

DATA SHEET

PART NO.: SA401UW133

REV: A / 1

CUSTOMER'S APPROVAL: _____

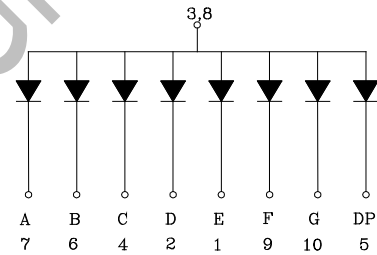
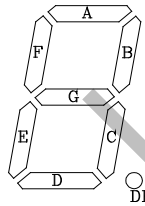
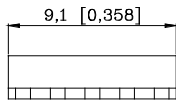
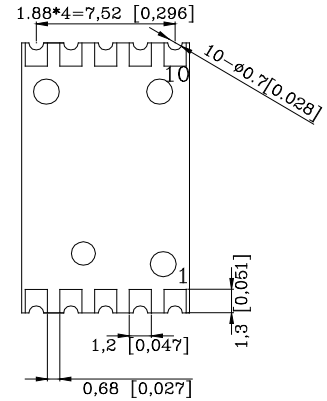
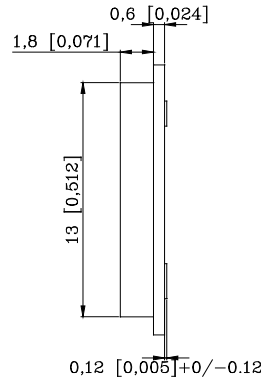
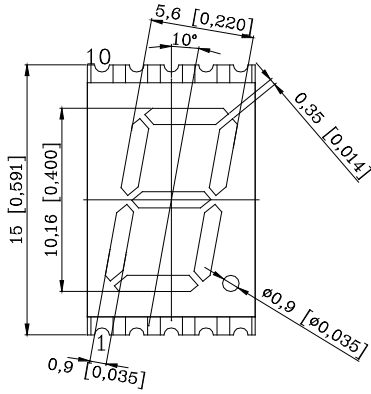
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0.40" SINGLE DIGIT SMD LED DISPLAY

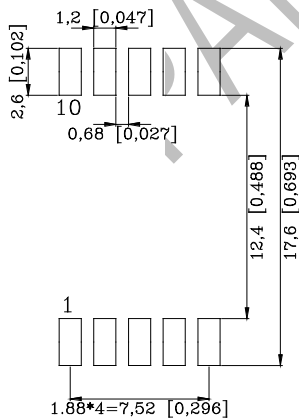
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PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN



NOTES: 1. All dimensions are in millimeters (inches)

2. Tolerance is +/- 0.25mm (0.010") unless otherwise specified

3. The specifications, electrical characteristics and technical data described in this datasheet are subject to change without prior notice

0.40" SINGLE DIGIT SMD LED DISPLAY

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FEATURES

- 10.16mm (0.40 inch)DIGIT HEIGHT
- COMMON ANODE
- SMD TYPE
- MOISTURE SENSITIVITY LEVEL: 2a
- LOW POWER CONSUMPTION
- Pb FREE PRODUCT
- GRAY FACE, WHITE SEGMENTS
- 950PCS/ROL
- HIGHLIGHT<-1000V THE LED CAN WITHSTAND THE MAX STATIC LEVELWHEN ASSEMBLING OR OPERATION.

Raw Material : SMD:InGaN/Ga/N

ABSOLUTE MAXIMUM RATING : (Ta = 25°C)

| SYMBOL | PARAMETER | WHITE | UNIT |
|--------|---|---------------|------|
| PD | Power Dissipation Per Segment | 80 | mW |
| VR | Reverse Voltage Per Segment | 5 | V |
| IAF | Continuous Forward Current Per Segment | 25 | mA |
| IPF | Peak Forward Current Per Segment (1/10 Duty Cycle,0.1ms Pulse Width) | 80 | mA |
| Topr | Operating Temperature Range | -40°C to 85°C | |
| Tstg | Storage Temperature Range | -40°C to 85°C | |

ELECTRO-OPTICAL CHARACTERISTICS : (Ta = 25°C)

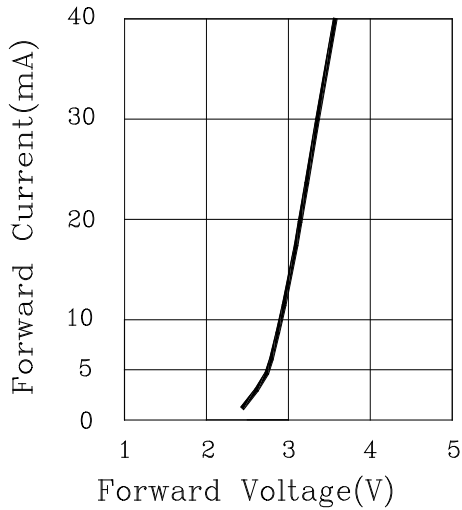
| SYMBOL | PARAMETER | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------|--------------------------------|----------------|------|------|------|------|
| VF | Forward Voltage , Per Segment | IF = 5mA | - | 2.8 | 3.2 | V |
| IR | Reverse Current , Per Segment | VR = 5V | | - | 10 | μA |
| X | Chromaticity Coordinates | IF = 5mA | | 0.28 | | |
| Y | | IF = 5mA | | 0.28 | | |
| Iv | Luminous Intensity Per Segment | IF = 5mA | 24.0 | 60.0 | | mcd |

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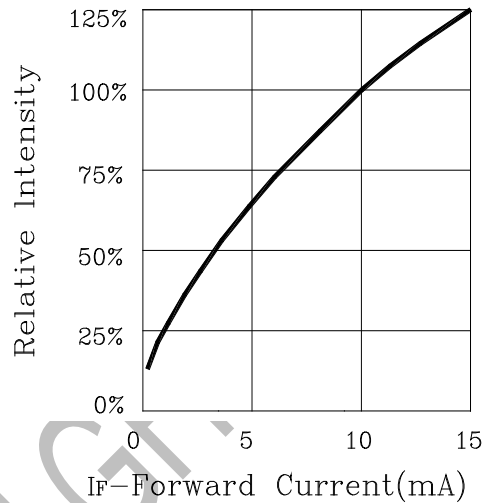
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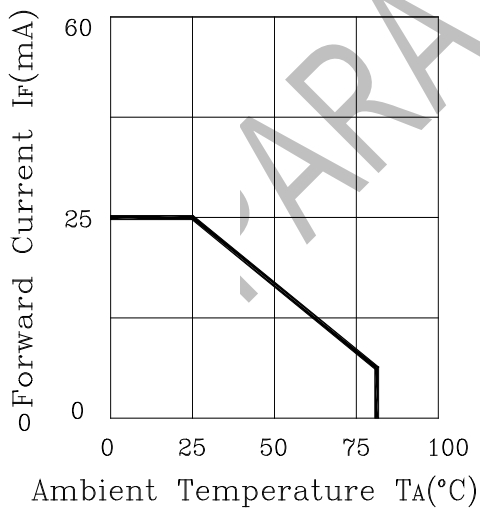
FORWARD CURRENT Vs.
FORWARD VOLTAGE



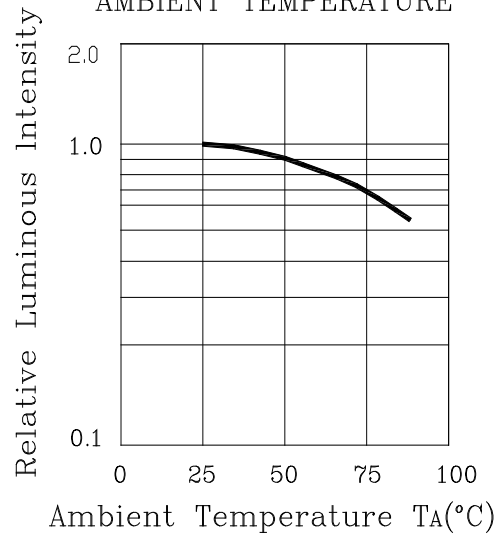
RELATIVE INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



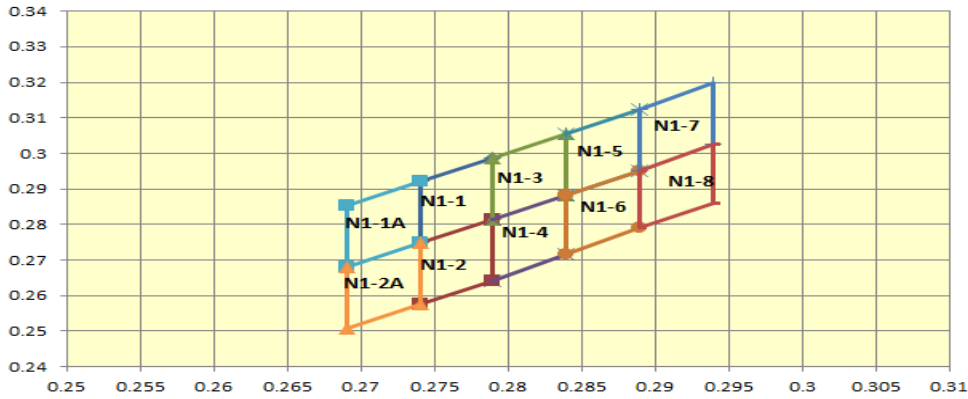
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



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Color Rank (CIE chromaticity X , Y) @ 5mA

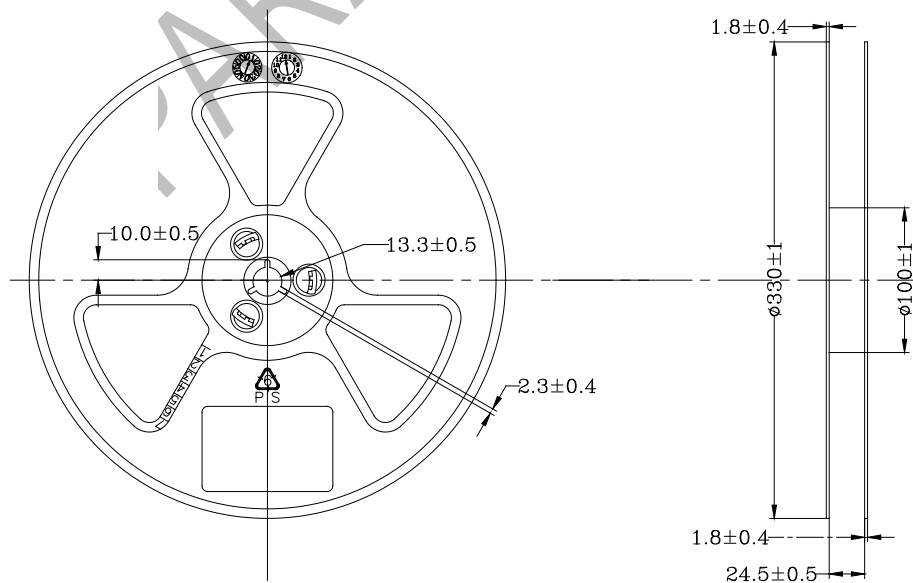
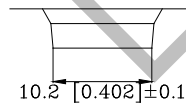
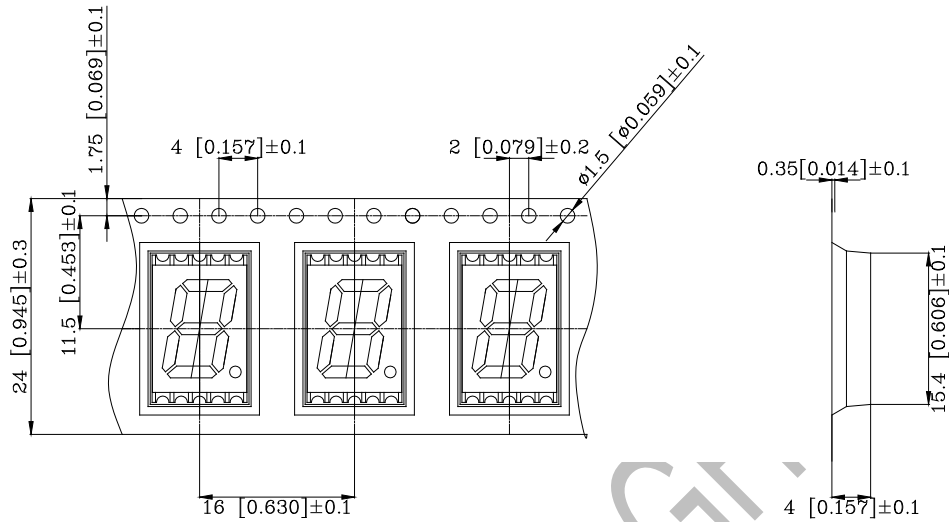
| Rank N1-1A | | | | | Rank N1-2A | | | | |
|----------------|--------|--------|--------|--------|------------|--------|--------|--------|--------|
| X | 0.274 | 0.269 | 0.269 | 0.274 | X | 0.269 | 0.269 | 0.274 | 0.274 |
| Y | 0.2921 | 0.2854 | 0.2681 | 0.2748 | Y | 0.2681 | 0.2508 | 0.2575 | 0.2748 |
| Rank Rank N1-1 | | | | | Rank N1-2 | | | | |
| X | 0.274 | 0.274 | 0.279 | 0.279 | X | 0.274 | 0.274 | 0.279 | 0.279 |
| Y | 0.2921 | 0.2748 | 0.2815 | 0.2988 | Y | 0.2748 | 0.2575 | 0.264 | 0.2815 |
| Rank N1-3 | | | | | Rank N1-4 | | | | |
| X | 0.279 | 0.279 | 0.284 | 0.284 | X | 0.279 | 0.279 | 0.284 | 0.284 |
| Y | 0.2988 | 0.2815 | 0.2882 | 0.3055 | Y | 0.2815 | 0.264 | 0.2715 | 0.2882 |
| Rank N1-5 | | | | | Rank N1-6 | | | | |
| X | 0.284 | 0.284 | 0.289 | 0.289 | X | 0.284 | 0.284 | 0.289 | 0.289 |
| Y | 0.3055 | 0.2882 | 0.295 | 0.3123 | Y | 0.2882 | 0.2715 | 0.279 | 0.295 |
| Rank N1-7 | | | | | Rank N1-8 | | | | |
| X | 0.289 | 0.289 | 0.294 | 0.294 | X | 0.289 | 0.289 | 0.294 | 0.294 |
| Y | 0.3123 | 0.295 | 0.3025 | 0.3198 | Y | 0.295 | 0.279 | 0.286 | 0.3025 |

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PACKAGING SPECIFICATIONS



0.40" SINGLE DIGIT SMD LED DISPLAY

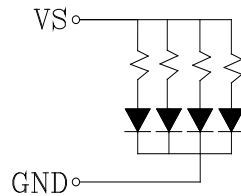
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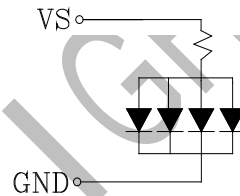
CIRCUIT DESIGN NOTES

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.
3. The driving circuit should be designed to protect the LED against reverse voltages and transient voltage spikes when the circuit is powered up or shut down.
4. The safe operating current should be chosen after considering the maximum ambient temperature of the operating environment.
5. Prolonged reverse bias should be avoided, as it could cause metal migration, leading to an increase in leakage current or causing a short circuit.

Recommended Set-up

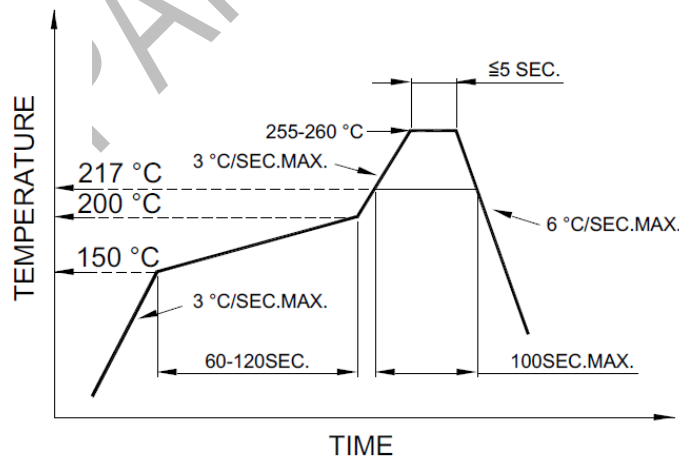


Invalid Set-up



SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile
Pb free reflow soldering Profile



NOTES

1. Avoid causing stress to the LEDs while it is exposed to high temperature.
2. The maximum number of reflow soldering passes is no more than 2 times.
3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.