

## **FEATURES**

- \* 0.52 inch (13.2 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**

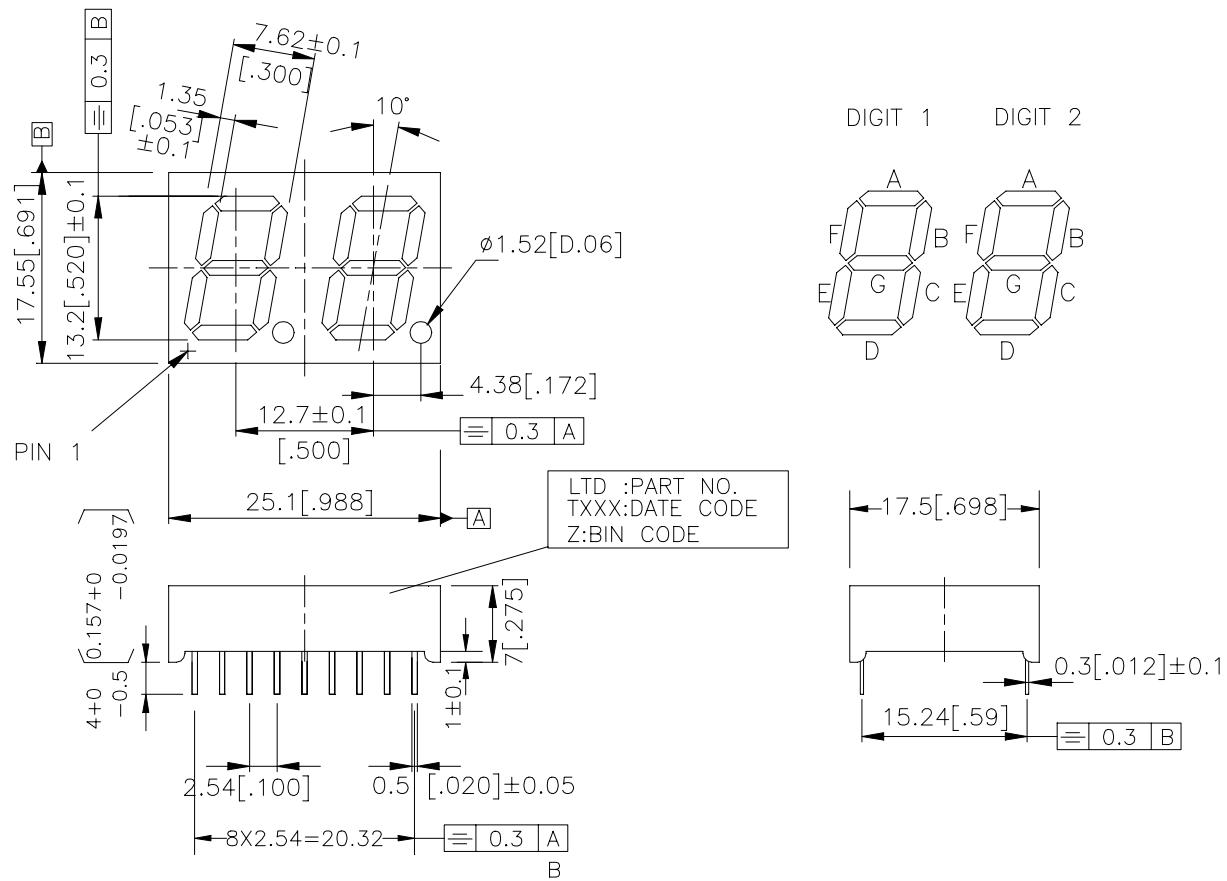
The LTD-5405WC is a 0.52 inch (13.2 mm) digit height dual digit low current seven-segment display. This device utilizes AlGaAs red LED chips, which are made from AlGaAs on a non-transparent GaAs substrate, and has a gray face and white segments.

This low current seven-segment display is designed to perform under low power consumption. It is tested and selected for it's excellent low current characteristics. It can be driven in low current condition and the segments are matched. This driving current as low as 1mA per segment is applicable.

## **DEVICE**

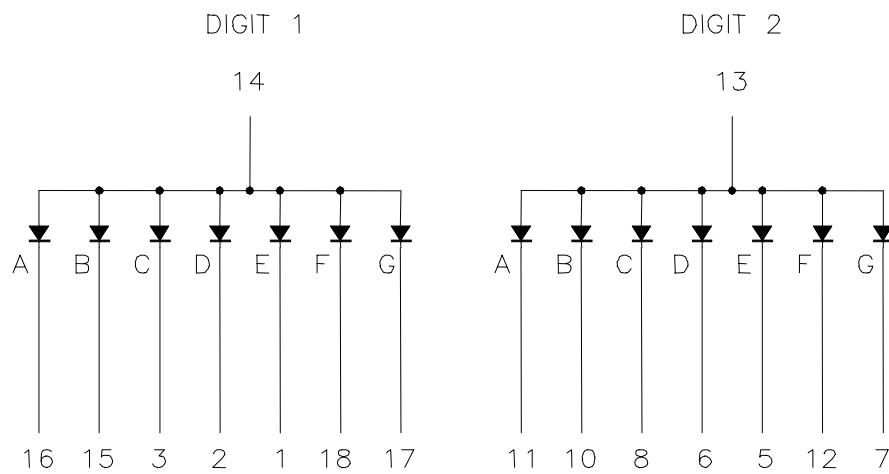
<b>PART NO.</b>	<b>DESCRIPTION</b>
AlGaAs RED	
LTD-5405WC	COMMON ANODE

## PACKAGE DIMENSIONS



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

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

No.	CONNECTION	
1	CATHODE	E (DIGIT 1)
2	CATHODE	D (DIGIT 1)
3	CATHODE	C (DIGIT 1)
4	NO	PIN
5	CATHODE	E (DIGIT 2)
6	CATHODE	D(DIGIT 2)
7	CATHODE	G(DIGIT 2)
8	CATHODE	C(DIGIT 2)
9	NO	PIN
10	CATHODE	B(DIGIT 2)
11	CATHODE	A(DIGIT 2)
12	CATHODE	F(DIGIT 2)
13	COMMON	ANODE (DIGIT 2)
14	COMMON	ANODE (DIGIT 1)
15	CATHODE	B(DIGIT 1)
16	CATHODE	A(DIGIT 1)
17	CATHODE	G(DIGIT 1)
18	CATHODE	F(DIGIT 1)

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

<b>PARAMETER</b>	<b>MAXIMUM RATING</b>	<b>UNIT</b>
Power Dissipation Per Segment	75	mW
Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width)	125	mA
Continuous Forward Current Per Segment Derating Linear From 25°C Per Segment	30 0.4	mA 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: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane.		

**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	Iv	320	700		μcd	I <sub>F</sub> =1mA
			3750		μcd	I <sub>F</sub> =5mA
Peak Emission Wavelength	λ <sub>p</sub>		660		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		35		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		638		nm	I <sub>F</sub> =20mA
Forward Voltage Per Segment	V <sub>F</sub>	1.6 1.7 1.8	2.4	V	I <sub>F</sub> =1mA I <sub>F</sub> =5mA I <sub>F</sub> =20mA	I <sub>F</sub> =1mA
						I <sub>F</sub> =5mA
						I <sub>F</sub> =20mA
Reverse Current Per Segment	I <sub>R</sub>			10	μA	V <sub>R</sub> =5V
Luminous Intensity Matching Ratio	I <sub>v-m</sub>			2:1		I <sub>F</sub> =10mA

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

**TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES**

(25°C Ambient Temperature Unless Otherwise Noted)

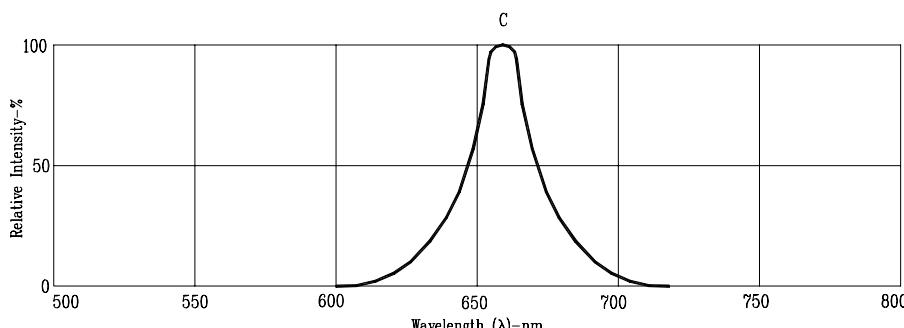
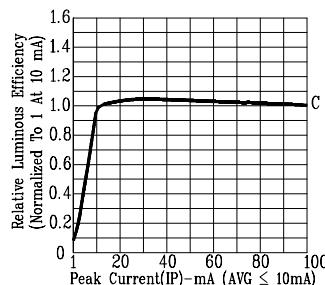
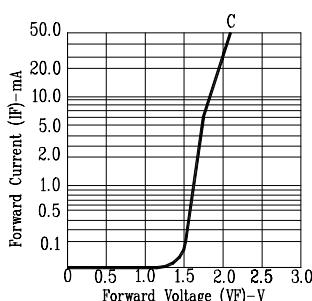
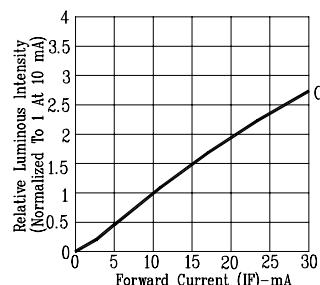
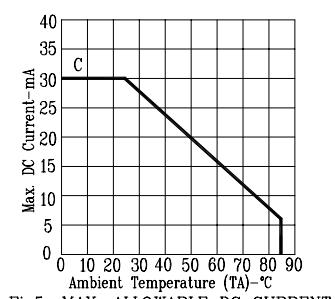
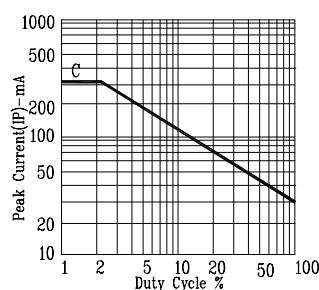


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

Fig2. RELATIVE LUMINOUS EFFICIENCY  
(LUMINOUS INTENSITY PER UNIT  
CURRENT) VS. PEAK CURRENT  
(REFRESH RATE 1KHz)Fig3. FORWARD CURRENT VS.  
FORWARD VOLTAGEFig4. RELATIVE LUMINOUS INTENSITY  
VS. FORWARD CURRENTFig5. MAX. ALLOWABLE DC CURRENT  
VS. AMBIENT TEMPERATURE.Fig6. MAX. PEAK CURRENT VS.  
DUTY CYCLE %  
(REFRESH RATE 1KHz)

NOTE: C=AlGaAs RED