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**DUAL DIGIT LED DISPLAY (0.40 Inch)**



Lead-Free Parts

**LDD425/62-XX/S5-PF**

# **DATA SHEET**

DOC. NO : QW0905-LDD425/62-XX/S5-PF-08

REV. : A

DATE : 03 - Aug. - 2007





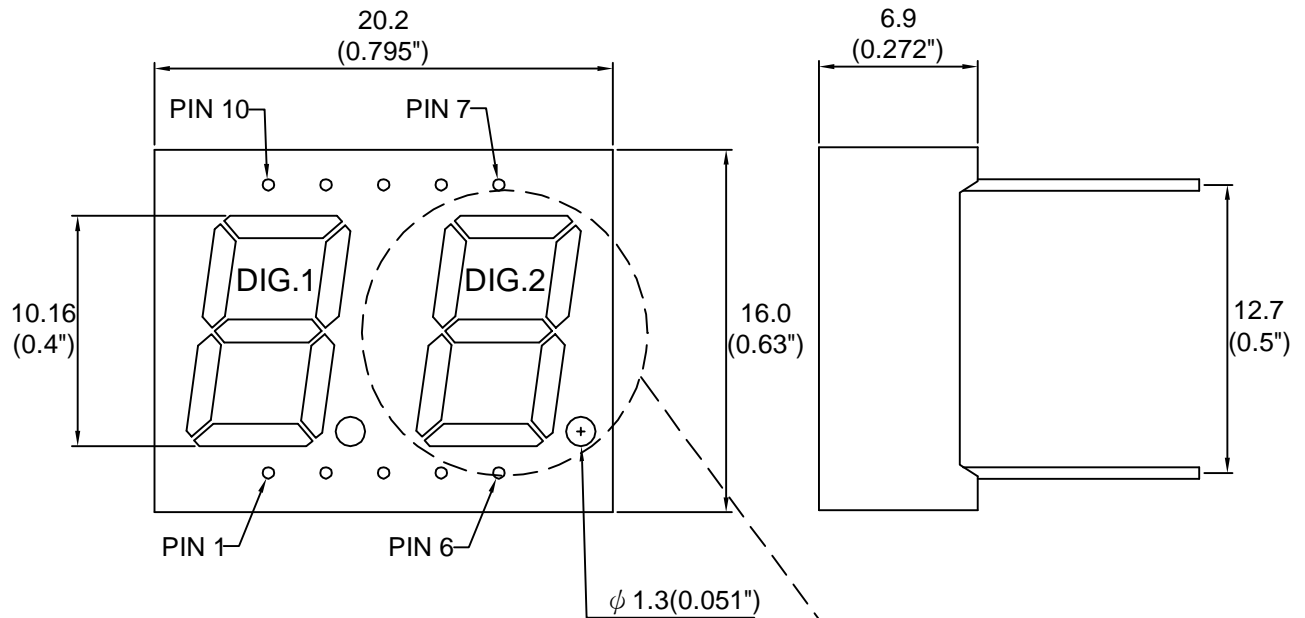
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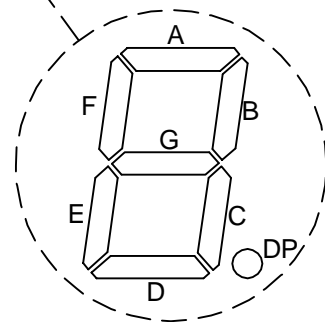
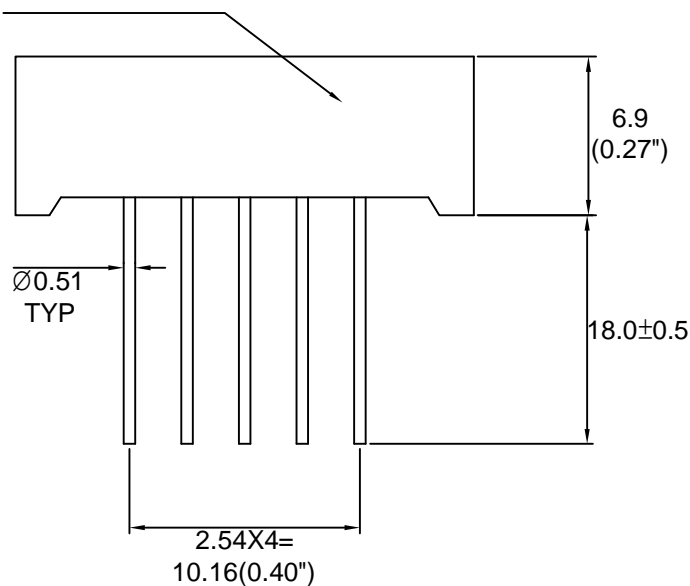
PART NO. LDD425/62-XX/S5-PF

Page 1/8

## Package Dimensions



LDD425/62-XX/S5-PF  
LIGITEK



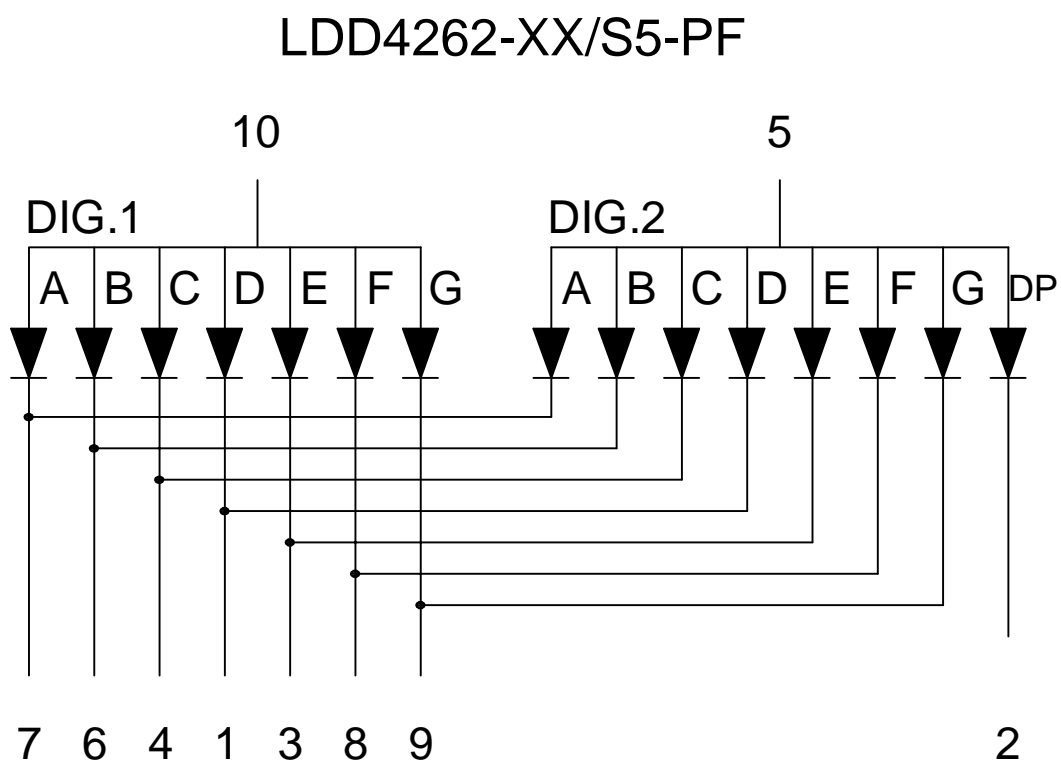
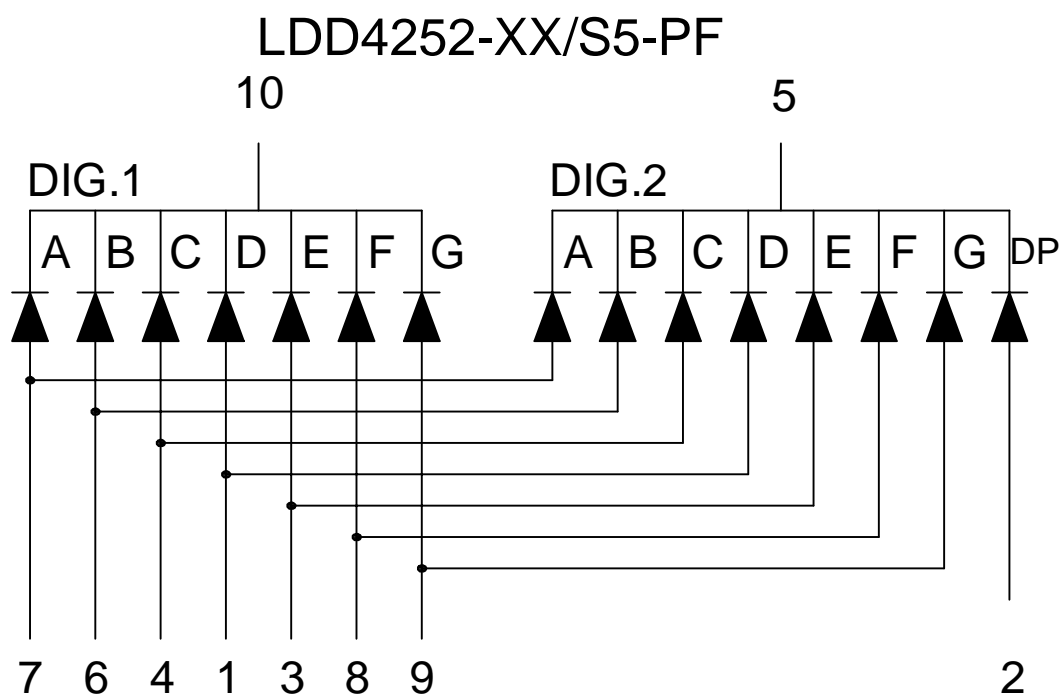
PIN NO.1 →

Note : 1.All dimension are in millimeters and (Inch) tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.  
2.Specifications are subject to change without notice.





Internal Circuit Diagram







## Electrical Connection

PIN NO.	LDD4252-XX/S5-PF	PIN NO.	LDD4262-XX/S5-PF
1	Anode D	1	Cathode D
2	Anode DP	2	Cathode DP
3	Anode E	3	Cathode E
4	Anode C	4	Cathode C
5	Common Cathode Dig.2	5	Common Anode Dig.2
6	Anode B	6	Cathode B
7	Anode A	7	Cathode A
8	Anode F	8	Cathode F
9	Anode G	9	Cathode G
10	Common Cathode Dig.1	10	Common Anode Dig.1





## Absolute Maximum Ratings at Ta=25 °C

Parameter	Symbol	Ratings	UNIT
		Green	
Forward Current Per Chip	IF	15	mA
Peak Forward Current Per Chip (Duty 1/10,0.1ms Pulse Width)	IFP	80	mA
Power Dissipation Per Chip	PD	50	mW
Reverse Current Per Any Chip	Ir	10	$\mu A$
Operating Temperature	T <sub>opr</sub>	-25 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-25 ~ +85	°C

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

PART NO	CHIP		common cathode or anode	$\lambda$ P (nm)	$\Delta \lambda$ (nm)	Electrical				IV-M
	Material	Emitted				Vf(v)		Iv(mcd)		
						Min.	Typ.	Min.	Typ.	
LDD4252-XX/S5-PF	GaP	Green	Common Cathode	565	30	1.7	2.1	1.75	3.05	2:1
LDD4262-XX/S5-PF			Common Anode							

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.



**Test Condition For Each Parameter**

Parameter	Symbol	Unit	Test Condition
Forward Voltage Per Chip	V <sub>f</sub>	volt	I <sub>f</sub> =10mA
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		

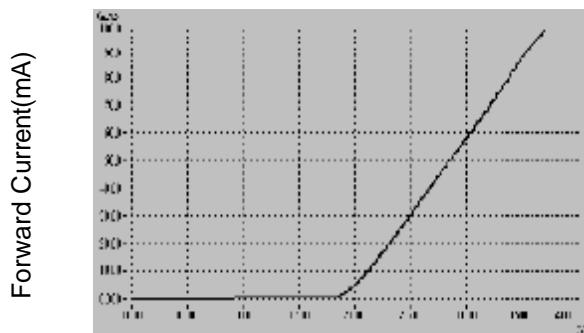




## Typical Electro-Optical Characteristics Curve

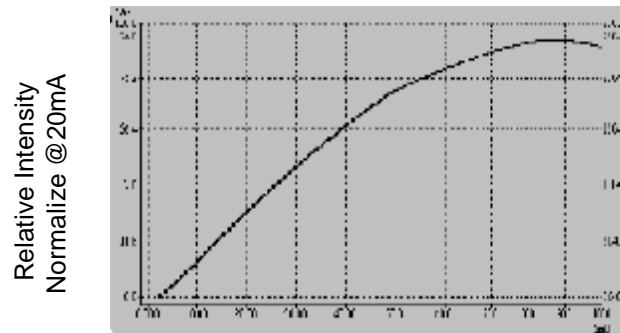
### G CHIP

Fig.1 Forward current vs. Forward Voltage



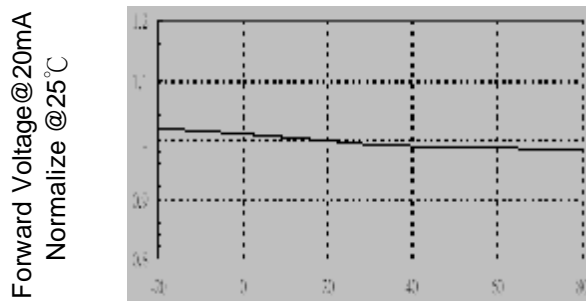
Forward Voltage(V)

Fig.2 Relative Intensity vs. Forward Current



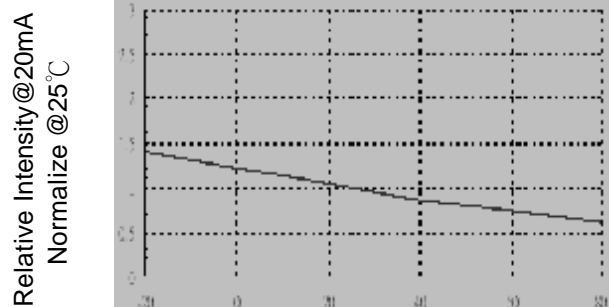
Forward Current(mA)

Fig.3 Forward Voltage vs. Temperature



Ambient Temperature(°C)

Fig.4 Relative Intensity vs. Temperature



Ambient Temperature(°C)

Fig.5 Relative Intensity vs. Wavelength

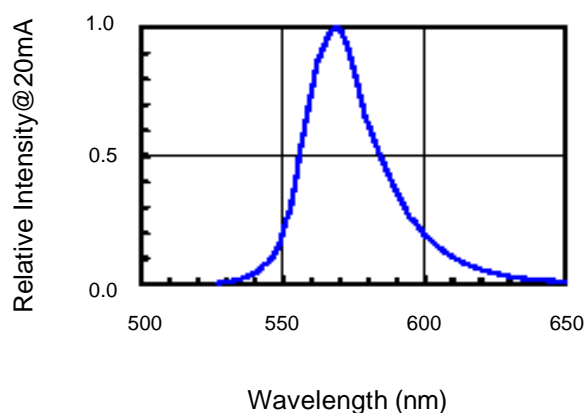


Fig.6 Directive Radiation



**Soldering Condition(Pb-Free)****1.Iron:**

Soldering Iron:30W Max

Temperature 350° C Max

Soldering Time:3 Seconds Max(One time only)

Distance:Solder Temperature 1/16 Inch Below Seating  
Plane For 3 Seconds At 260° C**2.Wave Soldering Profile**

Dip Soldering

Preheat: 120° C Max

Preheat time: 60seconds Max

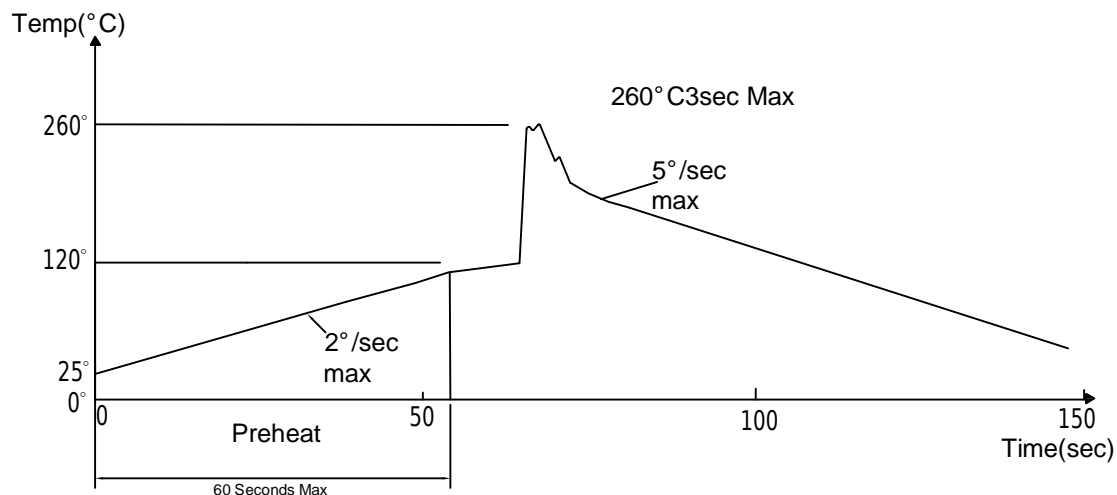
Ramp-up

2° C/sec(max)

Ramp-Down:-5° C/sec(max)

Solder Bath:260° C Max

Dipping Time:3 seconds Max

Distance:Solder Temperature 1/16 Inch Below Seating  
Plane For 3 Seconds At 260° C

Note: 1.Wave solder should not be made more than one time.

2.You can just only select one of the soldering conditions as above.



**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 determining the resistance of a part in electrical and thermal 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 condition 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 hours.	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