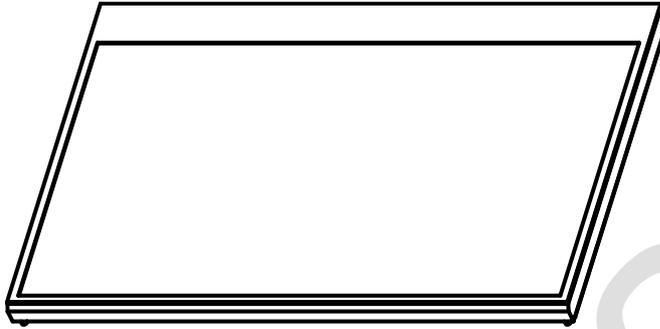


Lightguide for EA DOGL128-6 series



*Dimension 67.5x44x2.8 mm*

## FEATURES

- LOW COST BACKLIGHT SOLUTION FOR GRAPHIC DISPLAYS EA DOGL128-6
- USE CHEAP LED DIES IN ANY COLOR
- SUPER TRANSPARENT FOR LOWEST LOSSES IN BRIGHTNESS AND ENERGY
- EXTREMELY EVEN BRIGHTNESS ALLOVER THE WHOLE AREA
- 3 mm FLAT ONLY
- PREPARED FOR 3, 6 OR 9 LED DIES, MONOCHROM AND RGB
- BRIGHTNESS UP TO 2000 cd/m<sup>2</sup> (WHITE)
- GOOD FOR LARGER QUANTITIES
- FAST ASSEMBLY

## ORDERING CODE

LIGHTGUIDE 67.5x44mm (64.9x36mm) INCL. DIFFUSOR FOIL

**EA LED68X51-PC9A**

## GENERAL

The lightguide EA LED68x51-PC was designed to illuminate LCD graphic displays of EA DOGL128-6 series. It provides a very even backlight without any light spots or dark areas. Mounting is simple because plastic part will be assembled directly to pcb without any tool, soldering or glue.

## LED DIES

LED chip will be assembled to mother board of application. It is recommended to use SMD type only. There are a lot different LED dies that may be used. Please consider your requirement and the requirement of lightguide when choosing LED chip. LED can be connected in series or parallel.

*Note: For parallel connection always use and individual series resistor for each LED path.*

*Note: LED chips do provide different forward voltages depending on production lot. Make sure when calculating series resistor not to exceed maximum current. Different forward voltage leads to different brightness also.*

## DRIVING CIRCUITARY

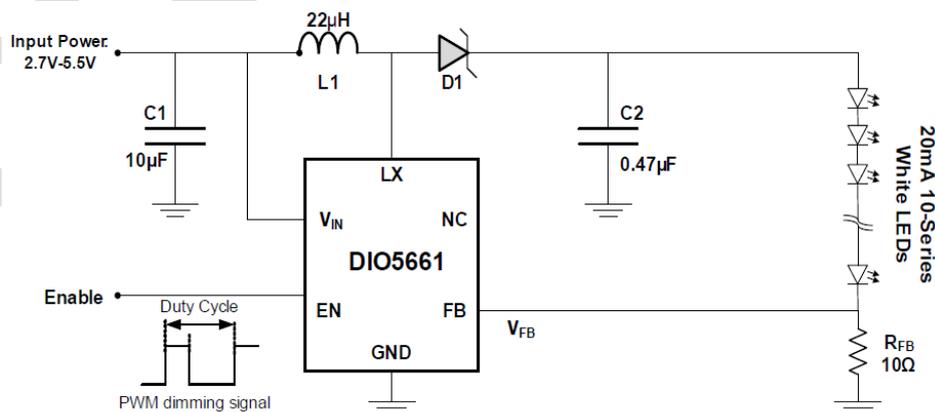
### SERIES RESISTOR

Normally LEDs will be driven by one or more a simple series resistor(s). This is the cheapest solution but it works with higher system voltage only (5V or 12V). And because of high power dissipation the efficiency is low.

*Advice: power supply voltage should be min. 1V higher than LED forward voltage. This prevents a large change in brightness caused by different forward voltages.*

### CURRENT SOURCE

The more stable and more safe way driving LED chips is by current sink (LED driver). These circuits are available with integrated booster which makes them perfect for 3.3V systems:



*Typical LED driver schematic*

## RECOMMENDED LED DIES

There may match several LED chips to this lightguide but best performance will be achieved with recommended LED chips. For other LED chips footprint and position need to be adjusted. Keep also a sharp eye on radiation characteristics, it need to be spherical.

### WHITE

For pure white backlight with high brightness and long life time we recommend 6~9 pcs. NICHIA NSSW306GT. It may reach up to 2000 cd/m<sup>2</sup>.

### YELLOW/GREEN

For standard yellow/green backlight we recommend 6~9 pcs. Yo Hua Suzhou S2908UTYG-C or similar. It may reach up to 140 cd/m<sup>2</sup>.

### GREEN

A real green backlight can be done with 6~9 pcs. JB.CAS206G65N10 from Jufei. It may reach up to 2000 cd/m<sup>2</sup>.

### AMBER

An amber backlight can be done with 6~9 pcs. JB.CAS206Y65N11 from Jufei. It may reach up to 500 cd/m<sup>2</sup>.

### BLUE

A blue backlight can be done with 6~9 pcs. JB.CAS206B65N10 from Jufei. It may reach up to 500 cd/m<sup>2</sup>.

### RED

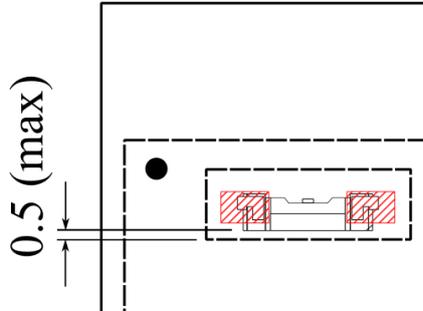
A red backlight can be done with 6~9 pcs. JB.CAS206R65N11 from Jufei. It may reach up to 800 cd/m<sup>2</sup>.

### RGB

For full color RGB backlight with high brightness we recommend 6 pcs. NICHIA NESM238BT. Driving the 3 colors red, green and blue in separate way gives you the possibility to change backlight color individually. With this LED chips you may reach up to 1000 cd/m<sup>2</sup>.

## PCB LAYOUT / FOOTPRINT

Footprint for LED dies is mentioned in relating data sheet. For the best brightness and uniformity it is necessary to place LED components at correct position. Please follow the rules mentioned here:



## CLEANING

Do not clean assembly unit when lightguide is assembled already. Be informed that plastic part is sensitive against some cleaning solvent. Also rest of cleaning solvent may cause pollution in form of fine streaks and stripes which lead to an uneven and blotchy illumination.

*Note: Never clean assembly unit when light guide is assembled already. If done anyway, lightguide is irreparable destroyed.*

## ASSEMBLY

Remove the protection foil from rear side of lightguide. Put lightguide to pcb. Watch out for the correct orientation, all studs need to be placed correctly into the pcb holes. Make sure that part is in full contact with the circuit board.

Before assembly of EA DOGL128, remove protection foil from upper side of lightguide. Note that display is also protected with it's own protection foil (on rear side).

*Note: The whole assembly process (lightguide and display) needs to be done in dust free location to prevent dark or bright spots in display or backlight later on.*

**DIMENSION**

