



# LITE-ON TECHNOLOGY CORPORATION

Property of Lite-on Only

## LED DISPLAY

### LTS-5825CKG-PST1 DATA SHEET

<u>ITEM</u>	<u>Description</u>	<u>By</u>	<u>DATE</u>
1	New Spec	Reo Lin	2012/06/06
2	Revised P/N name from LTS-5825CKG-P-ST1 to LTS-5825CKG-PST1	Reo Lin	2012/06/19

**FEATURES**

- \* 0.56 inch (14.22 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

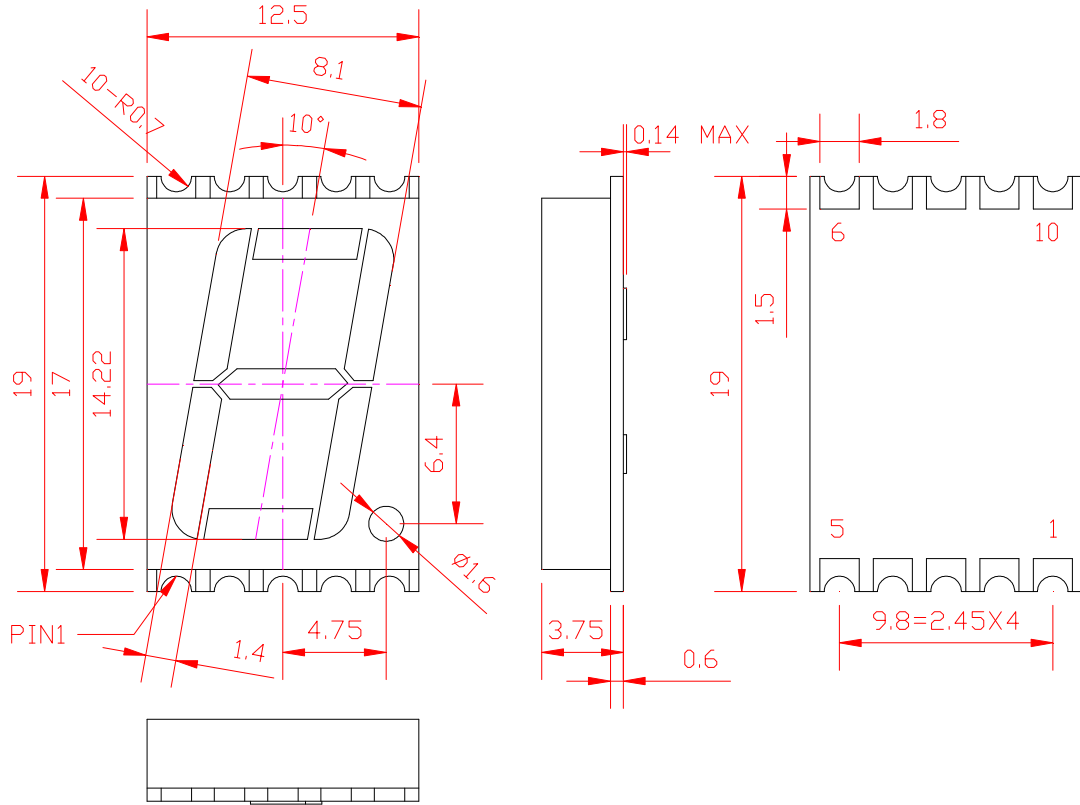
**DESCRIPTION**

The LTS-5825CKG-PST1 is a 0.56 inch (14.22 mm) digit height single digit SMD display. The devices utilize AlInGaP Green LED chips, which are made from AlInGaP on a non-transparent GaAs substrate. The display has black face and white segments.

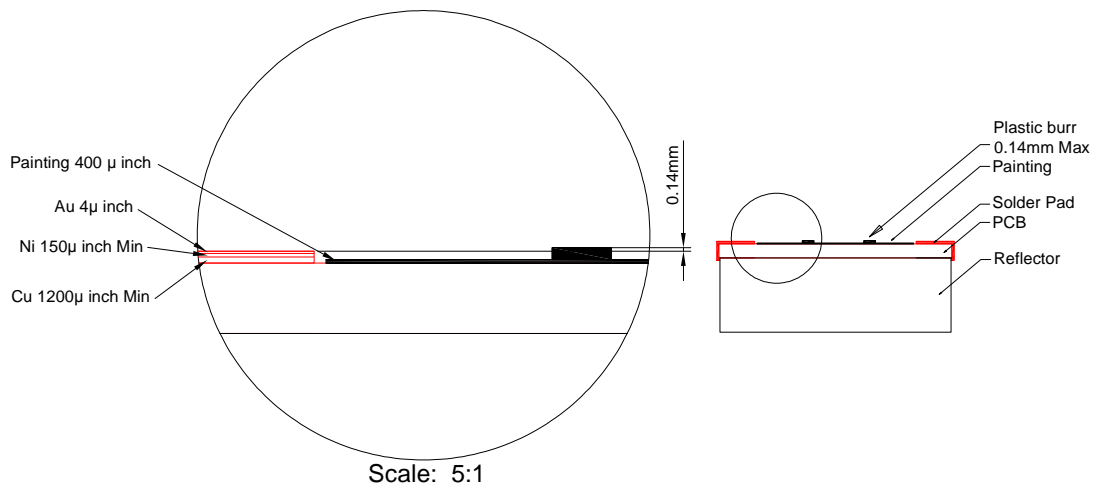
**DEVICE**

<b>PART NO.</b>	<b>DESCRIPTION</b>
AlInGaP green	Common Anode
LTS-5825CKG-PST1	

**PACKAGE DIMENSIONS**



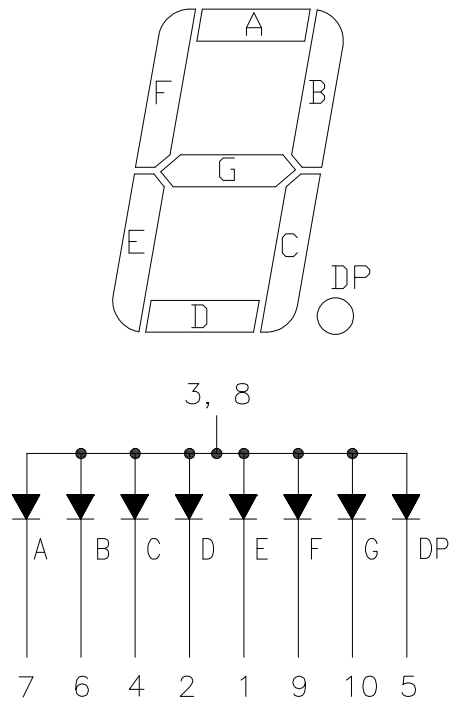
**Solder Pad Vs Painting Diagram**



**NOTES:**

1. Plastic pins' burr maximum 0.14 mm, warping of PCB maximum 0.06 mm.
2. All dimensions are in millimeters. Tolerances are  $\pm 0.25\text{mm}$  (0.01") unless otherwise noted.
3. Solder pad materials and thickness: Cu: 1200  $\mu$  inch Ni: Min 150  $\mu$  inch Au: 4  $\mu$  inch.

**INTERNAL CIRCUIT DIAGRAM**



**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

### ABSOLUTE MAXIMUM RATING AT Ta = 25 ° C

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	70	mW
Peak Forward Current Per Segment (Frequency 1Khz,10% duty cycle )	60	mA
Continuous Forward Current Per Segment	25	mA
Forward Current Derating from 25 ° C	0.28	mA/° C
Operating Temperature Range	-40 ° C to +105 ° C	
Storage Temperature Range	-40 ° C to +105 ° C	
Soldering Conditions: 1/16 inch Below Seating Plane for 3 Seconds at 260 ° C		

### ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta = 25 ° C

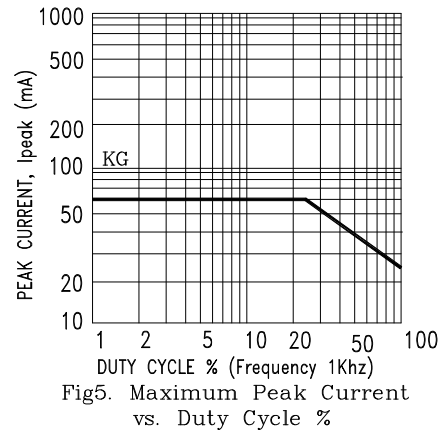
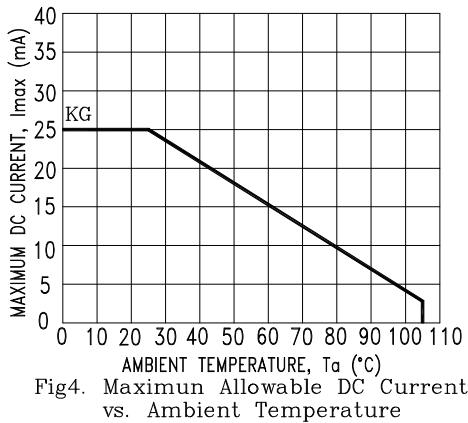
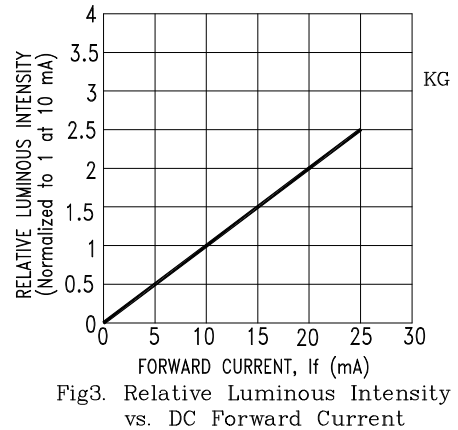
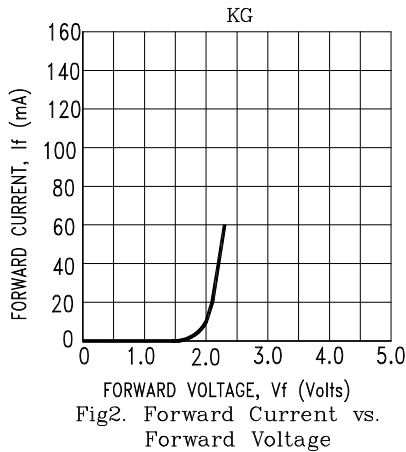
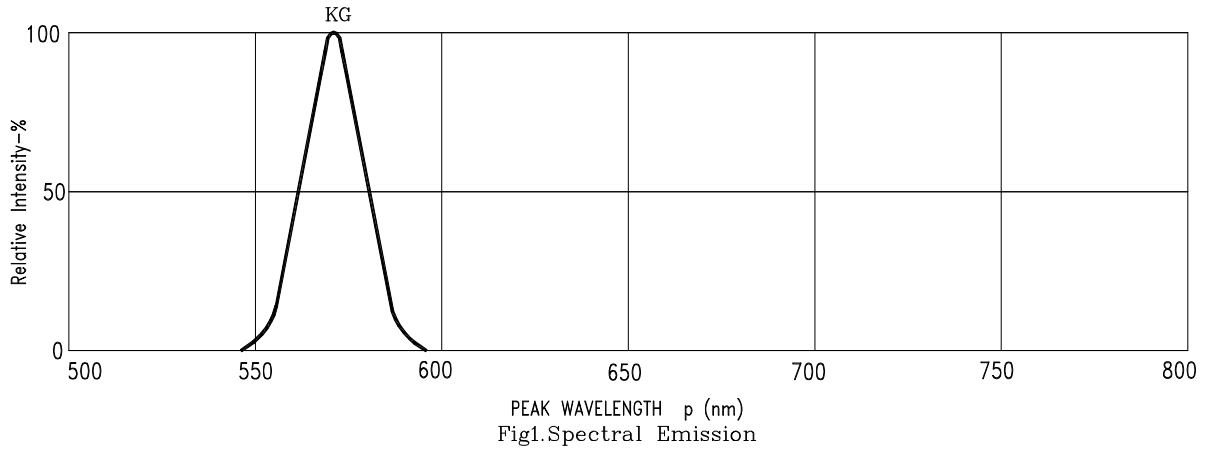
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Luminous Intensity	IV	501	1700		μ cd	IF=1mA
Peak Emission Wavelength	λp		571		nm	IF=20mA
Spectral Line Half-Width	Δλ		15		nm	IF=20mA
Dominant Wavelength	λd		572		nm	IF=20mA
Forward Voltage Per Segment	VF		2.05	2.6	V	IF=20mA
Reverse Current Per Segment <sup>(2)</sup>	IR			100	uA	VR=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		IF=1mA

Note:

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

**TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES**

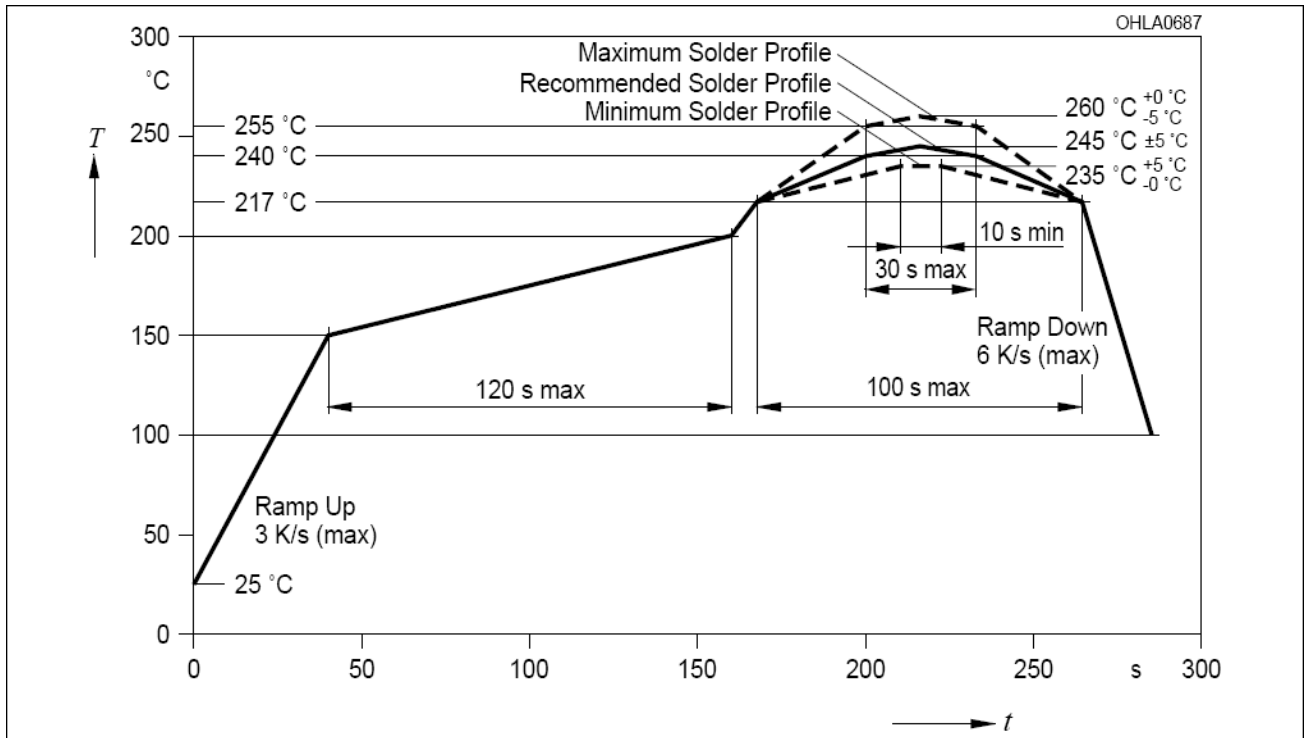
(25°C Ambient Temperature Unless Otherwise Noted)



NOTE : KG=AlInGaP Green

**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)



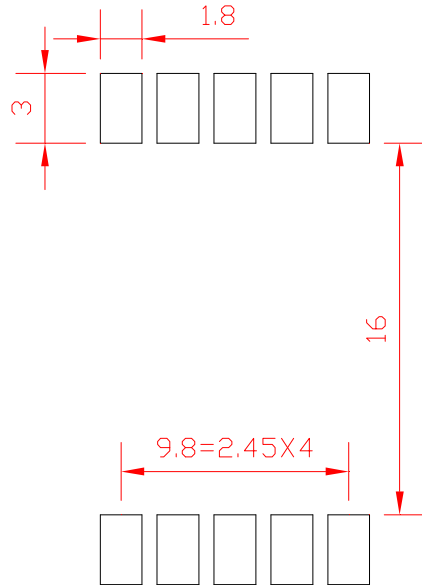
Note:

1. Recommended soldering condition:

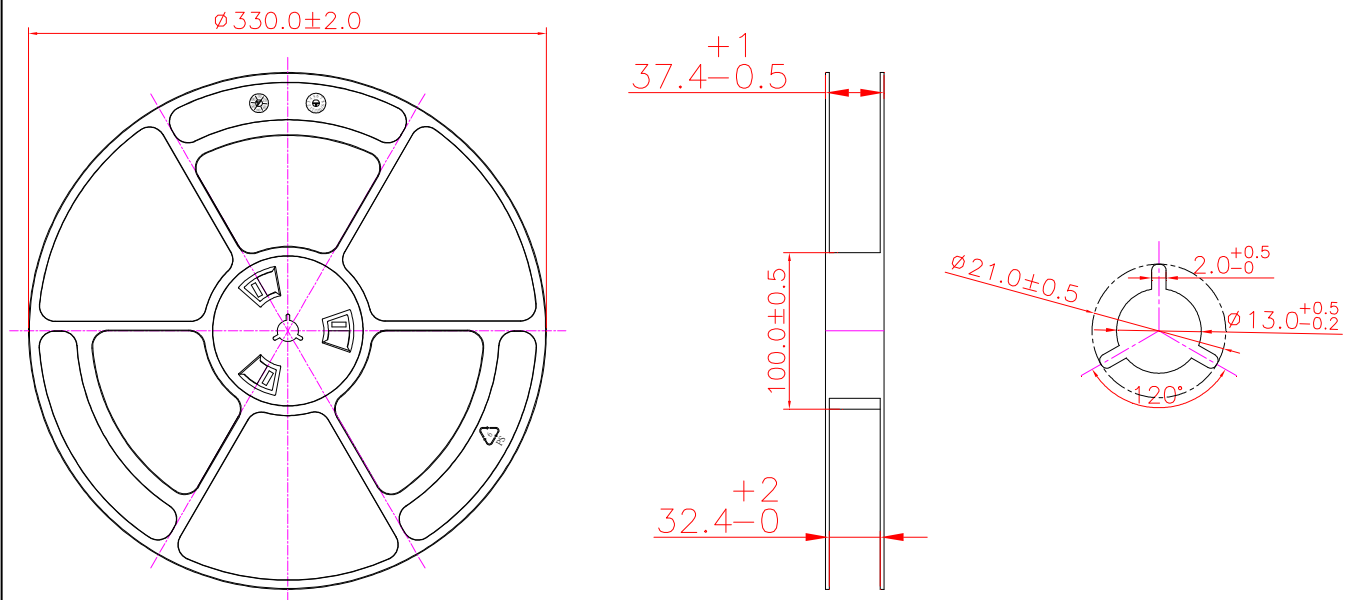
<b>Reflow Soldering (Two times only)</b>		<b>Soldering Iron (One time only)</b>	
Pre-heat:	120~150 °C	Temperature	300°C Max.
Pre-heat time:	120sec. Max.	Soldering time	3sec. Max.
Peak temperature:	260 °C Max.		
Soldering time:	5sec. Max.		

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.

**RECOMMENDED SOLDERING PATTERN (UNIT: MM)**



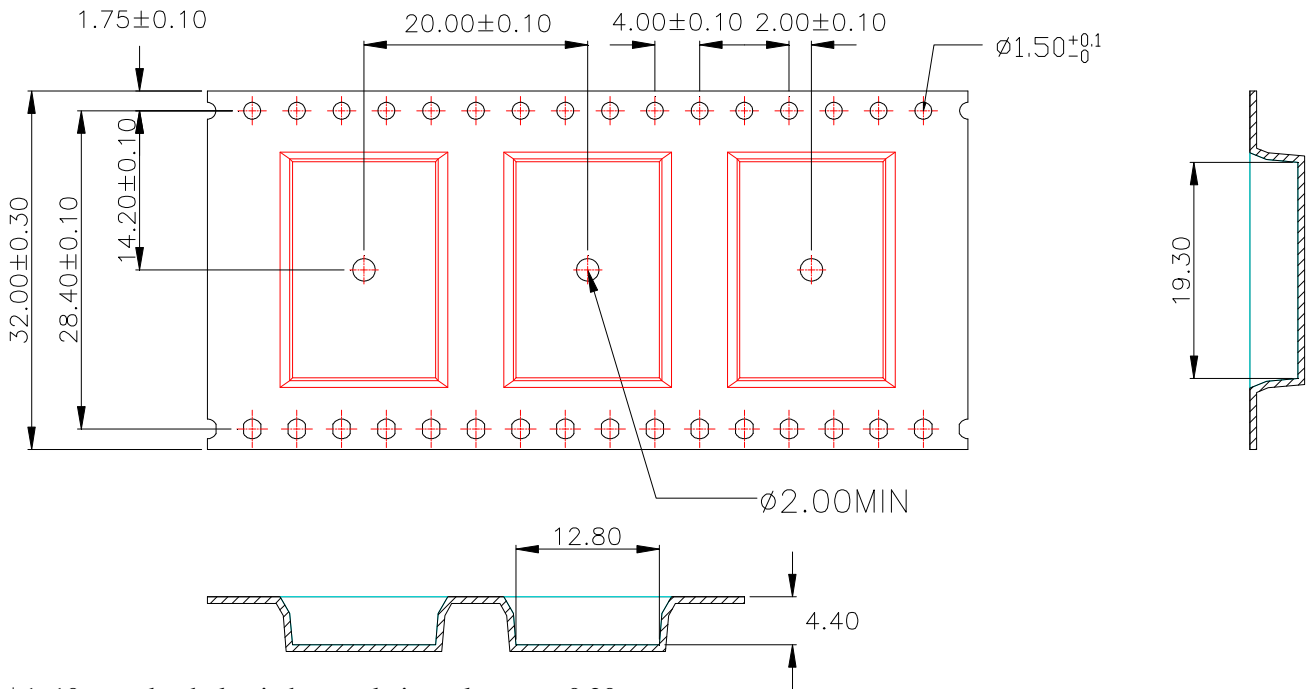
**PACKING REEL DIMENSIONS**





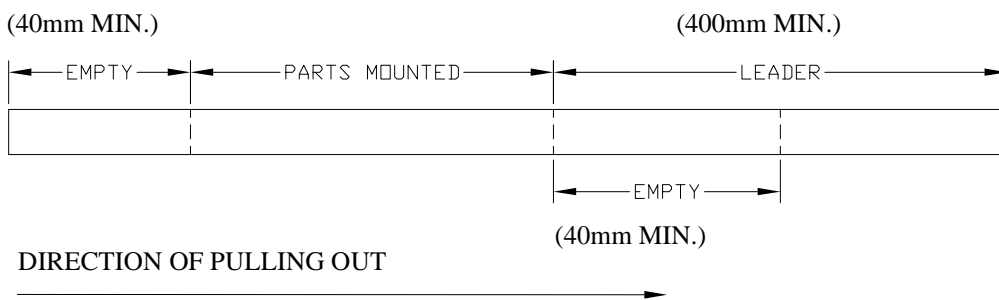
**PACKING CARRIER DIMENSIONS**

**1. Taping parts:**



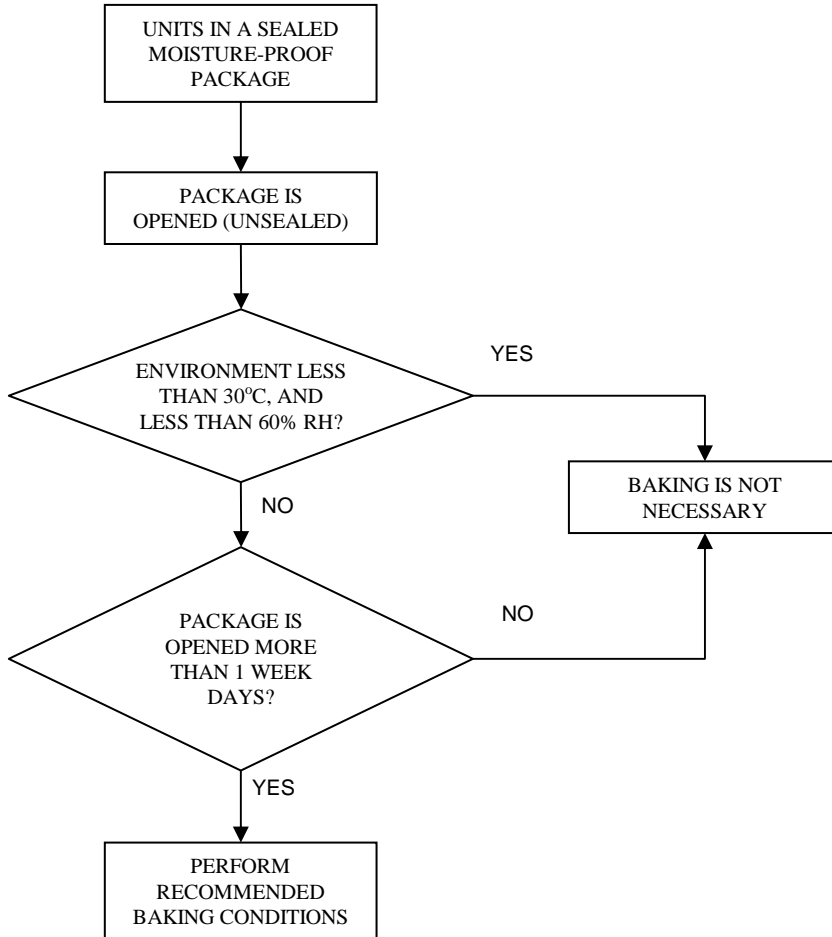
- 1. 10 sprocket hole pitch cumulative tolerance  $\pm 0.20$ .
- 2. Carrier camber is within 1 mm in 250 mm.
- 3. Material : Black Conductive Polystyrene Alloy.
- 4. All dimensions meet EIA-481-D requirements.
- 5. Thickness :  $0.30 \pm 0.05$ mm.
- 6. Packing length per 22" reel : 44.5 Meters.(1:3)
- 7. Component load per 13" reel : 700 pcs.

**2. Trailer part/ Leader part:**



**MOISTURE PROOF PACKAGING**

All N/D SMD displays are shipped in moisture proof package. The displays should be stored at 30°C or less and 90% RH or less. Once the package opened, moisture absorption begins.



**Baking Conditions**

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

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

**Baking should only be done once.**