

### 14.22mm (0.56INCH) DUAL DIGIT NUMERIC DISPLAY

Part Number: DA56-51SYKWA

Super Bright Yellow

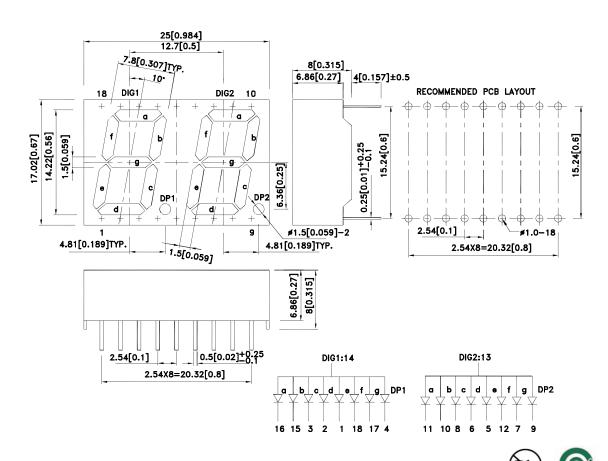
#### **Features**

- 0.56 inch digit height.
- Low current operation.
- Excellent character appearance.
- Easy mounting on P.C. boards or sockets.
- Two digit package simplifies alignments & assembly.
- Mechanically rugged.
- Standard : gray face, white segment.
- RoHS compliant.

### Description

The Super Bright Yellow device is made with AlGaInP (on GaAs substrate) light emitting diode chip.

### Package Dimensions& Internal Circuit Diagram





1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.

2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

SPEC NO: DSAK2772 REV NO: V.5A DATE: MAY/08/2013 PAGE: 1 OF 6
APPROVED: WYNEC CHECKED: Joe Lee DRAWN: F.Cui ERP: 1302001066

### **Selection Guide**

Part No.	Dice	Lens Type	Iv (ucd) [1] @ 10mA		Description
			Min.	Тур.	
DA56-51SYKWA	Super Bright Yellow (AlGaInP)	White Diffused	52000	120000	Common Anode, Rt. Hand Decimal.
			*21000	*40000	

- Luminous intensity/ luminous Flux: +/-15%.
   Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

### Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Тур.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Super Bright Yellow	590		nm	IF=20mA
λD [1]	Dominant Wavelength	Super Bright Yellow	590		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Super Bright Yellow	20		nm	IF=20mA
С	Capacitance	Super Bright Yellow	20		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Super Bright Yellow	2.0	2.5	V	I=20mA
lr	Reverse Current	Super Bright Yellow		10	uA	V <sub>R</sub> =5V

### Notes:

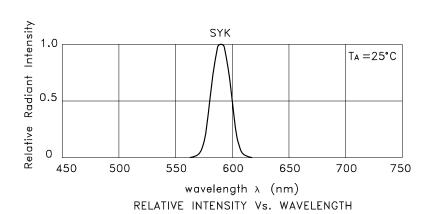
- 1.Wavelength: +/-1nm. 2. Forward Voltage: +/-0.1V.
- 3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

### Absolute Maximum Ratings at TA=25°C

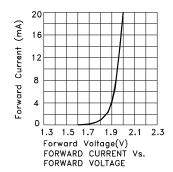
Parameter	Super Bright Yellow	Units	
Power dissipation	75	mW	
DC Forward Current	30	mA	
Peak Forward Current [1]	175	mA	
Reverse Voltage	5	V	
Operating / Storage Temperature	ure -40°C To +85°C		
Lead Solder Temperature[2] 260°C For 3-5 Seconds			

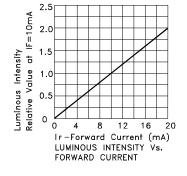
- 1. 1/10 Duty Cycle, 0.1ms Pulse Width.
   2. 2mm below package base.

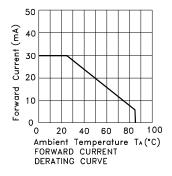
SPEC NO: DSAK2772 **REV NO: V.5A** DATE: MAY/08/2013 PAGE: 2 OF 6 APPROVED: WYNEC **CHECKED:** Joe Lee DRAWN: F.Cui ERP: 1302001066

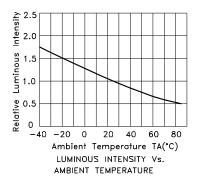


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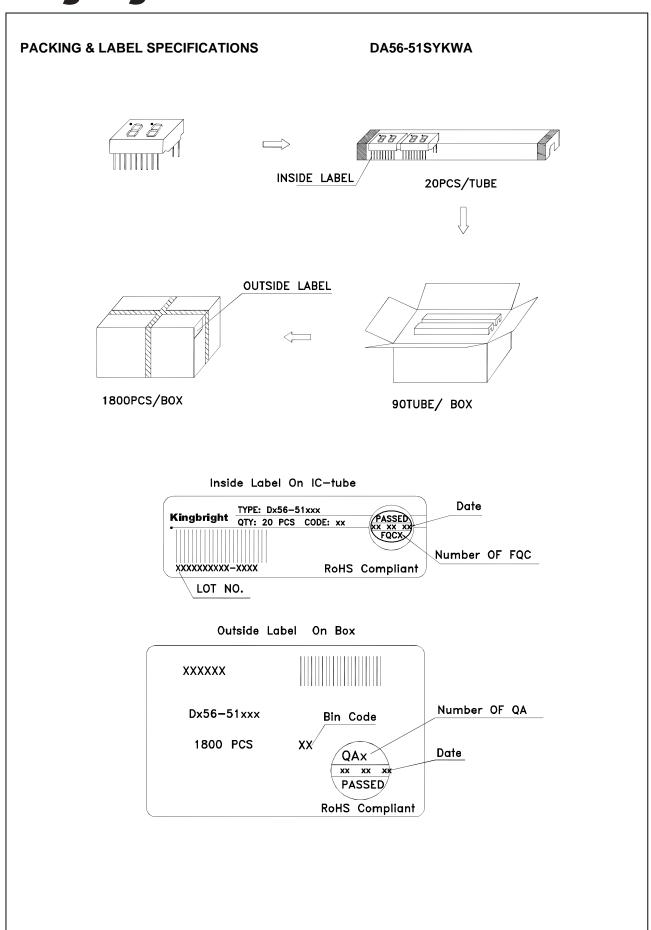








SPEC NO: DSAK2772 REV NO: V.5A DATE: MAY/08/2013 PAGE: 3 OF 6
APPROVED: WYNEC CHECKED: Joe Lee DRAWN: F.Cui ERP: 1302001066

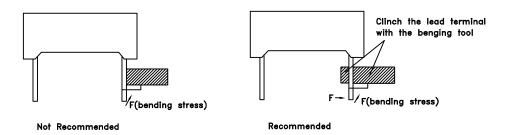


SPEC NO: DSAK2772 APPROVED: WYNEC REV NO: V.5A CHECKED: Joe Lee DATE: MAY/08/2013 DRAWN: F.Cui PAGE: 4 OF 6 ERP: 1302001066

### THROUGH HOLE DISPLAY MOUNTING METHOD

### Lead Forming

Do not bend the component leads by hand without proper tools. The leads should be bent by clinching the upper part of the lead firmly such that the bending force is not exerted on the plastic body.

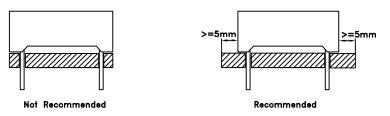


### Installation

- 1. The installation process should not apply stress to the lead terminals.
- 2. When inserting for assembly, ensure the terminal pitch matches the substrate board's hole pitch to prevent spreading or pinching the lead terminals.



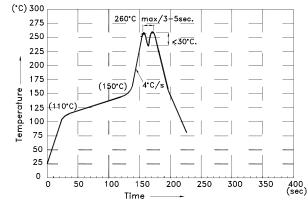
3. The component shall be placed at least 5mm from edge of PCB to avoid damage caused excessive heat during wave soldering.



SPEC NO: DSAK2772 APPROVED: WYNEC REV NO: V.5A CHECKED: Joe Lee DATE: MAY/08/2013 DRAWN: F.Cui PAGE: 5 OF 6 ERP: 1302001066

### DISPLAY SOLDERING CONDITIONS

Wave Soldering Profile For Lead-free Through-hole LED.



#### NOTES:

- 1.Recommend the wave temperature 245°C~260°C.The maximum soldering temperature should be less than 260°C.
- 2.Do not apply stress on epoxy resins when temperature is over 85°C.
- 3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
- 4.During wave soldering , the PCB top-surface temperature should be kept below 105°C
- 5.No more than once.

### Soldering General Notes:

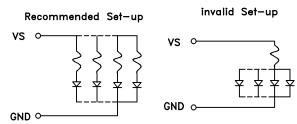
- 1. Through—hole displays are incompatible with reflow soldering.
- 2. If components will undergo multiple soldering processes, or other processes where the components may be subjected to intense heat, please check with Kingbright for compatibility.

### **CLEANING**

- 1.Mild "no-clean" fluxes are recommended for use in soldering.
- 2. If cleaning is required, Kingbright recommends to wash components with water only. Do not use harsh organic solvents for cleaning, because they may damage the plastic parts .And the devices should not be washed for more than one minute.

#### CIRCUIT DESIGN NOTES

- 1.Protective current—limiting resistors may be necessary to operate the Displays.
- 2.LEDs mounted in parallel should each be placed in series with its own current—limiting resistor.



Detailed application notes are listed on our website. http://www.kingbright.com/application\_notes

 SPEC NO: DSAK2772
 REV NO: V.5A
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 PAGE: 6 OF 6

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