

TRIPLE DIGIT SMD DISPLAY (0.28")

# LSTD215/6DGM-XX

## DATA SHEET

DOC.NO : QW0905- LSTD215/6DGM-XX

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REV. : A

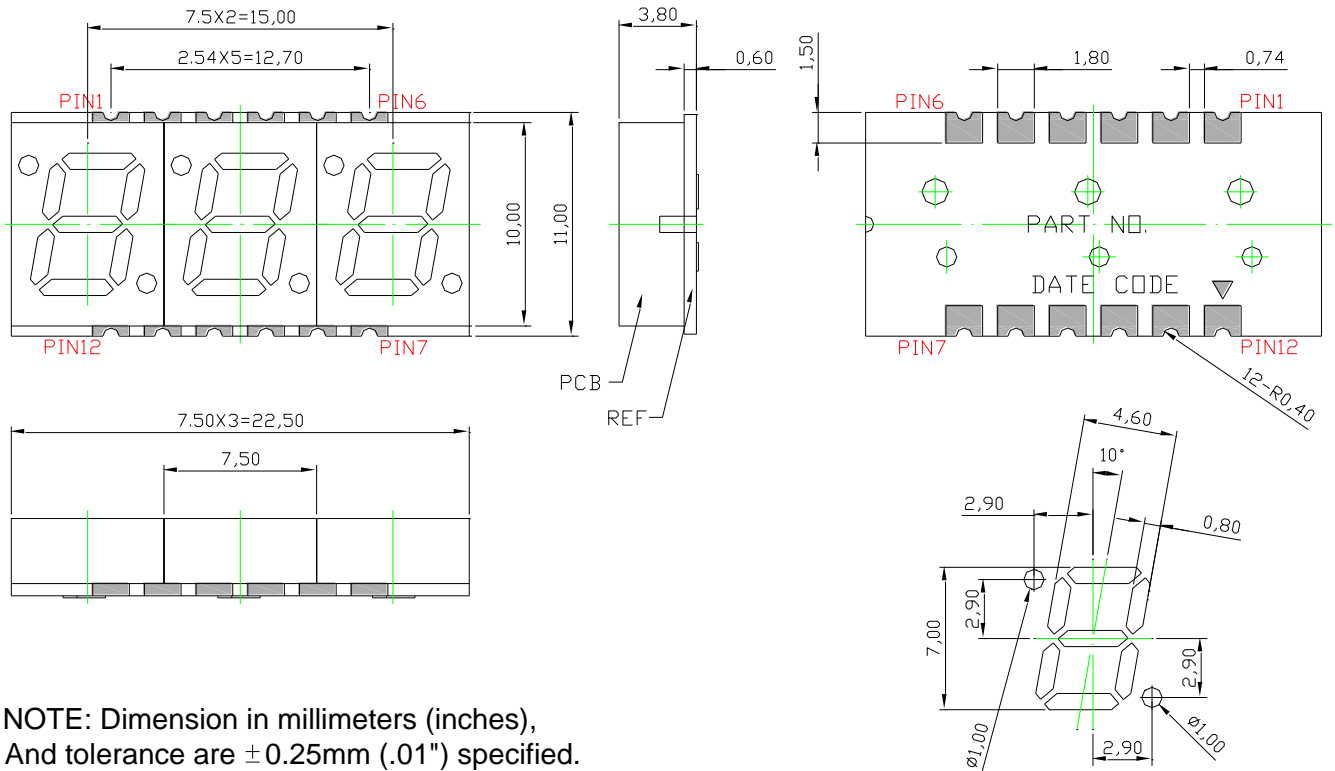
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DATE : 28 – Jan. – 2019

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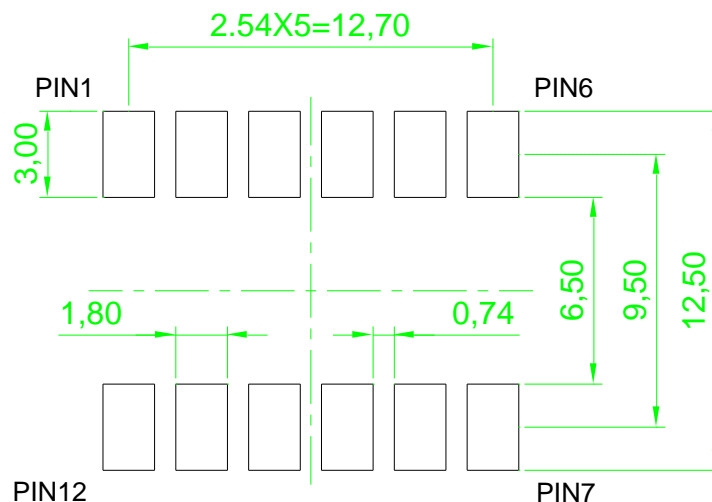


## Package Dimensions

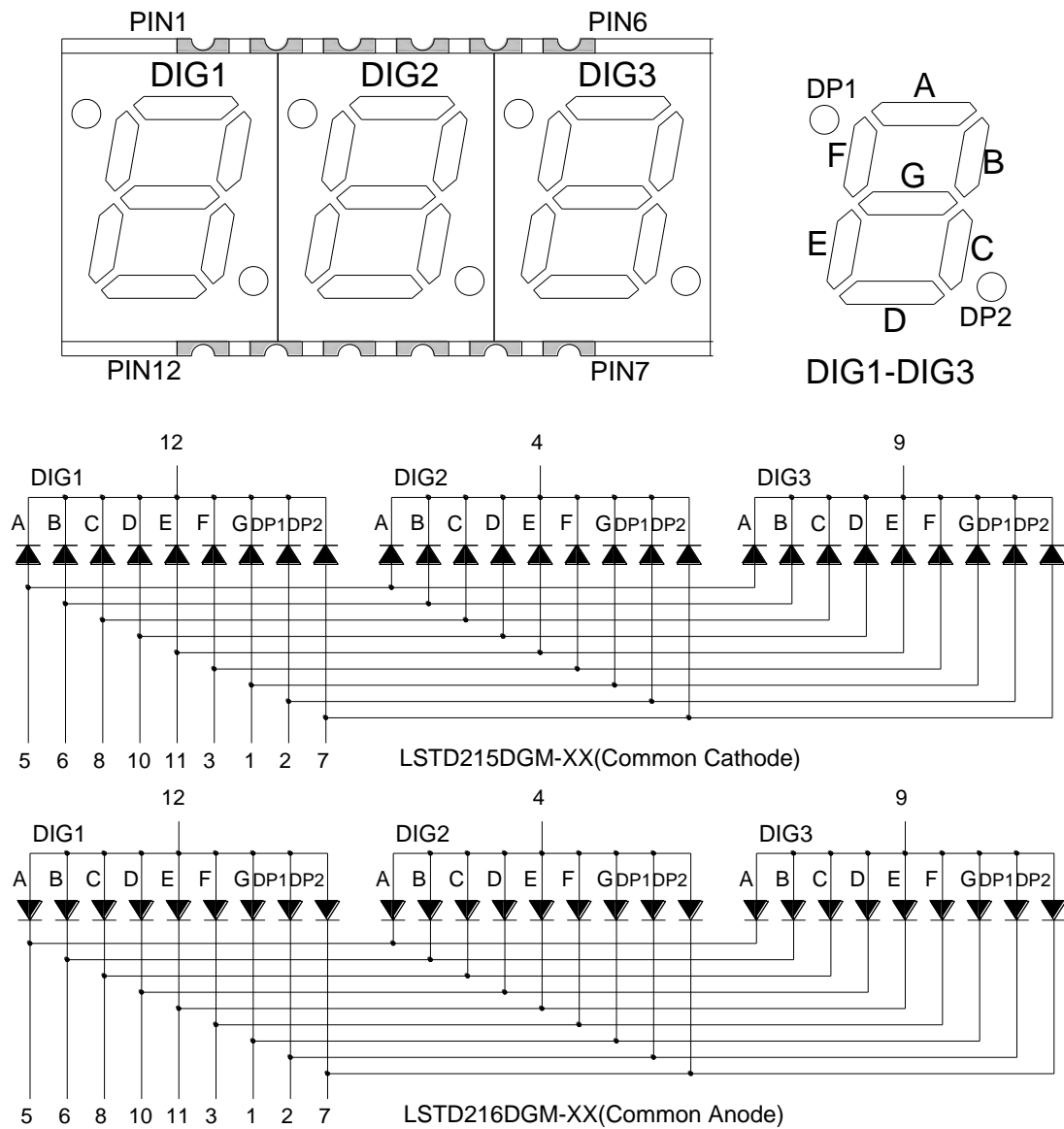


NOTE: Dimension in millimeters (inches),  
And tolerance are  $\pm 0.25$ mm (.01") specified.

## Recommended Soldering Pad Dimensions



## Internal Circuit Diagram



## Electrical Connection

PIN NO.	LSTD215DGM-XX	PIN NO.	LSTD216DGM-XX
1	Anode G	1	Cathode G
2	Anode DP1	2	Cathode DP1
3	Anode F	3	Cathode F
4	Common Cathode DIG2	4	Common Anode DIG2
5	Anode A	5	Cathode A
6	Anode B	6	Cathode B
7	Anode DP2	7	Cathode DP2
8	Anode C	8	Cathode C
9	Common Cathode DIG3	9	Common Anode DIG3
10	Anode D	10	Cathode D
11	Anode E	11	Cathode E
12	Common Cathode DIG1	12	Common Anode DIG1

## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Ratings	UNIT
Power Dissipation	PD	120	mW
Peak pulse current Duty 1/10@10KHz	I <sub>FP</sub>	100	mA
Continuous forward current	I <sub>F</sub>	30	mA
Storage Temperature	T <sub>stg</sub>	-40 ~ +105	°C
Operating Temperature	T <sub>opr</sub>	-40 ~ +105	°C

## Typical Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	IV	140	----	275	mcd	IF=20mA
Dominant Wavelength	$\lambda D$	515	----	530	nm	IF=20mA
Spectral Line Half-Width	$\Delta \lambda$	----	30	----	nm	IF=20mA
Forward Voltage	VF	----	2.8	3.2	V	IF=20mA
Reverse Current	I <sub>r</sub>	----	----	10	$\mu A$	VR=5V

Note : 1.The forward voltage data did not including  $\pm 0.1V$  testing tolerance.

2.The luminous intensity data did not including  $\pm 15\%$  testing tolerance.

## Luminous Intensity Classification

BIN CODE	Iv(mcd) at 20mA	
	Min	Max
R	140	185
S	185.1	230
T	230.1	275

## Dominant Wavelength Classification

BIN CODE	$\lambda$ D(nm) at 20mA	
	Min	Max
1	515	520
2	520.1	525
3	525.1	530

## Typical Electro-Optical Characteristics Curve

(25 °C Free Air Temperature Unless Otherwise Specified)

DGM: Super Bright RED (AlGaInP/GaAs) CURVE

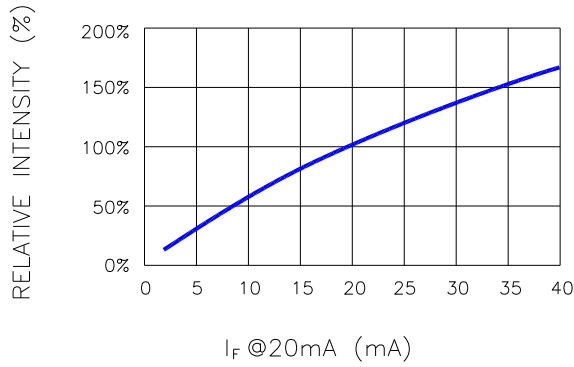


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

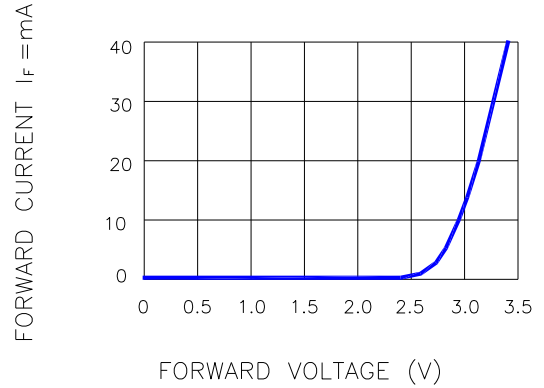


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

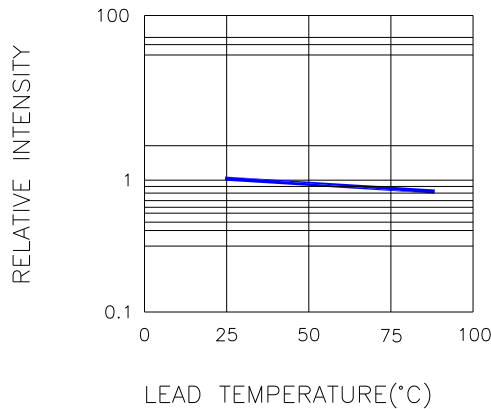


Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE  
(PULSED 20 mA; 300us PULSE, 10ms PERIOD)

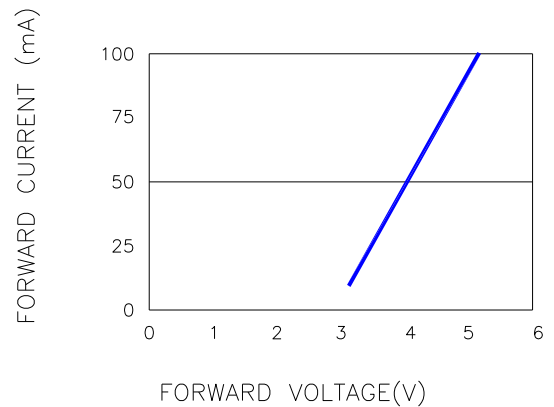


Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD CURRENT  
(100us TEST PULSE, 1% DUTY CYCLE)

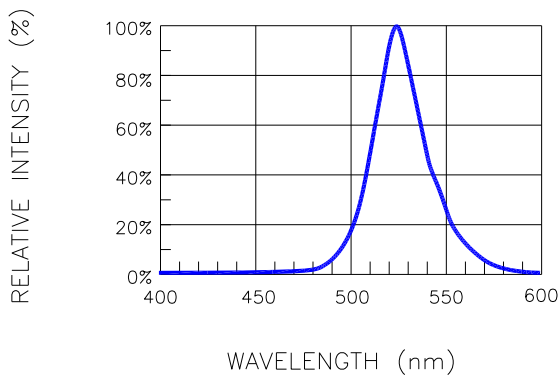


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

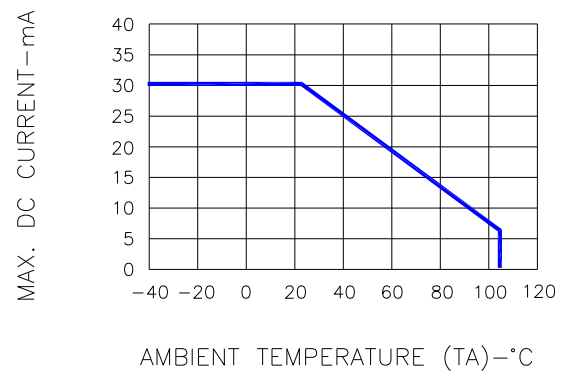
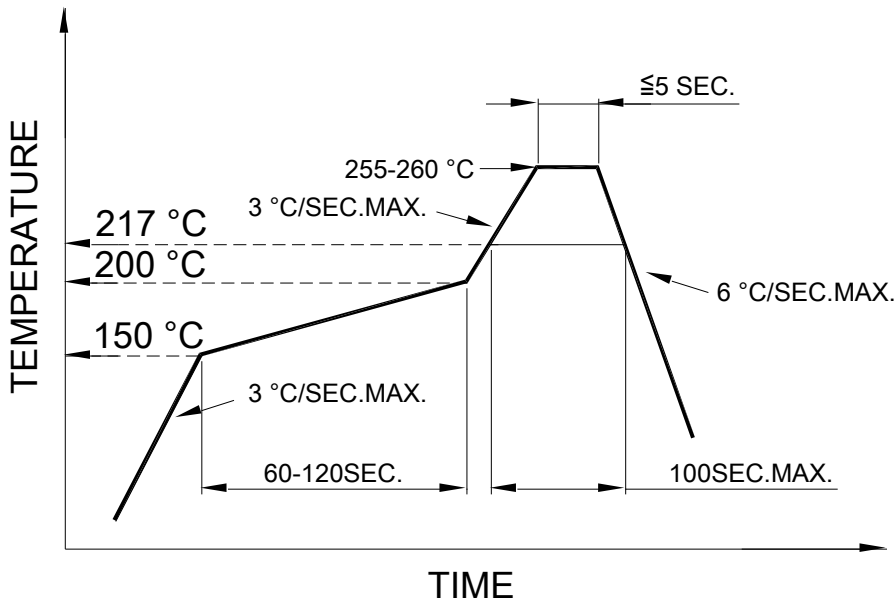


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

## SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



## SOLDERING IRON

Basic spec is  $\leq 4$  sec when 260°C. If temperature is higher, time should be shorter (+10°C→1 sec). Power dissipation of Iron should be smaller than 15W, and temperature should be controllable. Surface temperature of the device should be under 230°C.

## REWORK

Customer must finish rework within 3 sec. under 350°C.

The head of soldering iron cannot touch copper foil.

## STORAGED CONDITION

In factory original sealed bag package

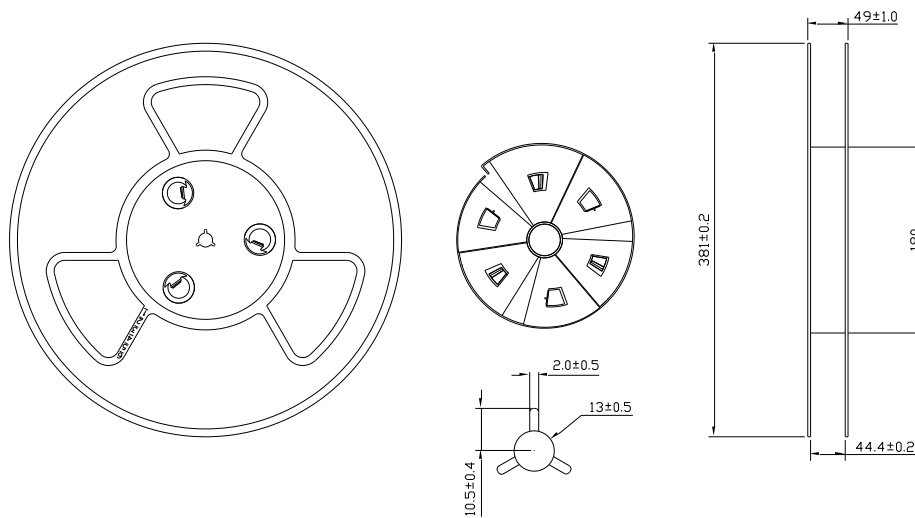
TEMPERATURE CONDITION	HUMIDITY CONDITION
5°C ~ 30°C	Below 60%RH

After opened and not in factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION	STORAGE TIME
5°C ~ 30°C	Below 60%RH	Within 4 weeks (MSL as level 2a)



## REEL DIMENSIONS



## PACKING & LABEL SPECIFICATIONS

