



# LED Display

## Product Data Sheet

### LTD-4708JF

Spec No.: DS30-2001-321

Effective Date: 05/07/2002

Revision: -

**LITE-ON DCC**

**RELEASE**

## FEATURES

- \* 0.4-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.

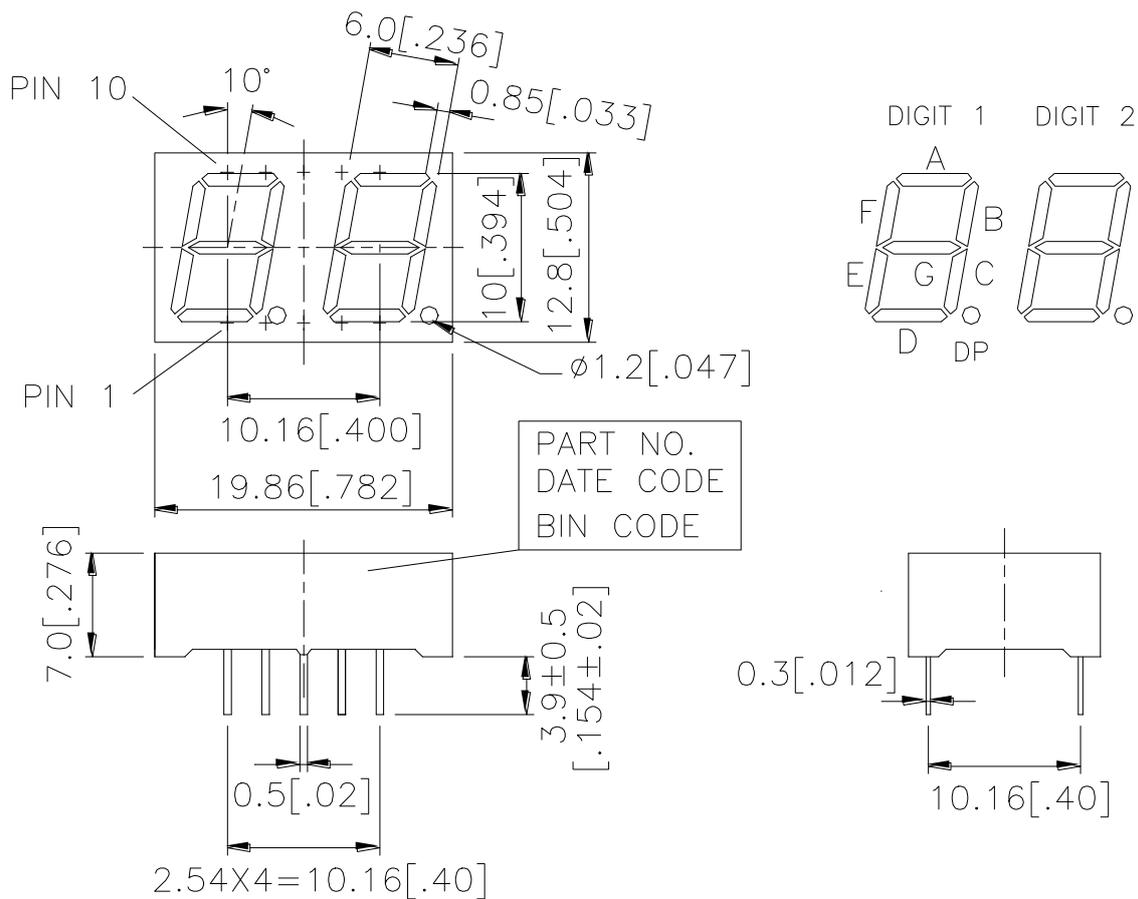
## DESCRIPTION

The LTD-4708JF is a 0.4-inch (10.0-mm) digit height dual digit seven-segment display. This device utilizes AlInGaP Yellow Orange LED chips, which are made from AlInGaP on a non-transparent GaAs substrate, and has a gray face and white segments.

## DEVICE

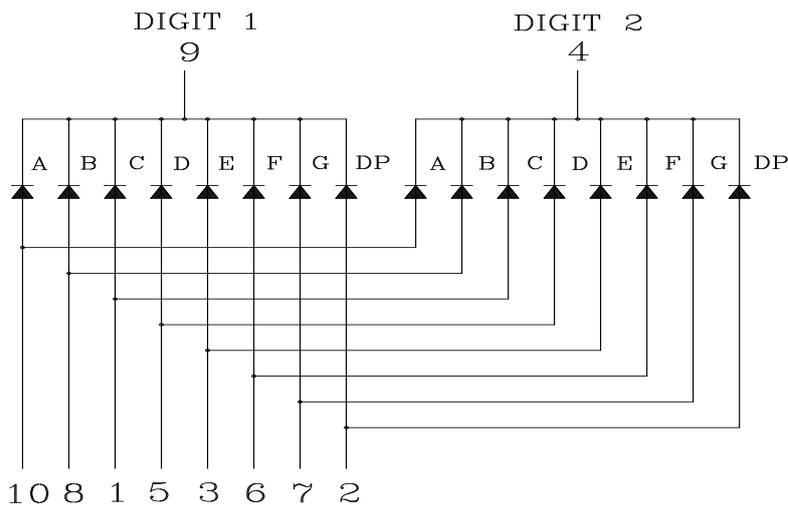
PART NO.	DESCRIPTION
AlInGaP Yellow Orange	Duplex Common Cathode
LTD-4708JF	Rt. Hand Decimal

### PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are  $\pm 0.25$ -mm (0.01") unless otherwise noted.

### INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

<b>No.</b>	<b>CONNECTION</b>
1	ANODE C
2	ANODE D.P.
3	ANODE E
4	COMMON CATHODE (DIGIT 2)
5	ANODE D
6	ANODE F
7	ANODE G
8	ANODE B
9	COMMON CATHODE (DIGIT 1)
10	ANODE A

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

<b>PARAMETER</b>	<b>MAXIMUM RATING</b>	<b>UNIT</b>
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	0.33	mA/°C
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35°C to +85°C	
Storage Temperature Range	-35°C to +85°C	
Solder Temperature 1/16 inch Below Seating Plane for 3 Seconds at 260°C		

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

<b>PARAMETER</b>	<b>SYMBOL</b>	<b>MIN.</b>	<b>TYP.</b>	<b>MAX.</b>	<b>UNIT</b>	<b>TEST CONDITION</b>
Average Luminous Intensity	I <sub>v</sub>	320	850		μcd	I <sub>F</sub> =1mA
Peak Emission Wavelength	λ <sub>p</sub>		611		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		17		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		605		nm	I <sub>F</sub> =20mA
Forward Voltage Per Segment	V <sub>F</sub>		2.05	2.6	V	I <sub>F</sub> =1mA
Reverse Current Per Segment	I <sub>R</sub>			100	μA	V <sub>R</sub> =5V
Luminous Intensity Matching Ratio	I <sub>v</sub> -m			2:1		I <sub>F</sub> =1mA

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

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

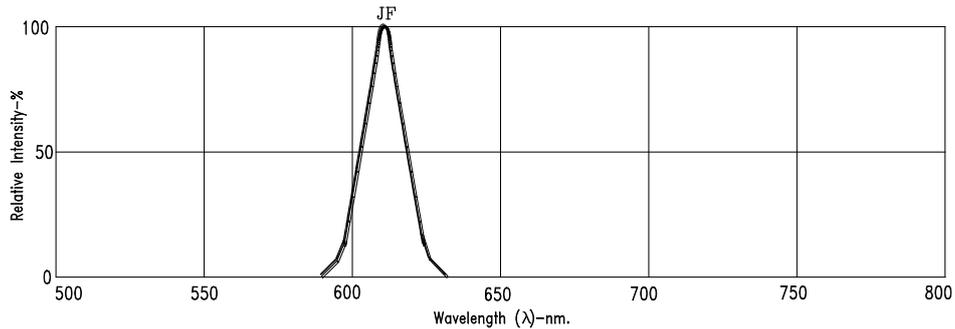


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

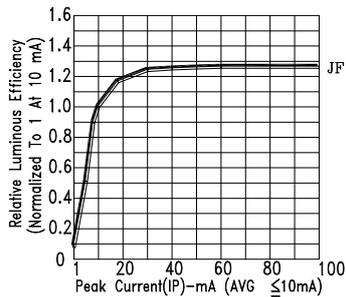


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT

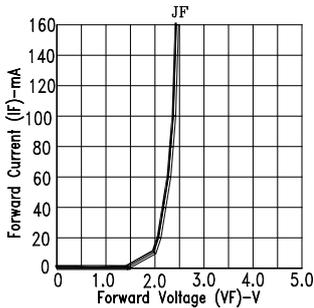


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

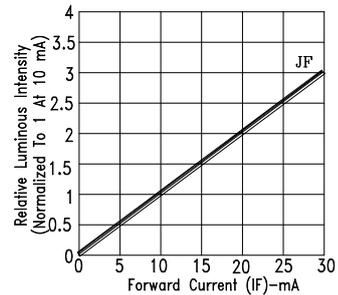


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

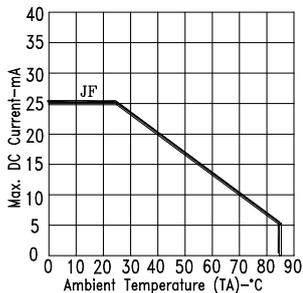


Fig5. MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE.

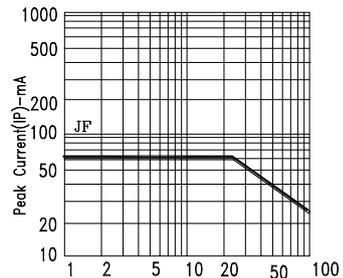


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE : JF=AlInGaP YELLOW ORANGE