



LIGITEK

LIGITEK ELECTRONICS CO.,LTD.
Property of Ligitek Only

FOUR DIGIT LED DISPLAY (0.39 Inch)

LFD4K5/6SBKS-XX/F2

DATA SHEET

DOC. NO : QW0905-LFD4K5/6SBKS-XX/F2

REV. : A

DATE : 31 - May.- 2005



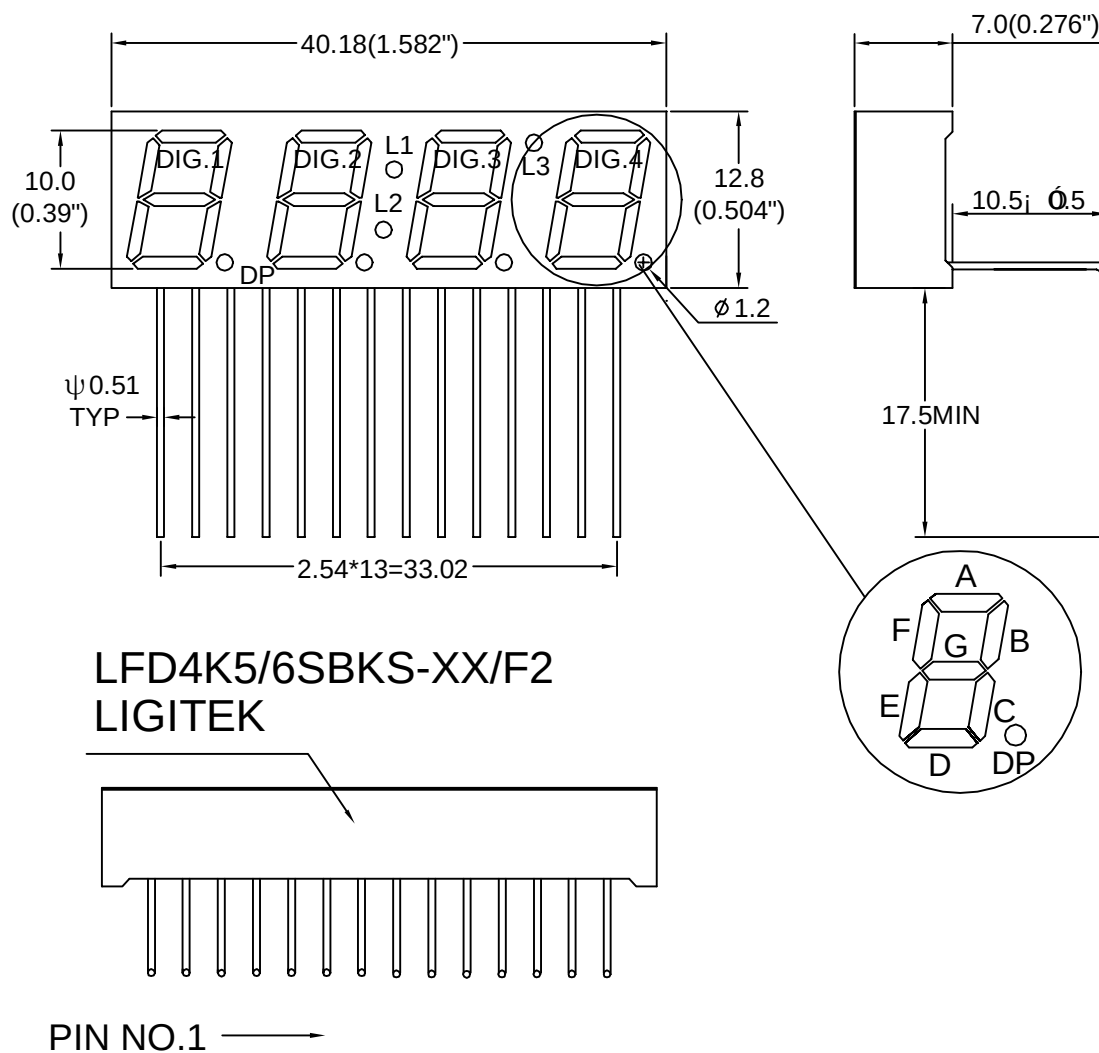
LIGITEK

LIGITEK ELECTRONICS CO.,LTD.
Property of Ligitek Only

PART NO. LFD4K5/6SBKS-XX/F2

Page 1/7

Package Dimensions

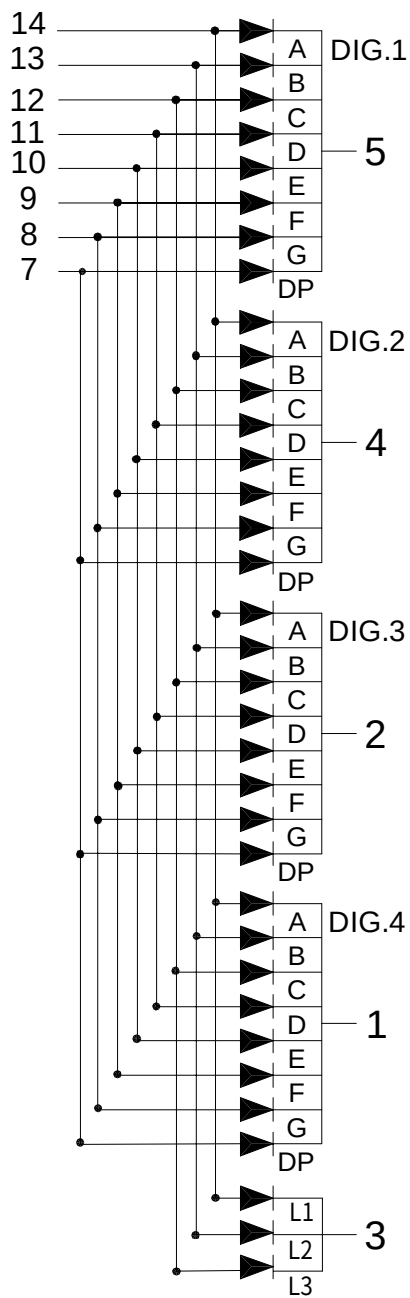


Note : 1.All dimension are in millimeters and (Inch) tolerance is ± 0.25 mm unless otherwise noted.
2.Specifications are subject to change without notice.

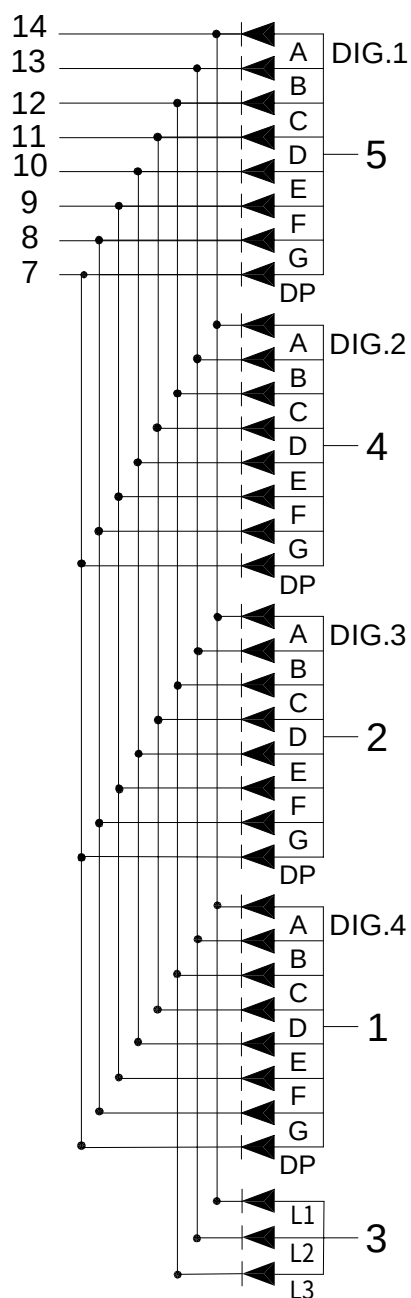


Internal Circuit Diagram

LFD4K5SBKS-XX/F2



LFD4K6SBKS-XX/F2





Electrical Connection

PIN NO.1	LFD4K5SBKS-XX/F2	PIN NO.1	LFD4K6SBKS-XX/F2
1	Common Cathode Dig.4	1	Common Anode Dig.4
2	Common Cathode Dig.3	2	Common Anode Dig.3
3	Catgide L1,L2,L3	3	Anode L1,L2,L3
4	Common Cathode Dig.2	4	Common Anode Dig.2
5	Common Cathode Dig.1	5	Common Anode Dig.1
6	NO CONNECT	6	NO CONNECT
7	Anode DP	7	Cathode DP
8	Anode G	8	Cathode G
9	Anode F	9	Cathode F
10	Anode E	10	Cathode E
11	Anode D	11	Cathode D
12	Anode C,L3	12	Cathode C,L3
13	Anode B,L2	13	Cathode B,L2
14	Anode A,L1	14	Cathode A,L1



Absolute Maximum Ratings at Ta=25 °C

Parameter	Symbol	Ratings	UNIT
		SBKS	
Forward Current Per Chip	IF	30	mA
Peak Forward Current Per Chip (Duty 1/10,0.1ms Pulse Width)	IFP	100	mA
Power Dissipation Per Chip	PD	120	mW
Reverse Current Per Any Chip	Ir	50	μA
Electrostatic Discharge	ESD	500	V
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 D (nm)	$\Delta \lambda$ (nm)	Electrical				IV-M
	Material	Emitted				Vf(v)		Iv(mcd)		
						Typ.	Max.	Min.	Typ.	
LFD4K5SBKS-XX/F2	InGaN/SiC	Blue	Common Anode	475	26	3.5	4.2	5.0	8.5	2:1
LFD4K6SBKS-XX/F2			Common Cathode							

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 _f	volt	I _f =20mA
Luminous Intensity Per Chip	I _v	mcd	I _f =10mA
Dominant Wavelength	λ_D	nm	I _f =20mA
Spectral Line Half-Width	$\Delta\lambda$	nm	I _f =20mA
Reverse Current Any Chip	I _r	μA	V _r =5V
Luminous Intensity Matching Ratio	IV-M		

Typical Electro-Optical Characteristics Curve

SBK-S CHIP

Fig.1 Forward current vs. Forward Voltage

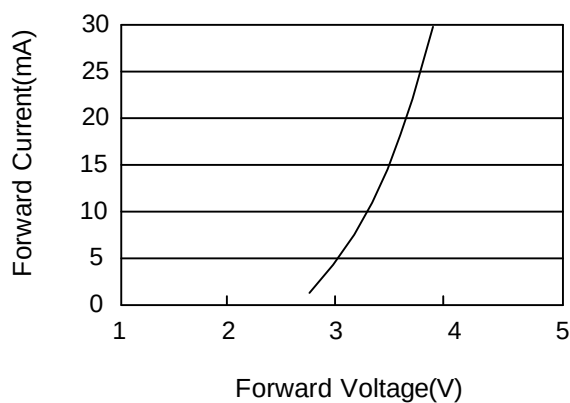


Fig.2 Relative Intensity vs. Forward Current

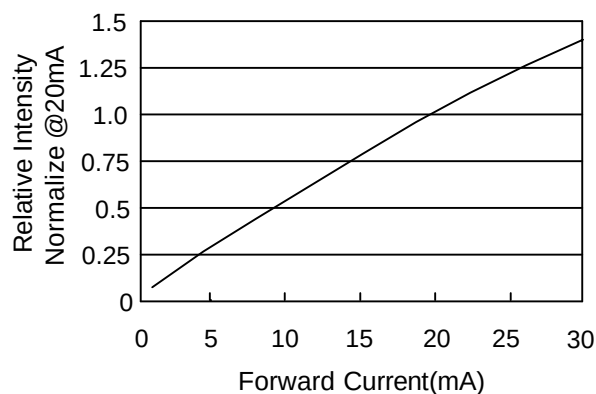


Fig.3 Forward Current vs. Temperature

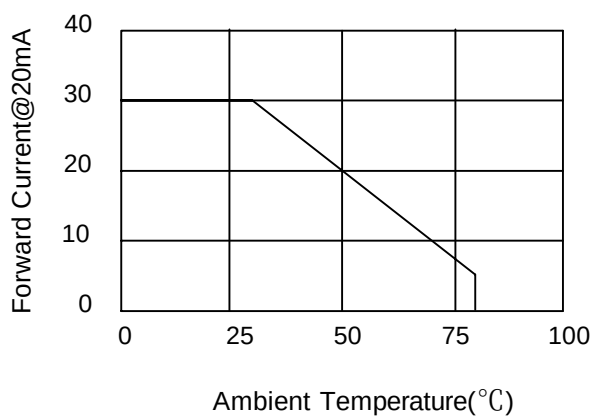
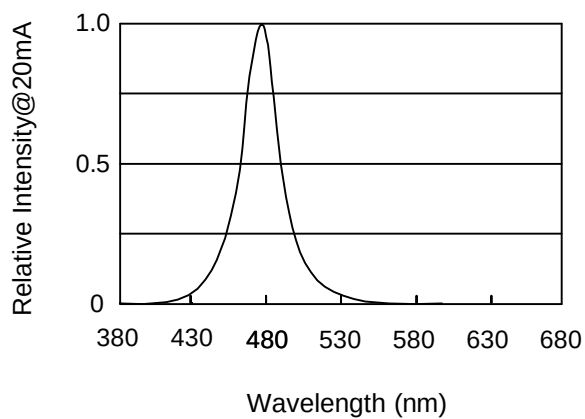


Fig.4 Relative Intensity vs. Wavelength



**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 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