KW3-S561AWB/KW3-S561CWB

0.56 inch (14.20mm), White

Triple Digit 7-segment SMD LED Display

Technical Data Sheet

Features

- 0.56 inch (14.20mm) digit height.
- The thickness is thinness than tradition display.
- Packaged in tape and reel for SMT manufacturing.
- Low current operation.
- Excellent characters appearance.
- Categorized for luminous intensity.
- Available in CA and CC.
- The product itself will remain within RoHS compliant Version.

Descriptions

- The KW3-S561AWB / KW3-S561CWB is a 0.56 inch (14.20mm) height triple digit display.
- The display provides excellent reliability in bright ambient light.
- The device is made with white segments and black surface.

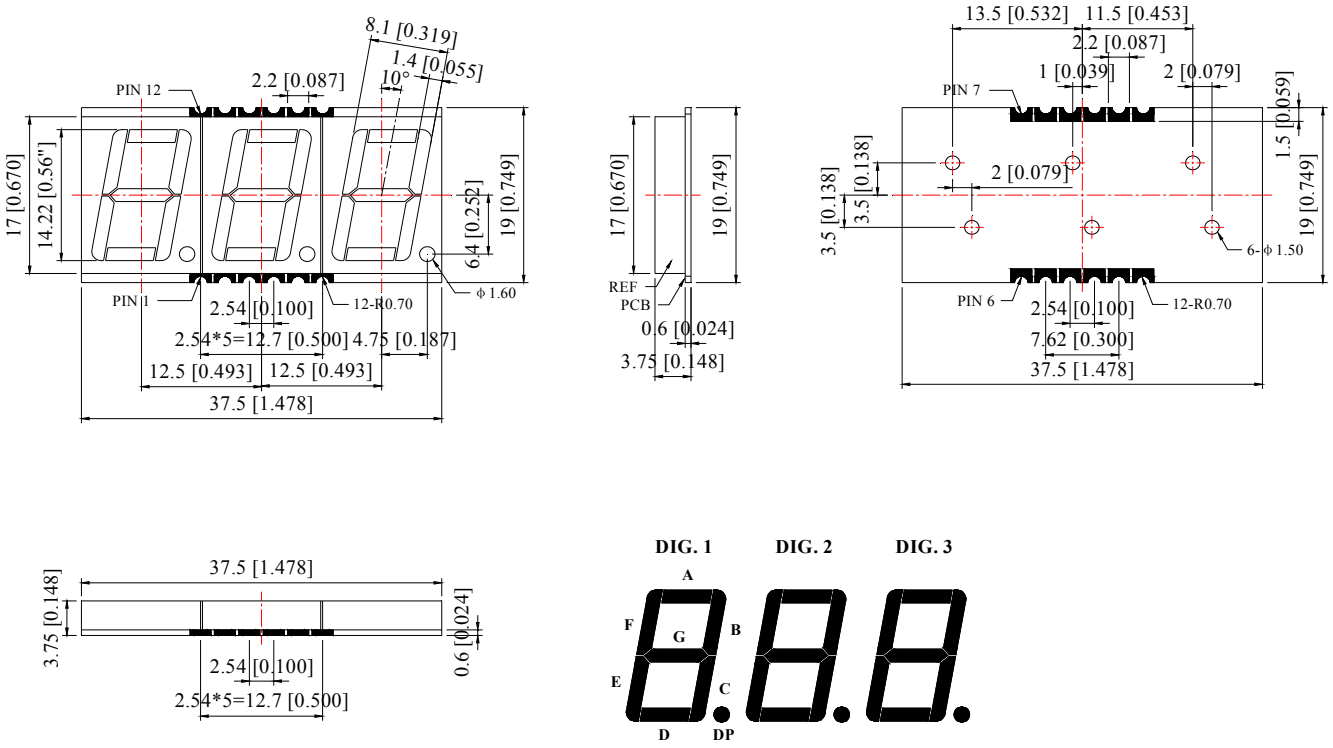
Applications

- Home appliances
- Game machine
- Instrument panels
- Digital readout displays

Device Selection Guide

Part No.	Emitting Color	Polarity
KW3-S561AWB	White	Common Anode
KW3-S561CWB	White	Common Cathode

Package Dimension



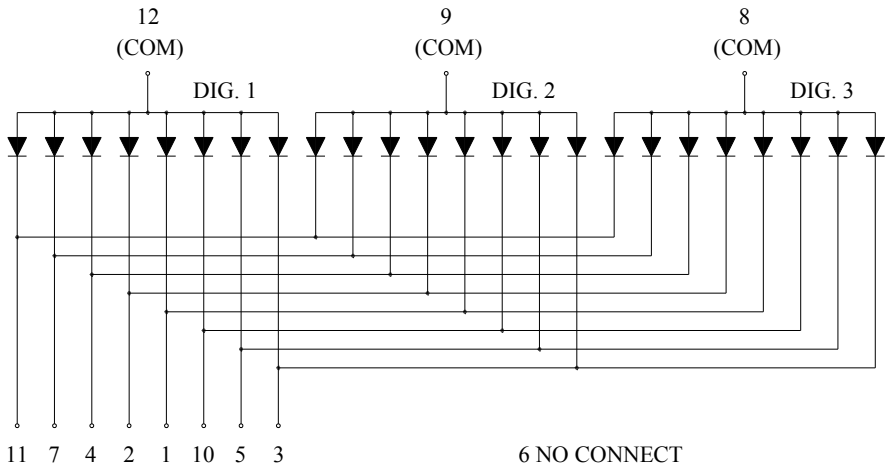
Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010″) unless otherwise noted.
3. The gap between the reflector and PCB shall not exceed 0.25mm.

Internal Circuit Diagram:

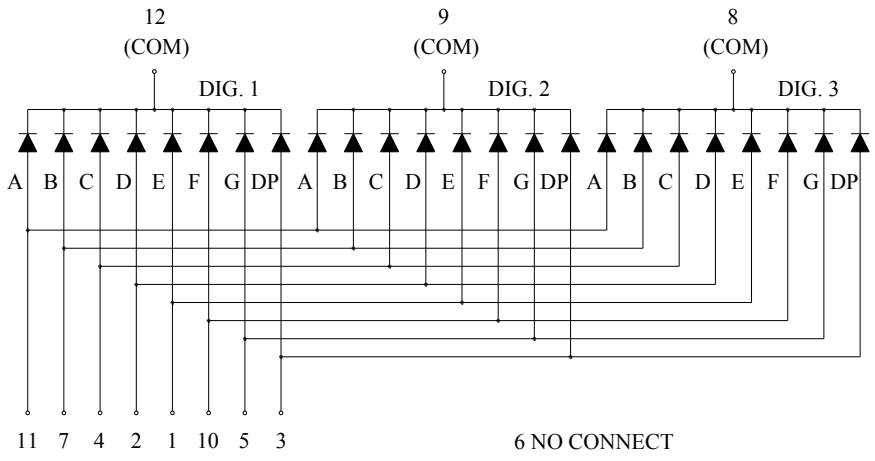
Internal Circuit Diagram (Common Anode)

KW3-S561AWB



Internal Circuit Diagram (Common Cathode)

KW3-S561CWB



Absolute Maximum Ratings at Ta=25℃

Parameters	Symbol	Max	Unit
Power Dissipation Per Segment	P_d	35	mW
Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width)	I_{FP}	50	mA
Forward Current Per Segment	I_F	10	mA
Reverse Voltage Per Segment	V_R	5	V
Operating Temperature Range	T_{opr}	-40℃ to +100℃	
Storage Temperature Range	T_{stg}	-40℃ to +105℃	
Soldering Temperature	T_{sld}	260℃ for 5 Seconds	

Electrical Optical Characteristics at Ta=25℃

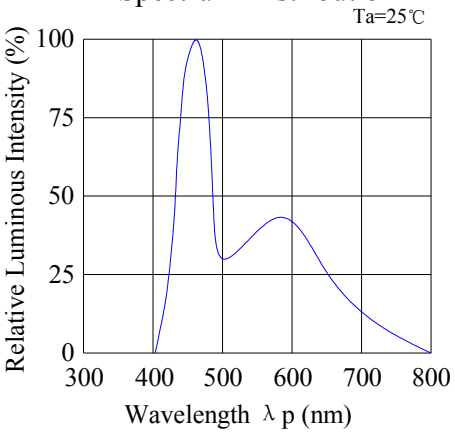
Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	Iv	50	100	---	mcd	IF=10mA (Note 1, 2)
Luminous Intensity Matching Ratio	I_{v-m}	---	---	2:1		IF=10mA
Chromaticity Coordinates	x	---	0.30	---		IF=10mA (Note 3)
	y	---	0.31	---		
Forward Voltage Per Segment	V_F	---	2.90	3.10	V	IF=10mA
Reverse Current Per Segment	I_R	---	---	50	μA	VR=5V

Notes:

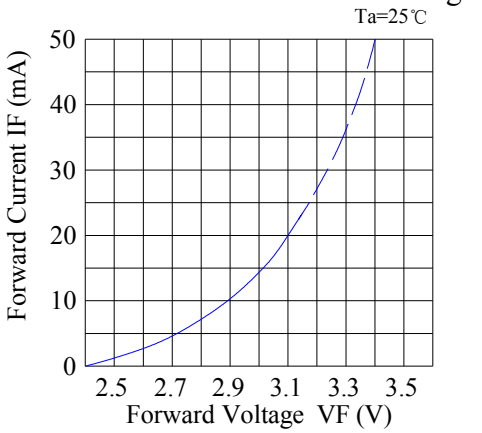
1. Luminous Intensity is a average value which is measured one 7-segment. Tolerance of Luminous Intensity: ±10%.
2. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.
3. The chromaticity coordinates (x, y) is derived from the 1931 CIE chromaticity diagram.

Typical Electrical / Optical Characteristics Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

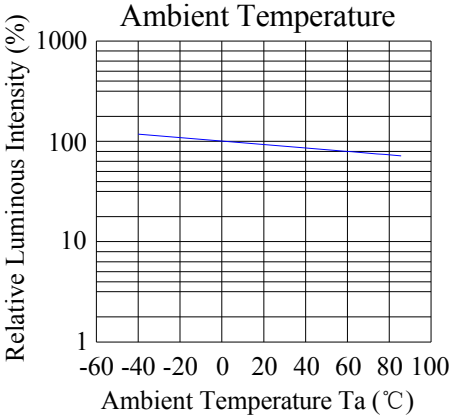
Spectrum Distribution



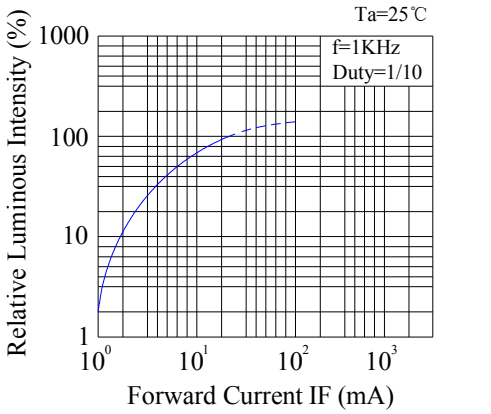
Forward Current & Forward Voltage



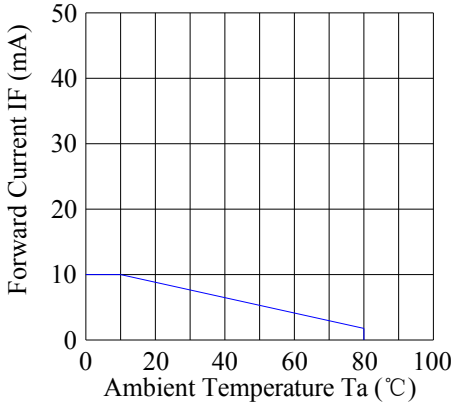
Luminous Intensity & Ambient Temperature



Luminous Intensity & Forward Current



Forward Current Derating Curve

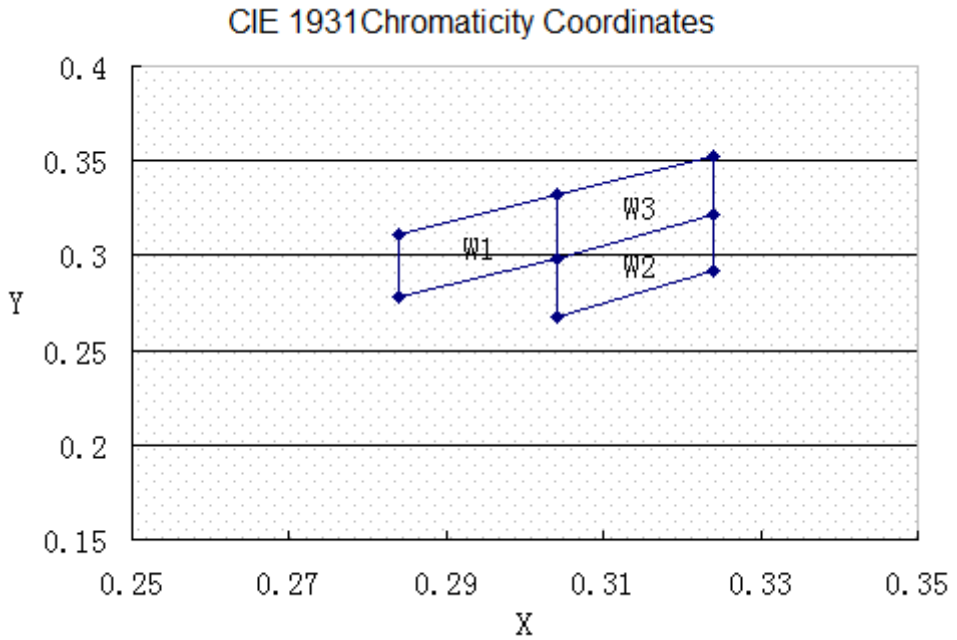


Chromaticity Coordinates Specifications for Bin Rank

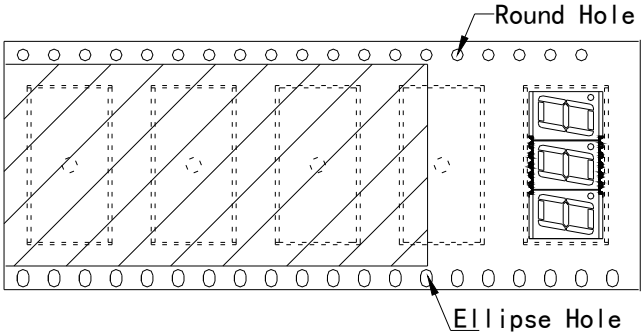
Color Bin at IF = 10mA

Bin Code	CIE 1931 Chromaticity Coordinates					
W1	x	0.284	0.284	0.304	0.304
	y	0.278	0.311	0.332	0.298
W2	x	0.304	0.304	0.324	0.324
	y	0.268	0.298	0.322	0.292
W3	x	0.304	0.304	0.324	0.324
	y	0.298	0.332	0.352	0.322

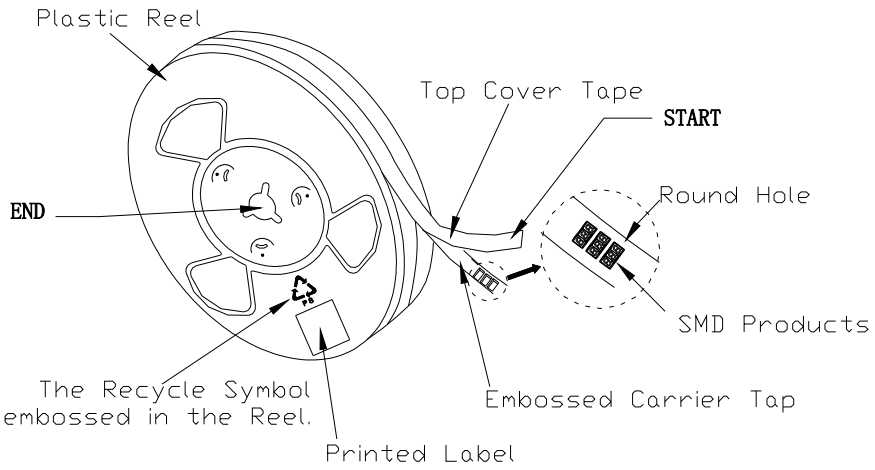
Tolerance on each Hue (x, y) bin is +/- 0.01.



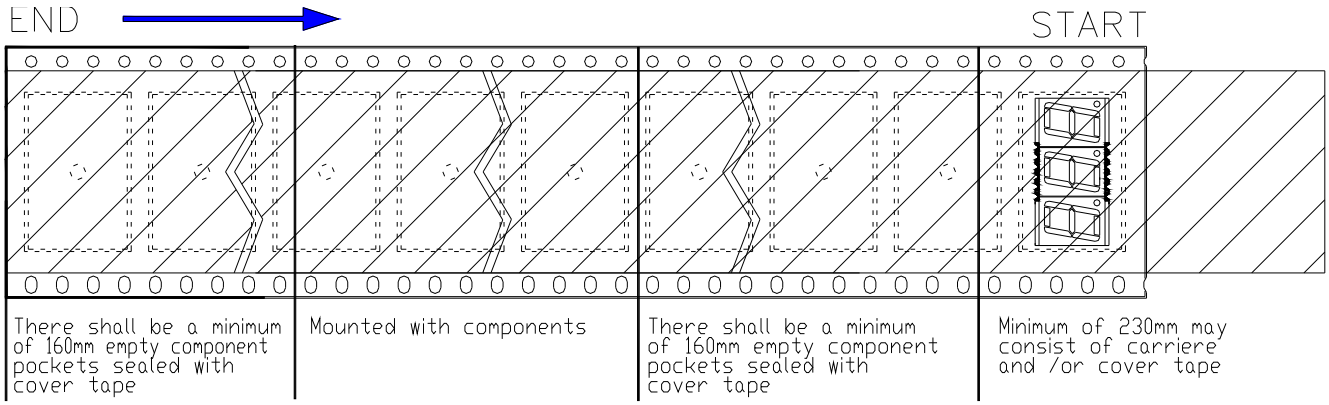
The Products In The Reel Of Direction



Label Direction & Content In The Roll



User Feed Direction



Package Criteria

1. Total unit per reel is 500PCS.
2. Max 5 reels/2500PCS are packaged in each carton.

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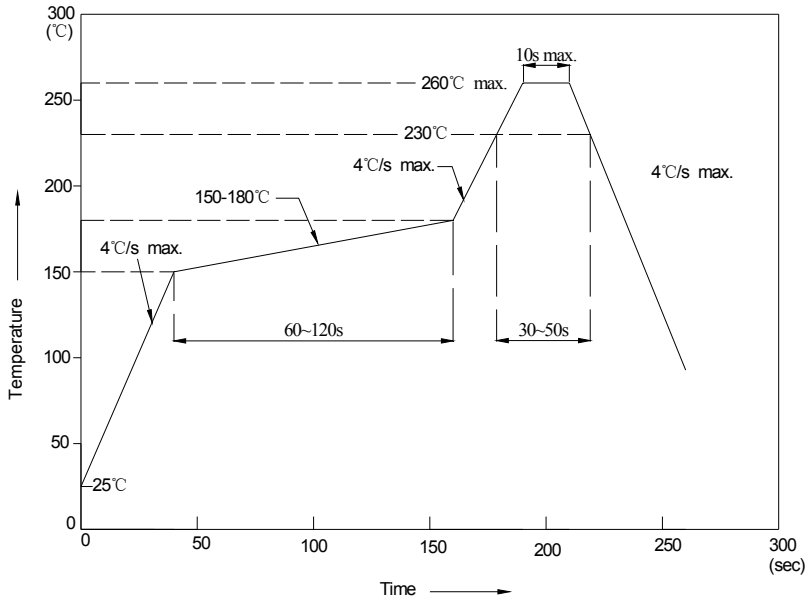
6. The LEDs should be operated with forward bias. The driving circuit must be designed so that the LEDs are not subjected to forward or reverse voltage while it is off. If reverse voltage is continuously applied to the LEDs, it may cause migration resulting in LED damage.

Precautions for Use

1. Caution in ESD

Static electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices equipment and machinery must be properly grounded.

2. SMT Soldering Condition



Reflow Soldering (Two times only)		Soldering Iron (One time only)	
Pre-heat	120~150℃	Temperature	300℃ Max.
Pre-heat time	120 sec. Max.	Soldering time	3 sec. Max.
Peak temperature	260℃ Max.		
Soldering time	5 sec. Max.		

3. Circuit Design Notes:

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