 6.5	1450/1650	100:1	[0,70]	LXMG1621-01		NRND - Please CF	124 x 32 x 7.6		
	[530,720]	5.0 to 8.0	1500/1650	<5:1	[-20,70]	LXMG1626-12-65		NRND - See LXMG1626-12-65	124 x 32 x 8.5 133 x 25 x 7.5		
	[530,730]	5.0 to 8.0	1500/1650	50:1	[-20,70]	LXMG1644-12-61		Active	188 x 36 x 8 188 x 42 x 8		

SALES STRATEGY

Find Sockets

Easy – Look for LCD display usage

Look for High reliability programs needing StayLIT™

Need high efficiency, dim capability and fixed 5V or 12V supply voltage

Need wide range dimming, low profile designs, high degree of safety protection

Positioning

Very little completion in the 5V input versions sell where important to customers

LXMG1626 family offers wide range dimming, often exceeding competition

High efficiency compared to competition, exceptional high power requirements

Universal dimming input (DC Source, Potentiometer or PWM)

Low profile PCB with no high voltage or components on bottom side

PanelMatch™ – programmable maximum output current

StayLIT™ & FAULT Output Capability (Higher reliability Applications)

Overvoltage, overcurrent protection and fault timeout

Low IQ sleep mode

RoHS Compliant / UL 60950 Certified

Important Facts to Remember

- No Pin for Pin Competition
- Verify LCD match to inverter, cross reference available at: <http://www.microsemi.com/products/backlight/overview.asp>
- Both models have one JST SM04(4.0)B-BHS-1-TB output connector and are designed for common return dual lamp configurations

Eligible for Registration



New Product Information and Sales Kit

SUMMARY

Pricing

Device	Package	DC	1000+
LXMG1626-05-45*	Module	\$26.60	Contact Factory
LXMG1626-12-45*	Module	\$26.60	Contact Factory
LXMG1626-05-46*	Module	\$26.60	Contact Factory
LXMG1626-12-46*	Module	\$26.60	Contact Factory

Note: * See competitive inverter cross reference (included in this doc) or panel cross reference on website to match proper inverter to panel

Availability

Samples: December 2006

Production: LXMG1626-12-45 NOW, other versions 1/07

Options

Temperature: Industrial -20 to 70°C

Output Connectors: LXMG1626-05-45 JST SM04(4.0)B-BHS-1-TB
 LXMG1626-12-45
 LXMG1626-05-46
 LXMG1626-12-46

Technical Support

Datasheet: See Microsemi's Website

Application Note: See Datasheet

Factory Contacts

Technical Questions: Beau Brown (714) 372-8419
<mailto:bbrown@microsemi.com>

Marketing Director: Irene Signorino (714) 372-8359
<mailto:isignorino@microsemi.com>

Protected By U.S. Patents: 5,923,129; 5,930,121; 6,198,234; Patents Pending