LED DISPLAY

LSHD-A103
DATA SHEET

ITEM	DESCRIPTION	ISSUER	DATE
1	New	Thomas Yu	12/31/2002

FEATURES

* 0.3 inch (7.62 mm) DIGIT HEIGHT
* EXCELLENT SEGMENT UNIFORMITY
* LOW POWER REQUIREMENT
* HIGH BRIGHTNESS AND HIGH CONTRAST
* WIDE VIEWING ANGLE
* SOLID STATE RELIABILITY
* BINNED FOR LUMINOUS INTENSITY

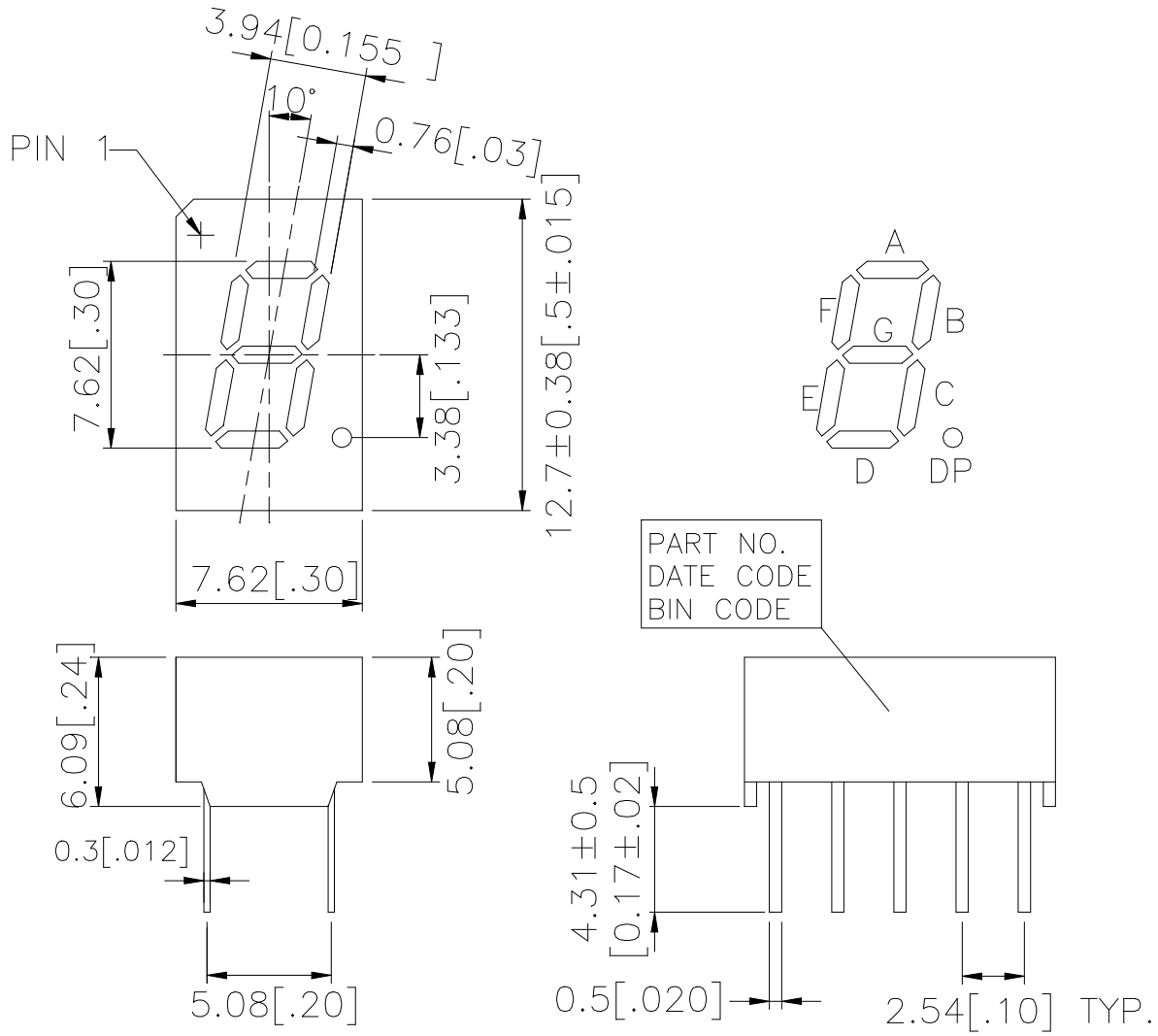
DESCRIPTION

The LSHD-A103 is a 0.3 inch (7.62 mm) digit height single-digit display. This device uses AS-AlInGaP RED LED chips (AlInGaP epi on GaAs substrate). The display has light gray face and white segments.

DEVICE

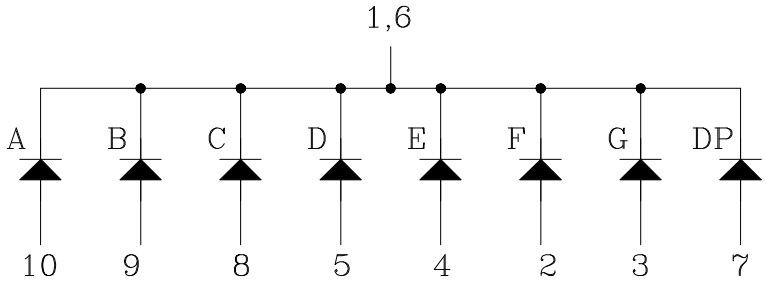
PART NO.	DESCRIPTION
AlInGaP RED	Common Cathode
LSHD-A103	Rt. Hand Decimal

PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are ± 0.25mm (0.01“) unless otherwise noted.

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

No.	CONNECTION
1	Common Cathode
2	Anode F
3	Anode G
4	Anode E
5	Anode D
6	Common Cathode
7	Anode DP
8	Anode C
9	Anode B
10	Anode A

ABSOLUTE MAXIMUM RATING AT Ta = 25°C

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	70	mW
Peak Forward Current Per Segment (Frequency 1Khz, 15% duty cycle)	90	mA
Continuous Forward Current Per Segment	25	mA
Forward Current Derating from 25^0C	0.28	mA/^{0}C
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35^0C to +105^0C	
Storage Temperature Range	-35^0C to +105^0C	
Soldering Conditions : 1/16 inch below seating plane for 3 seconds at 260^0C		

ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta = 25°C

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION
Average Luminous Intensity Per Segment	I_V	200 3400	692 9000		μcd	I_F = 1mA I_F = 10mA
Peak Emission Wavelength	λp		650		nm	I_F = 20mA
Spectral Line Half-Width	Δλ		20		nm	I_F = 20mA
Dominant Wavelength	λd		639		nm	I_F = 20mA
Forward Voltage Per Segment	V_F		2.1	2.6	V	I_F = 20mA
Reverse Current Per Segment	I_R			100	μA	V_R = 5V
Luminous Intensity Matching Ratio	I_V-m			2 : 1		I_F = 1mA

Note: Luminous Intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

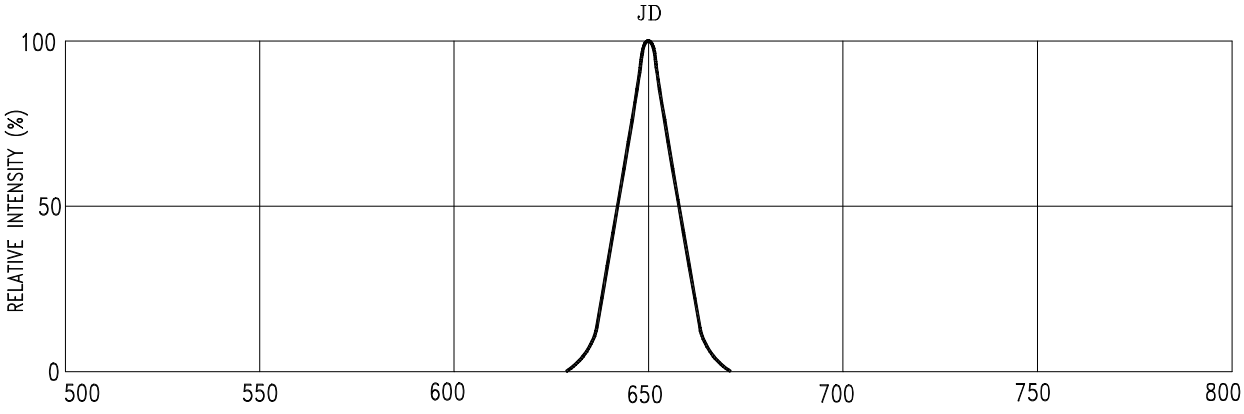


Fig1.Spectral Emission

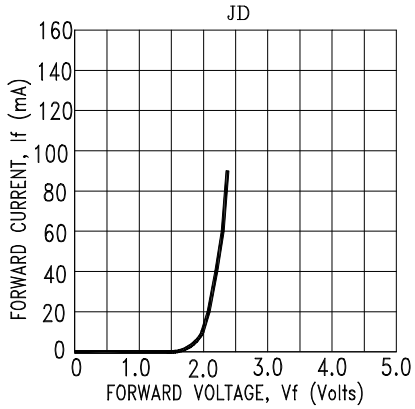


Fig2. Forward Current vs. Forward Voltage

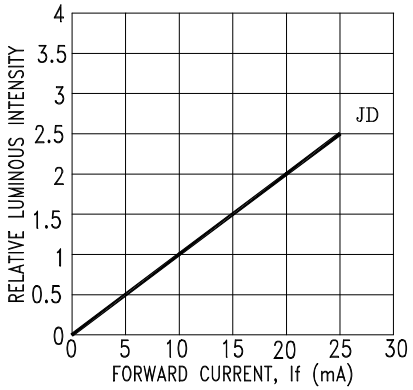


Fig3. Relative Luminous Intensity vs. DC Forward Current

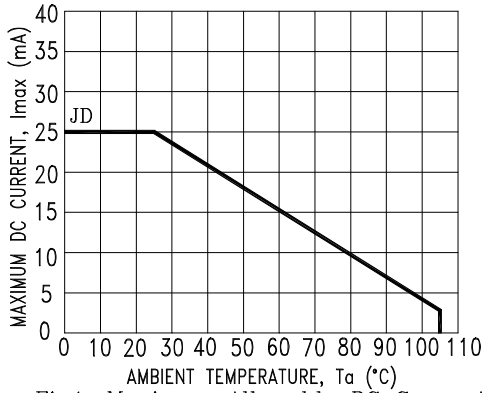


Fig4. Maximun Allowable DC Current vs. Ambient Temperature

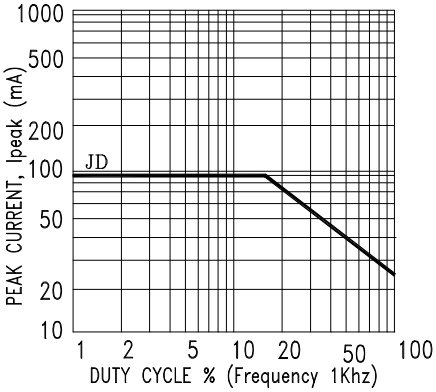


Fig5. Maximum Peak Current vs. Duty Cycle %