

KW2-S391AVA/KW2-S391CVA



0.39 inch (10.0mm), Red
Dual Digit 7-segment SMD LED Display

Technical Data Sheet

Features

- 0.39inch (10.00mm) digit height.
- The thickness is thinner than traditional display.
- Packaged in tape and reel for SMT manufacturing.
- Low current operation.
- Excellent character appearance.
- Categorized for luminous intensity.
- Available in CA and CC.
- The product itself will remain within RoHS compliant Version.



Descriptions

- The KW2-S391AVA / KW2-S391CVA is a 0.39inch (10.00mm) height Dual digit display.
- The display provides excellent reliability in bright ambient light.
- The device is made with white segments and gray surface.

Applications

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

Device Selection Guide

| Part No. | Emitting Color | Polarity |
|-------------|----------------|----------------|
| KW2-S391AVA | Red | Common Anode |
| KW2-S391CVA | Red | Common Cathode |

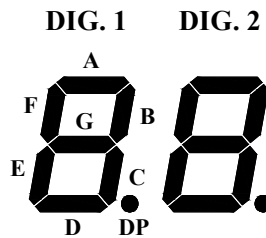
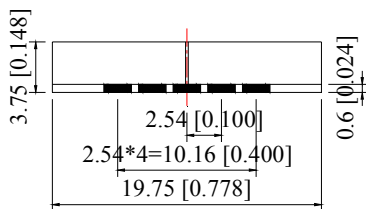
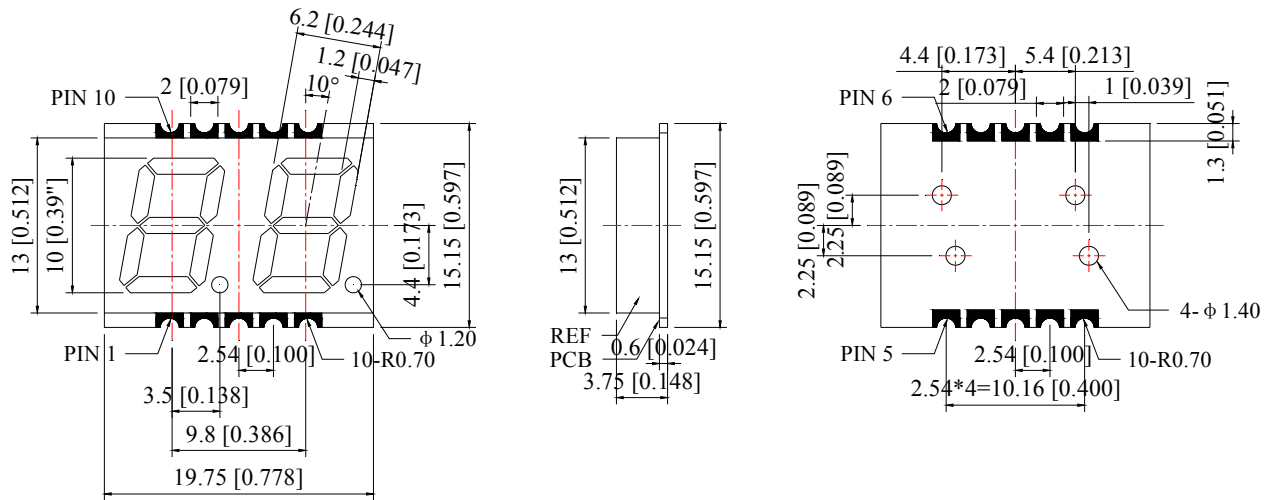
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Package Dimension



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.

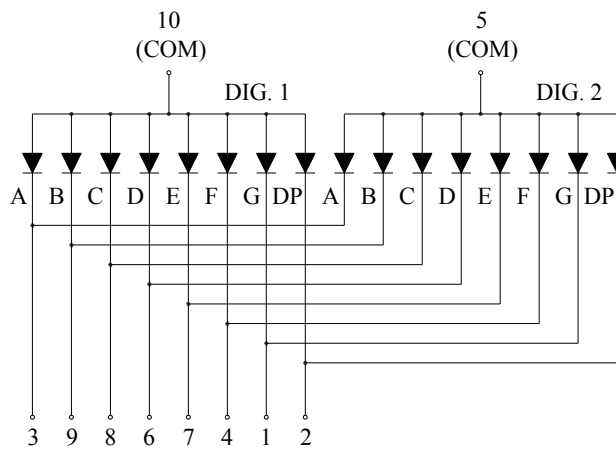
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Internal Circuit Diagram:

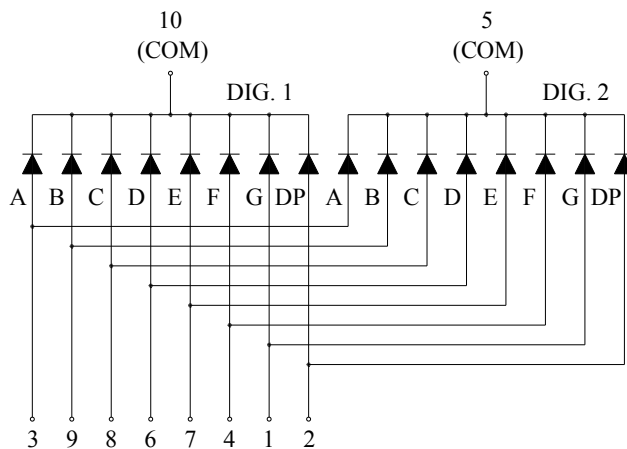
Internal Circuit Diagram (Common Anode)

KW2-S391AVA



Internal Circuit Diagram (Common Cathode)

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Absolute Maximum Ratings at Ta=25°C

| Parameters | Symbol | Max | Unit |
|--|-----------|---------------------|------|
| Power Dissipation Per Segment | P_d | 48 | mW |
| Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width) | I_{FP} | 100 | mA |
| Forward Current Per Segment | I_F | 20 | mA |
| Reverse Voltage Per Segment | V_R | 5 | V |
| Operating Temperature Range | T_{opr} | -40°C to +100°C | |
| Storage Temperature Range | T_{stg} | -40°C to +105°C | |
| Soldering Temperature | T_{sld} | 260°C for 5 Seconds | |

Electrical Optical Characteristics at Ta=25°C

| Parameters | Symbol | Min. | Typ. | Max. | Unit | Test Condition |
|-----------------------------------|-----------------|------|------|------|---------|------------------|
| Average Luminous Intensity | I_v | 9.0 | 18.0 | --- | mcd | IF=10mA (Note a) |
| Luminous Intensity Matching Ratio | I_{v-m} | --- | --- | 2:1 | | IF=10mA |
| Peak Emission Wavelength | λ_p | --- | 632 | --- | nm | IF=20mA |
| Dominant Wavelength | λ_d | --- | 624 | --- | nm | IF=20mA (Note b) |
| Spectral Line Half-Width | $\Delta\lambda$ | --- | 20 | --- | nm | IF=20mA |
| Forward Voltage Per Segment | V_F | --- | 2.0 | 2.4 | V | IF=20mA |
| Reverse Current Per Segment | I_R | --- | --- | 50 | μ A | VR=5V |

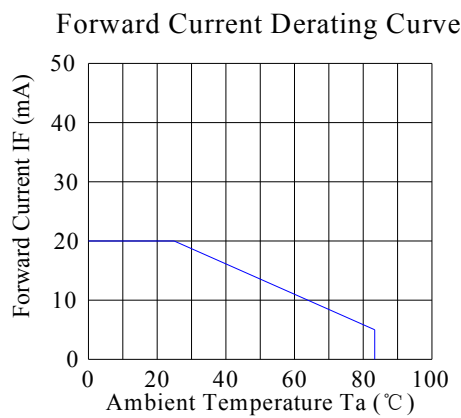
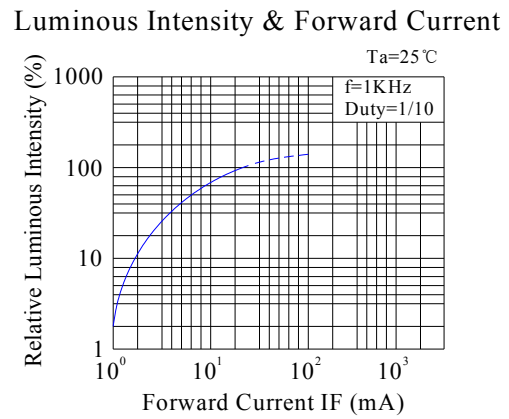
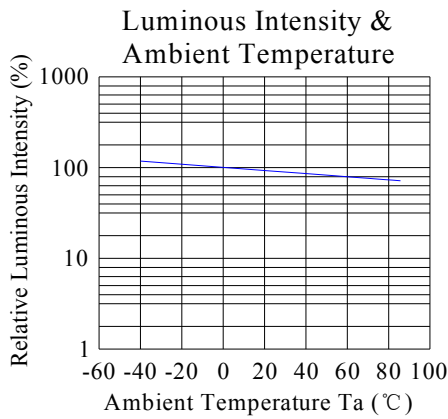
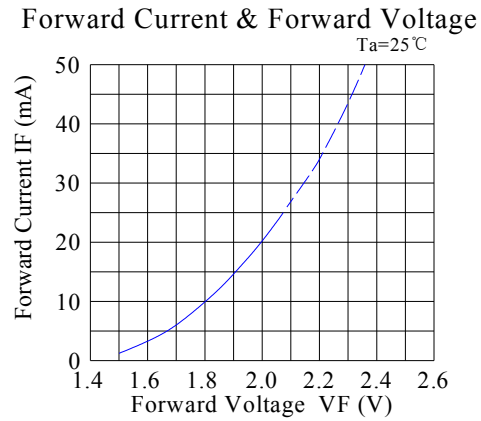
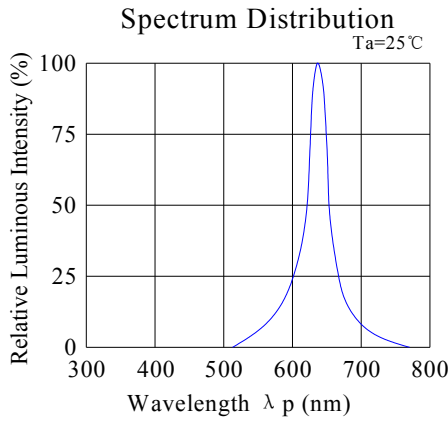
Notes:

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
- The dominant wavelength (λ_d) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

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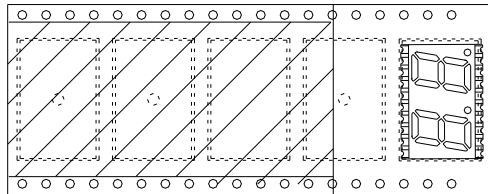
**Typical Electrical / Optical Characteristics Curves
 (25°C Ambient Temperature Unless Otherwise Noted)**



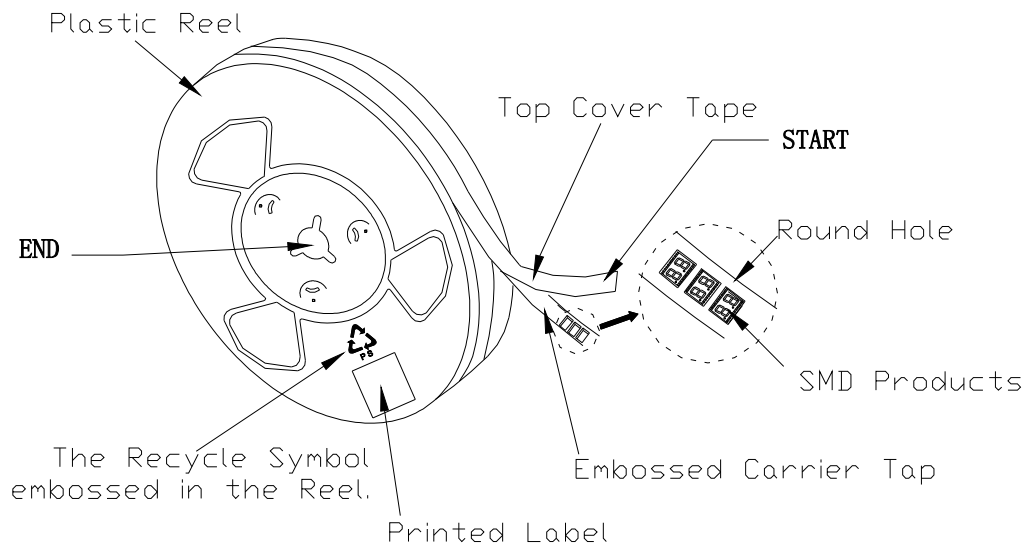
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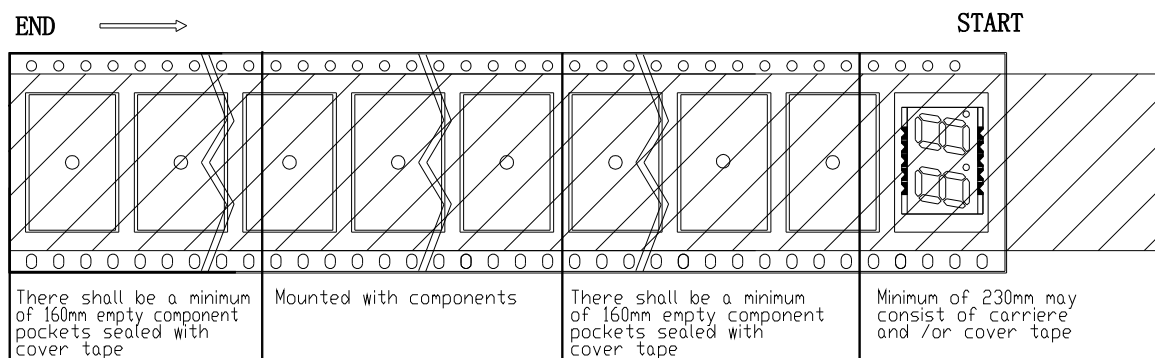
The Products In The Reel Of Direction



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.

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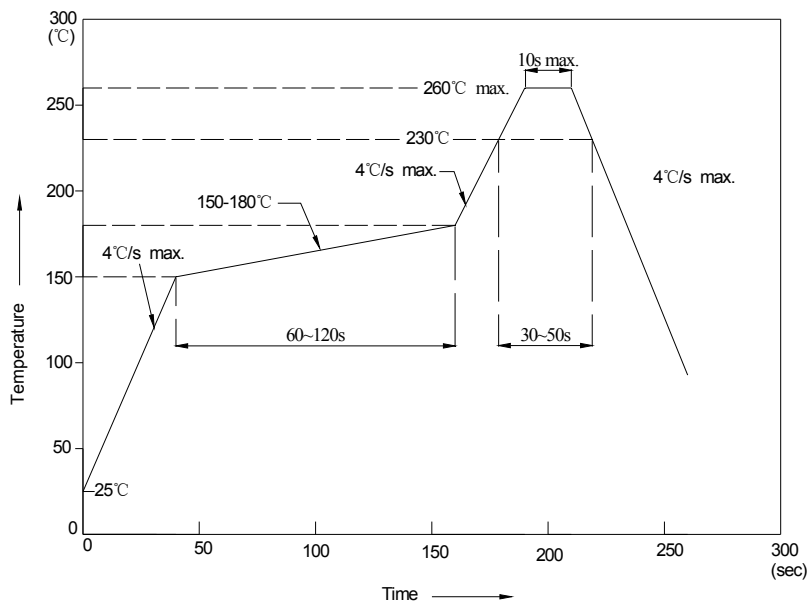
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Precautions for Use

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°C | Temperature | 300°C Max |
| Pre-heat time | 120 sec. Max. | Soldering time | 3 sec. Max. |
| Peak temperature | 260°C 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.

