



LED Display
Product Data Sheet
LTS-4817CKS-P

Spec No. :DS30-2012-0088
Effective Date: 01/11/2020
Revision: A

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

**LED DISPLAY
LTS-4817CKS-P**

LED DISPLAY

LTS-4817CKS-P

| <u>Rev</u> | <u>Description</u> | <u>By</u> | <u>Date</u> |
|---|------------------------------------|-----------|-------------|
| 01 | Preliminary Spec. | Reo Lin | 08/22/2012 |
| | | | |
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| | | | |
| | | | |
| Above data for PD and Customer tracking only | | | |
| - | NPPR Received and Upload on System | Reo Lin | 08/22/2012 |
| A | Update Packing spec. in page 10 | Reo Lin | 01/06/2020 |
| | | | |

LED DISPLAY LTS-4817CKS-P

1. Description

The LTS-4817CKS-P is a 0.39 inch (10.0mm) digit height single digit SMD display. This device uses AS-AllnGap Yellow LED chips (AllnGap epi on GaAs substrate). The display has gray face and white segments and suitable for reverse mount assembly.

1.1 Features

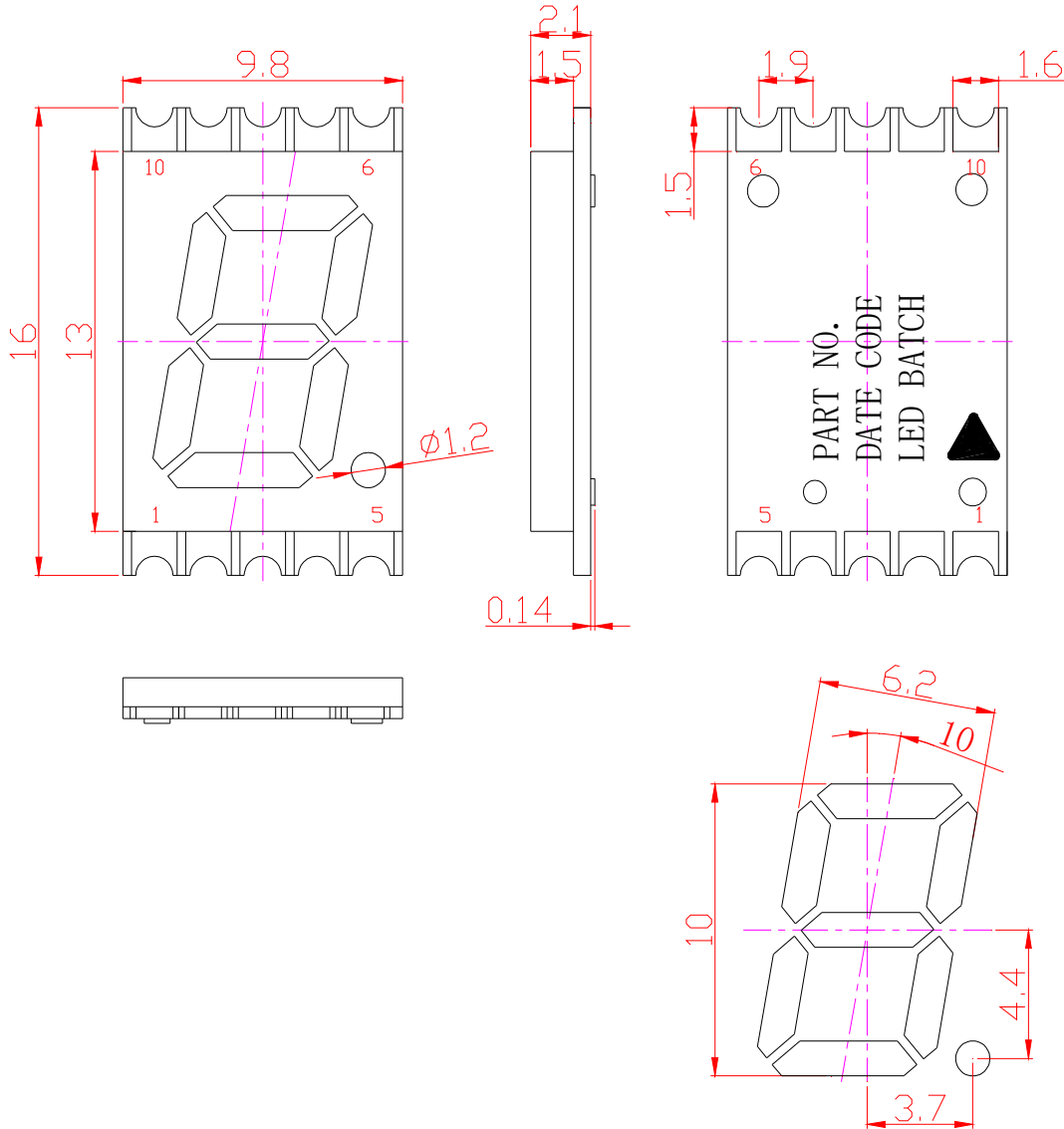
- 0.39 inch (10.0 mm) DIGIT HEIGHT
- CONTINUOUS UNIFORM SEGMENTS
- LOW POWER REQUIREMENT
- EXCELLENT CHARACTERS APPEARANCE
- HIGH BRIGHTNESS & HIGH CONTRAST
- WIDE VIEWING ANGLE
- SOLID STATE RELIABILITY
- CATEGORIZED FOR LUMINOUS INTENSITY.
- LEAD-FREE PACKAGE (ACCORDING TO ROHS)

1.2 Device

| Part No | Description |
|----------------|------------------|
| AllnGaP Yellow | Common Anode |
| LTS-4817CKS-P | Rt. Hand Decimal |

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2. Package Dimensions

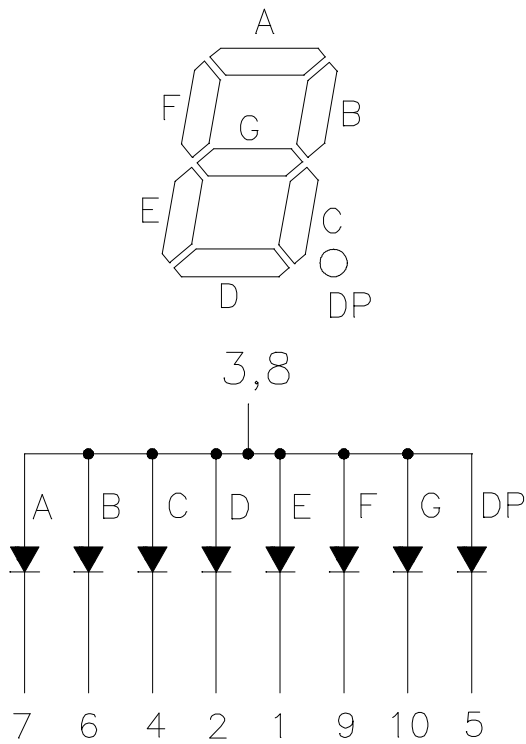


Notes :

1. All dimensions are in millimeters. Tolerances are ± 0.25 mm (0.01") unless otherwise noted
2. Foreign material on segment ≤ 10 mil
3. Ink contamination (surface) ≤ 20 mil
4. Bubble in segment ≤ 10 mil
5. Bending $\leq 1\%$ of reflector length
6. Plastic pin's burr max is 0.14 mm

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3. Internal Circuit Diagram



4. Pin Connection

| No | Connection |
|----|--------------|
| 1 | CATHODE E |
| 2 | CATHODE D |
| 3 | COMMON ANODE |
| 4 | CATHODE C |
| 5 | CATHODE DP |
| 6 | CATHODE B |
| 7 | CATHODE A |
| 8 | COMMON ANODE |
| 9 | CATHODE F |
| 10 | CATHODE G |

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5. Rating and Characteristics

5.1. CHIP LED Absolute Maximum Rating at Ta=25°C

| Parameter | Maximum Rating | Unit |
|---|-----------------|-------|
| Power Dissipation Per Segment | 70 | mW |
| Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width) | 60 | mA |
| Continuous Forward Current Per Segment | 25 | mA |
| Derating Linear From 25°C Per Segment | 0.28 | mA/°C |
| Operating Temperature Range | -35°C to +105°C | |
| Storage Temperature Range | -35°C to +105°C | |
| Iron Soldering Conditions: 1/16 inch Below Seating Plane for 3 Seconds at 260°C | | |

5.2. Chip LED Electrical / Optical Characteristics at Ta=25°C

| Parameter | Symbol | MIN. | TYP. | MAX. | Unit | Test Condition |
|---|--------|------|------|------|------|----------------|
| Average Luminous Intensity Per Segment | IV | 201 | 650 | | μcd | IF=1mA |
| | | | 8450 | | μcd | IF=10mA |
| Peak Emission Wavelength | λp | | 588 | | nm | IF=20mA |
| Spectral Line Half-Width | Δλ | | 15 | | nm | IF=20mA |
| Dominant Wavelength | λd | | 587 | | nm | IF=20mA |
| Forward Voltage Per Chip | VF | | 2.05 | 2.6 | V | IF=20mA |
| Reverse Current Per Segment ⁽²⁾ | IR | | | 100 | μA | VR=5V |
| Luminous Intensity Matching Ratio (Similar Light Area) | IV-m | | | 2:1 | | IF=1mA |

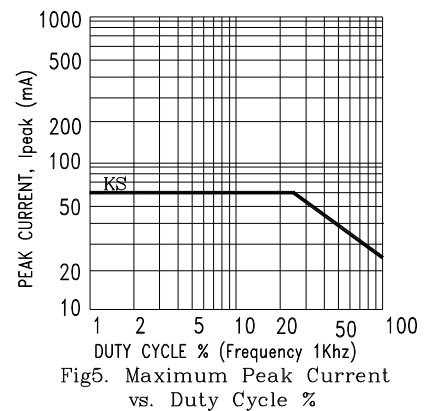
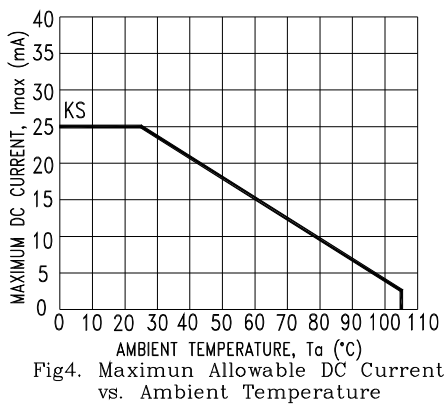
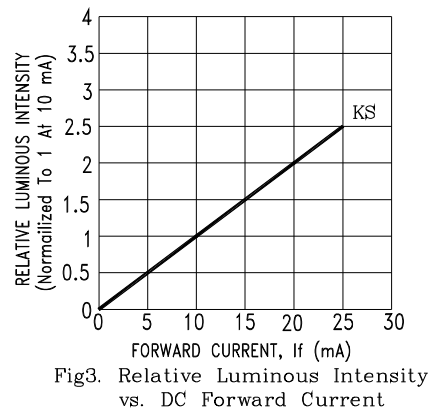
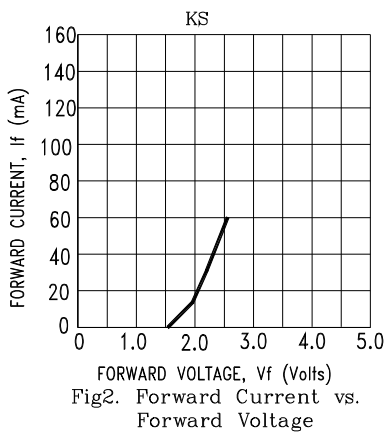
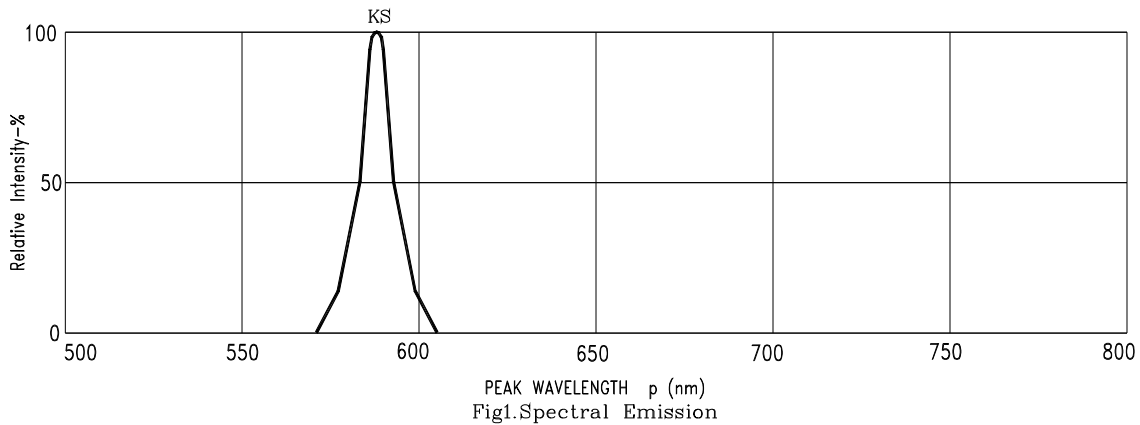
Notes :

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission International De L'Eclairage) eye-response curve
- Reverse voltage is only for IR test. It cannot continue to operate at this situation
- Cross talk specification $\leq 2.5\%$

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5.3. Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

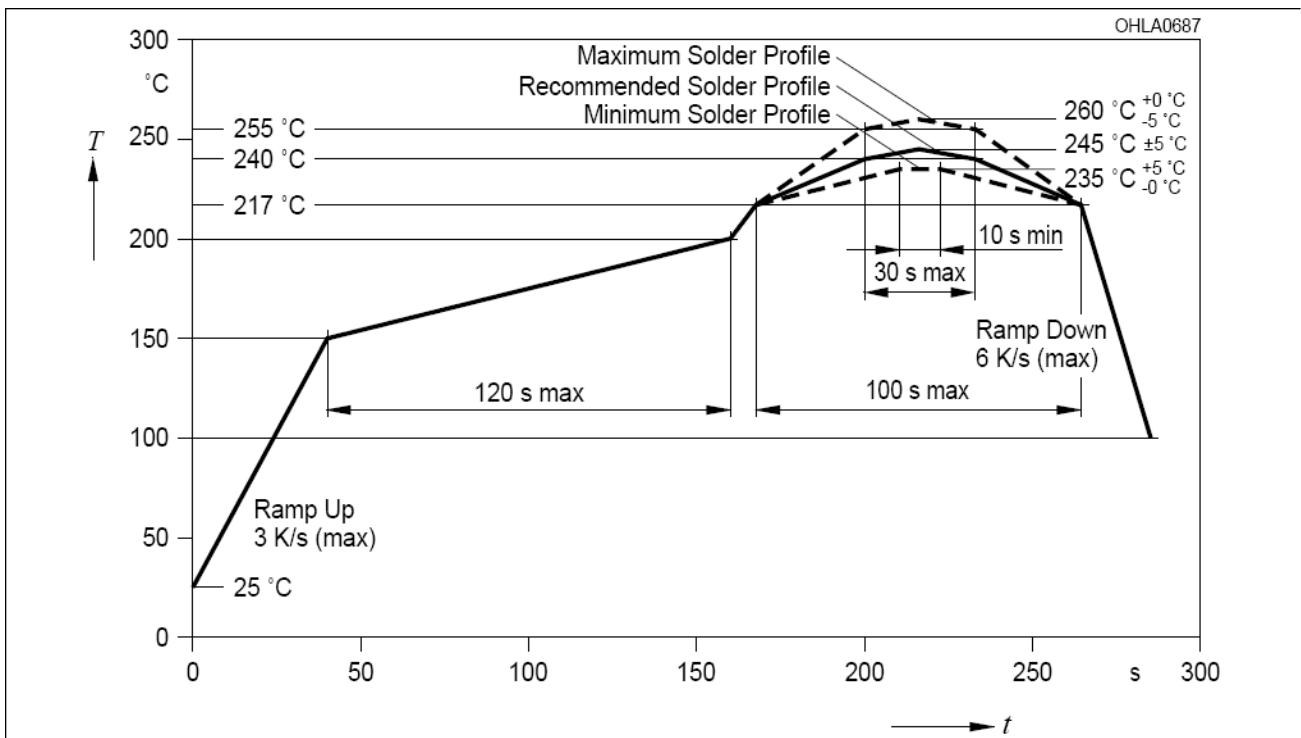


NOTE : KS=AlInGaP YELLOW

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6. SMT SOLDERING INSTRUCTION

(Number of reflow process shall be less than 2 times, and cooling process to normal temperature is required between the first and the second soldering process)



Notes :

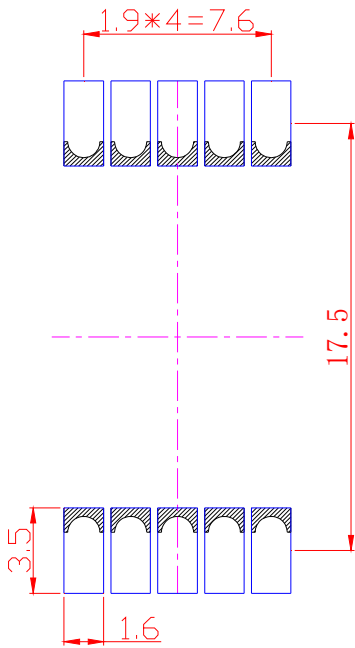
1. Recommended soldering condition

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

2. Number of reflow process shall be less than 2 times, and cooling process to normal temperature is required between the first and the second soldering process.

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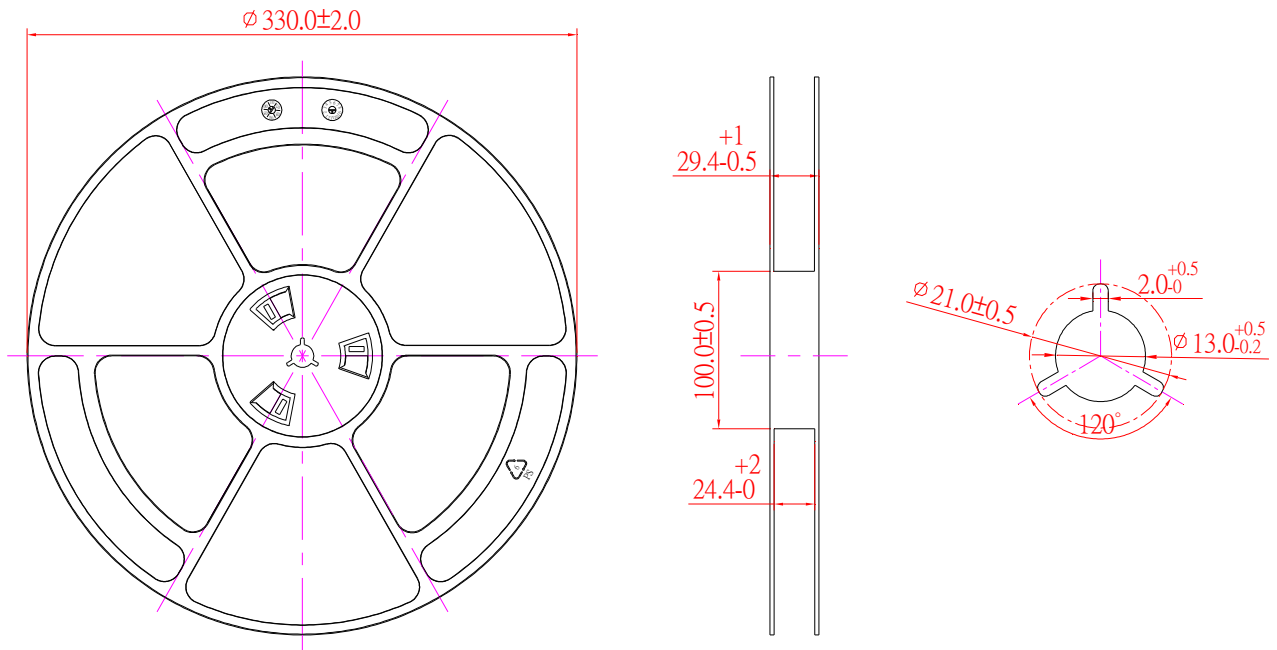
7. Recommended Soldering Pattern



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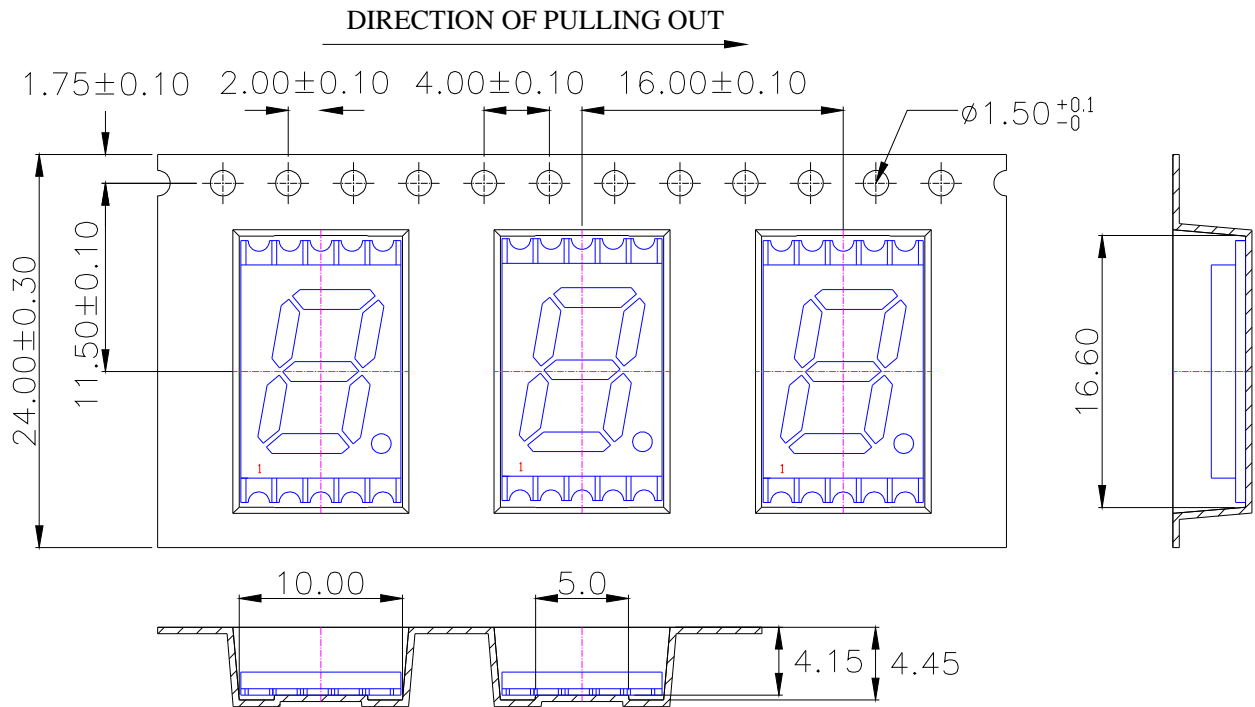
8. Packing Specification

8.1. Packing Reel Dimensions



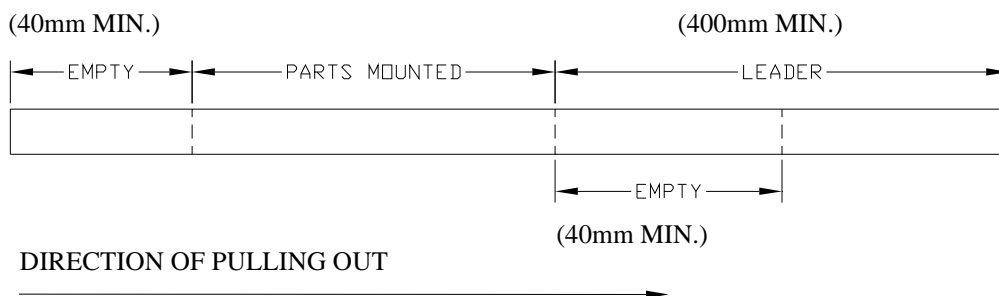
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8.2. Packing Carrier Dimensions



1. 10 sprocket hole pitch cumulative tolerance ± 0.20 .
2. Carrier camber is within 1 mm in 250 mm.
3. All dimensions meet EIA-481-C requirements.
4. Thickness : 0.40 ± 0.05 mm.
5. Packing length per 22" reel : 45.50 Meters.
6. Component load per 13" reel : 800 pcs.
7. Minimum packing quantity is 200 pcs for remainders

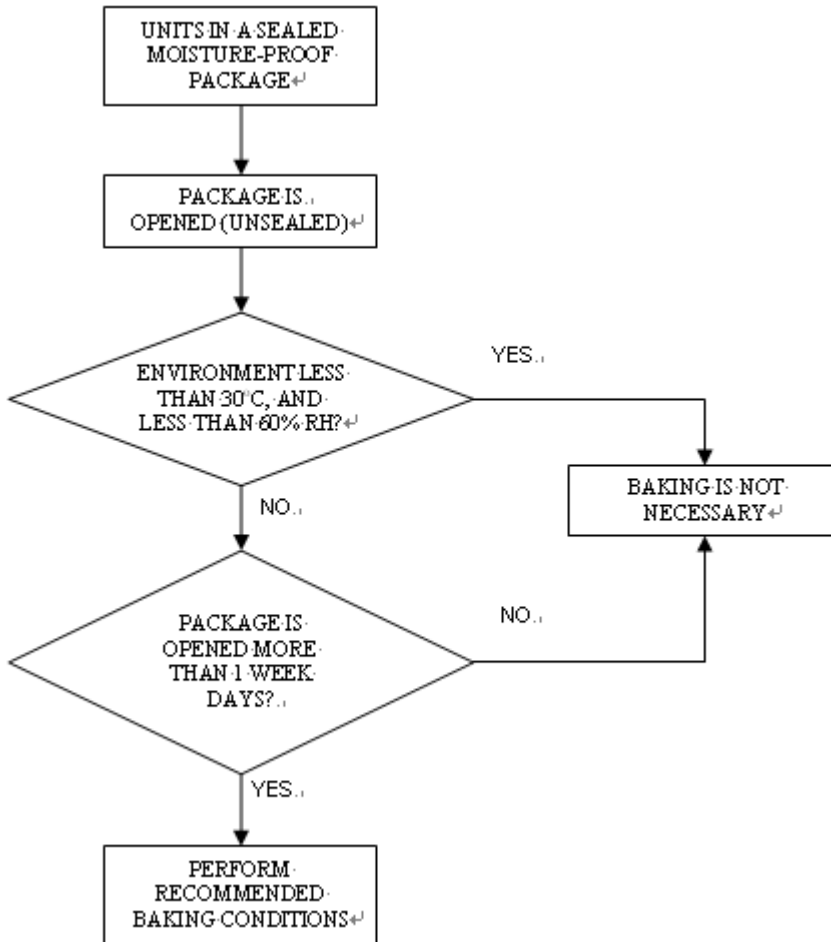
8.3. Trailer part / Leader part



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9. Moisture Proof Packing

All N/D SMD displays are shipped in moisture proof package. The displays should be stored at 30°C or less and 60 % RH or less. Once the package opened, moisture absorption begins.



If the parts are not stored in dry conditions, they must be baked before reflow to prevent damage to the parts. Baking should only be done once

| Package | Temperature | Time |
|---------|-------------|-----------|
| In Reel | 60°C | ≥ 48hours |
| In Bulk | 100°C | ≥ 4hours |
| | 125°C | ≥ 2hours |