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DUAL DIGIT LED DISPLAY (0.56 Inch)

**LDD535/61-XX**

**DATA SHEET**

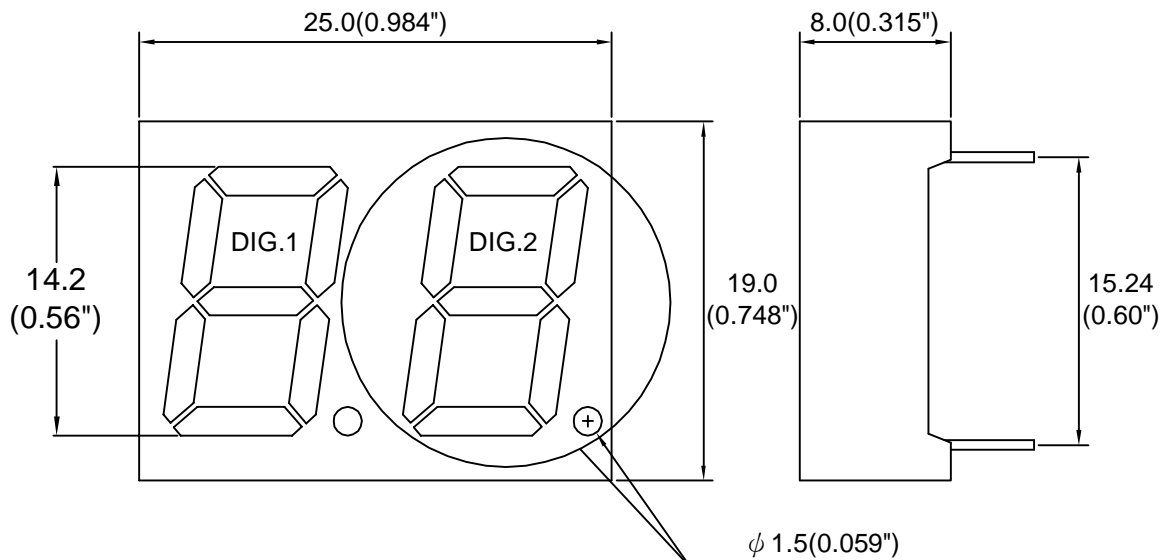
DOC. NO : QW0905-LDD535/61-XX

REV. : A

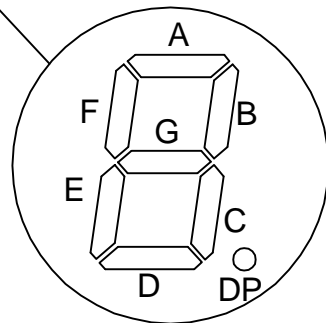
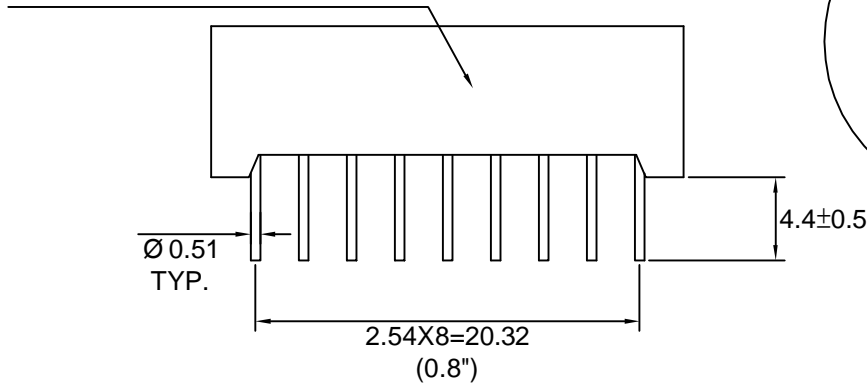
DATE : 31 - Oct. - 2005



### Package Dimensions



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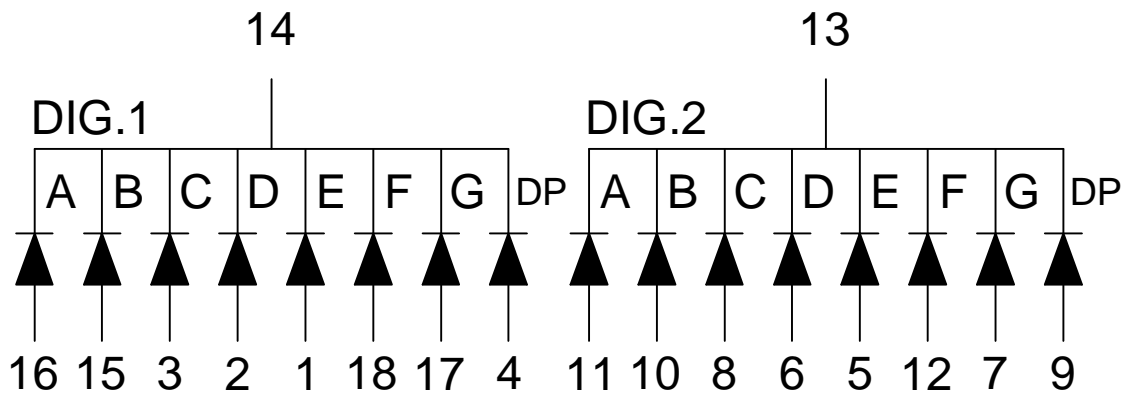
PIN NO.1 →

Note : 1.All dimension are in millimeters and (Inch) tolerance is  $\pm 0.25$ mm unless otherwise noted.  
2.Specifications are subject to change without notice.

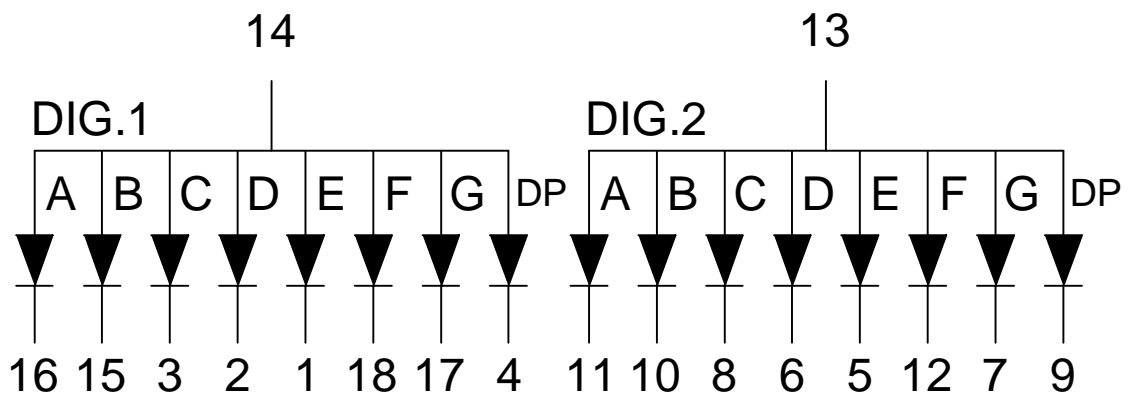


Internal Circuit Diagram

### LDD5351-XX



### LDD5361-XX





### Electrical Connection

PIN NO.1	LDD5351-XX	PIN NO.1	LDD5361-XX
1	Anode E DIG.1	1	Cathode E DIG.1
2	Anode D DIG.1	2	Cathode D DIG.1
3	Anode C DIG.1	3	Cathode C DIG.1
4	Anode DP DIG.1	4	Cathode DP DIG.1
5	Anode E DIG.2	5	Cathode E DIG.2
6	Anode D DIG.2	6	Cathode D DIG.2
7	Anode G DIG.2	7	Cathode G DIG.2
8	Anode C DIG.2	8	Cathode C DIG.2
9	Anode DP DIG.2	9	Cathode DP DIG.2
10	Anode B DIG.2	10	Cathode B DIG.2
11	Anode A DIG.2	11	Cathode A DIG.2
12	Anode F DIG.2	12	Cathode F DIG.2
13	Common Cathode Dig.2	13	Common Anode Dig.2
14	Common Cathode Dig.1	14	Common Anode Dig.1
15	Anode B DIG.1	15	Cathode B DIG.1
16	Anode A DIG.1	16	Cathode A DIG.1
17	Anode G DIG.1	17	Cathode G DIG.1
18	Anode F DIG.1	18	Cathode F DIG.1



Absolute Maximum Ratings at Ta=25 °C

Parameter	Symbol	Ratings	UNIT
		H	
Forward Current Per Chip	IF	15	mA
Peak Forward Current Per Chip (Duty 1/10,0.1ms Pulse Width)	IFP	60	mA
Power Dissipation Per Chip	PD	40	mW
Reverse Current Per Any Chip	Ir	10	μA
Operating Temperature	Topr	-25 ~ +85	°C
Storage Temperature	Tstg	-25 ~ +85	°C
Solder Temperature 1/16 Inch Below Seating Plane For 3 Seconds At 260 °C			

Part Selection And Application Information(Ratings at 25°C)

PART NO	CHIP		common cathode or anode	λ P (nm)	Δ λ (nm)	Electrical					IV-M
	Material	Emitted				Vf(v)			Iv(mcd)		
						Min.	Typ.	Max.	Min.	Typ.	
LDD5351-XX	GaP	Red	Common Cathode	697	90	1.7	2.1	2.6	0.5	0.8	2:1
LDD5361-XX			Common Anode								

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.  
2. The luminous intensity data did not including ±15% testing tolerance.

**Test Condition For Each Parameter**

Parameter	Symbol	Unit	Test Condition
Forward Voltage Per Chip	V <sub>f</sub>	volt	I <sub>f</sub> =20mA
Luminous Intensity Per Chip	I <sub>v</sub>	mcd	I <sub>f</sub> =10mA
Peak Wavelength	$\lambda P$	nm	I <sub>f</sub> =20mA
Spectral Line Half-Width	$\Delta \lambda$	nm	I <sub>f</sub> =20mA
Reverse Current Any Chip	I <sub>r</sub>	$\mu A$	V <sub>r</sub> =5V
Luminous Intensity Matching Ratio	IV-M		



### Typical Electro-Optical Characteristics Curve

H CHIP

Fig.1 Forward current vs. Forward Voltage

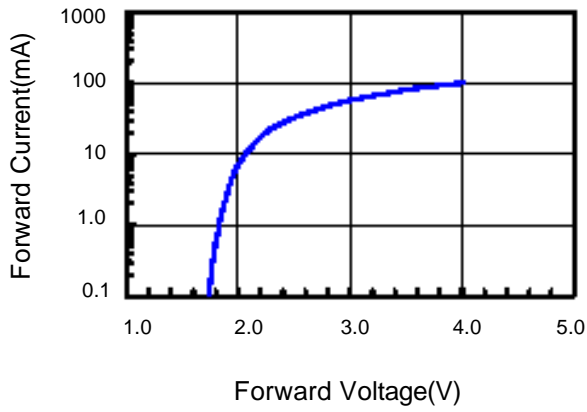


Fig.2 Relative Intensity vs. Forward Current

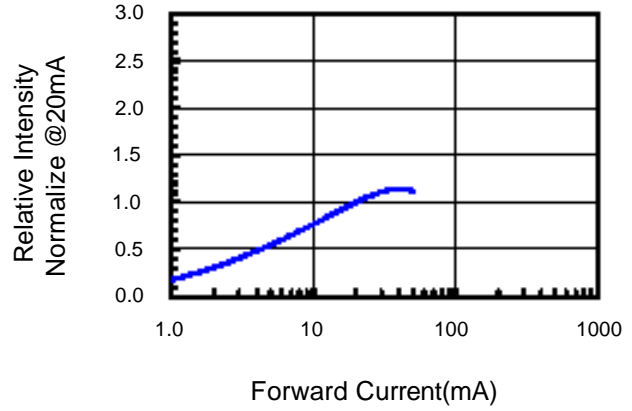


Fig.3 Forward Voltage vs. Temperature

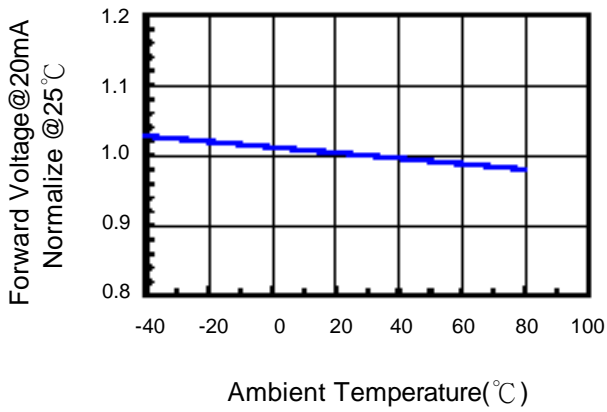


Fig.4 Relative Intensity vs. Temperature

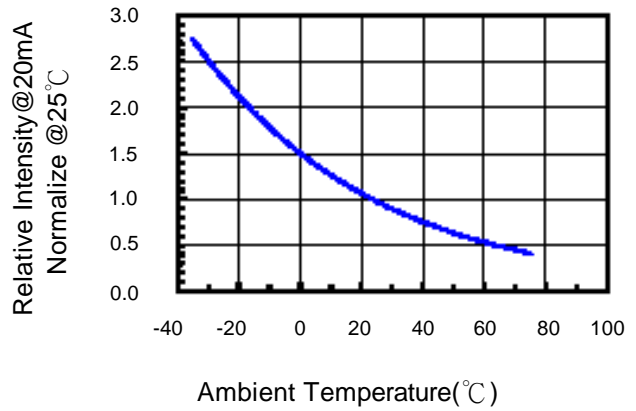
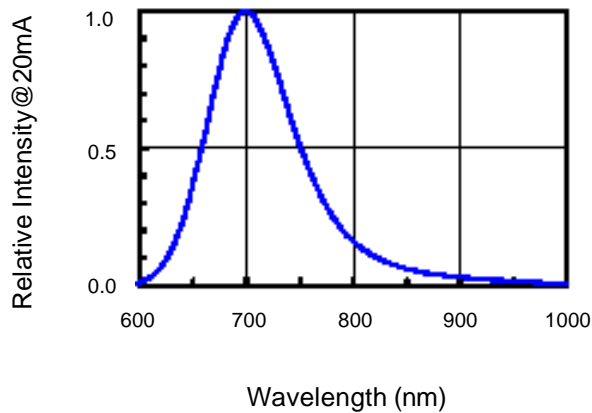


Fig.5 Relative Intensity vs. Wavelength





Reliability Test:

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=10mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of detemining the resisance of a part in electrical and themal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105 °C ±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under ondition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40 °C ±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65 °C ±5°C 2.RH=90 %~95% 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hous.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105 °C ±5°C & -40 °C ±5°C (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260 °C ±5°C 2.Dwell time= 10 ±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230 °C ±5°C 2.Dwell time=5 ±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2