



WENRUN OPTOELECTRONIC CO., LTD.

Technical Data Sheet

LED DISPLAYS

• Customer:

Technical Data Sheet

PN: [LFD027□□□-10-□□□-□□□](#)

For: IF=20mA



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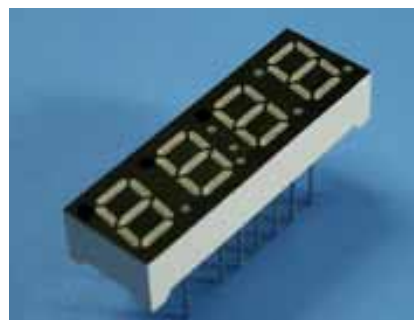
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Features:

- High efficiency, low power consumption.
- Extremely low current.
- Luminous evenly distributed on each segment.
- Low development cost.



Descriptions:

- Industrial standard size.
- These display provide excellent reliability in bright ambient light.
- These devices are made with white segments and black surface.

Applications:

- Audio equipment or instrument panels.
- General use for digital indicators.
- Multimedia product.

Selection guide:

Part No.		Chip		Lens Color
Anode	Cathode	Material	Emitting Color	
LFD027 □ BSR-10- □ □ □ - □ □ □	LFD027 □ ASR-10- □ □ □ - □ □ □	GaAlAs	Super Red	White Diffused
LFD027 □ BG-10- □ □ □ - □ □ □	LFD027 □ AG-10- □ □ □ - □ □ □	GaP	Green	



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Absolute Maximum Rating (Ta=25)

Parameter	Symbol	Super Red	Green	Unit
Power Dissipation/Segment	P _d	60	60	mW
Peak Forward Current /Segment (Duty 1/10@ 1KHz)	I _{FP}	70	70	mA
Continuous Forward Current /Segment	I _F	20	20	mA
Recommend use current /Segment	I _F	5~10	5~10	mA
Reverse Voltage /Segment	V _R	5	5	V
Operating Temperature Range	Topr	-40~ +85		
Storage Temperature Range	Tstg	-40 ~ +85		
Solder Temperature	Tsol	260 ± 5		

- Notes :** 1、 This is the limit current . It is not allowed to use when the product work continuously.
2、 It is recommended that the product is driven by TTL,CMOS.
3、 Soldering time ≤ 5 seconds.
4、 I_{FP} condition: pulse width ≤ 1ms ,duty cycle ≤ 1/10

Electrical Optical Characteristics (Ta=25)

Parameter	Symbol	Super Red		Green		Unit	Test Condition
		Typ.	Max.	Typ.	Max.		
Luminous Intensity /Segment	I _V	3.4	--	1.7	--	mcd	I _F =10mA
Forward Voltage /Segment	V _F	1.85	2.3	2.2	2.5	V	I _F =20mA
Reverse Current /Segment	I _R	--	50	--	50	uA	V _R =5V
Dominant Wavelength	λ _d	645	--	565	--	nm	I _F =20mA
Spectral Line Half Width	Δ λ	20	--	20	--	nm	I _F =20mA

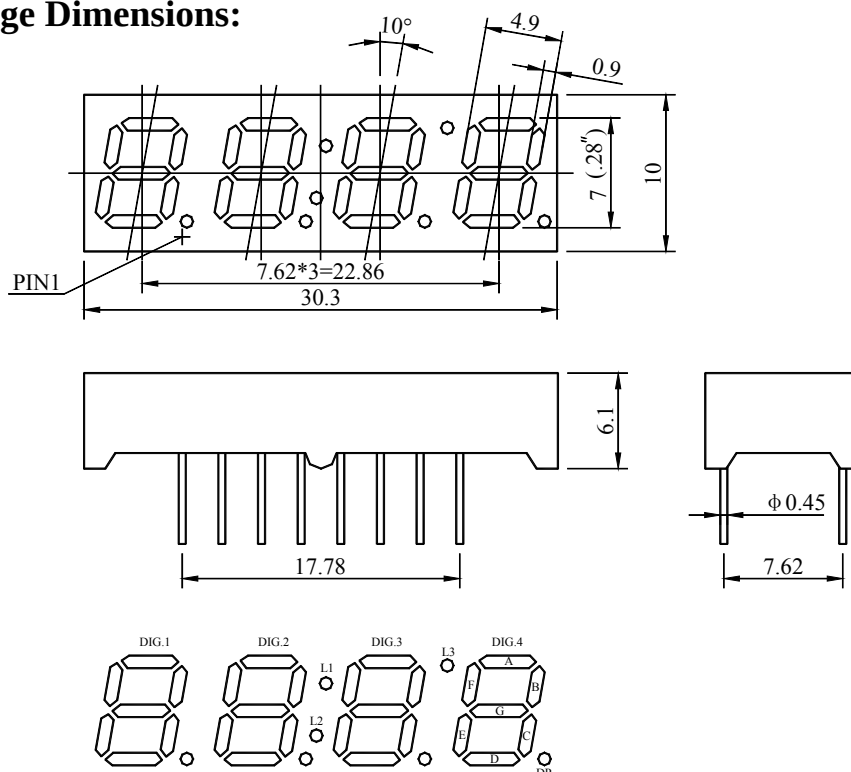


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Package Dimensions:

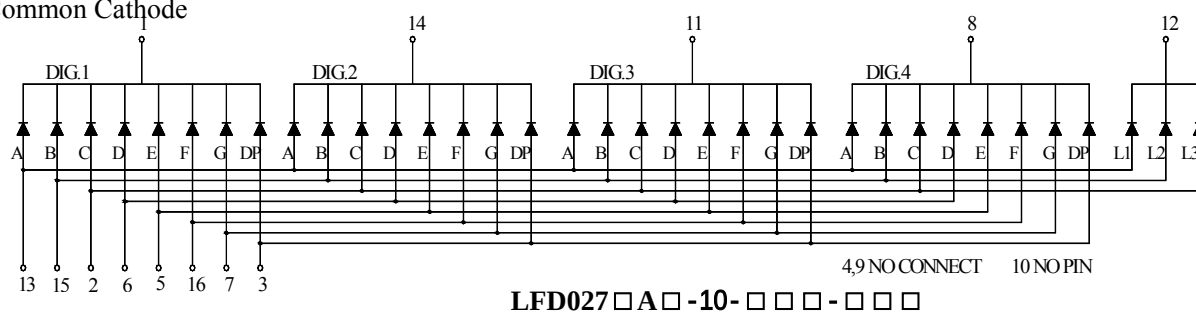


NOTES :

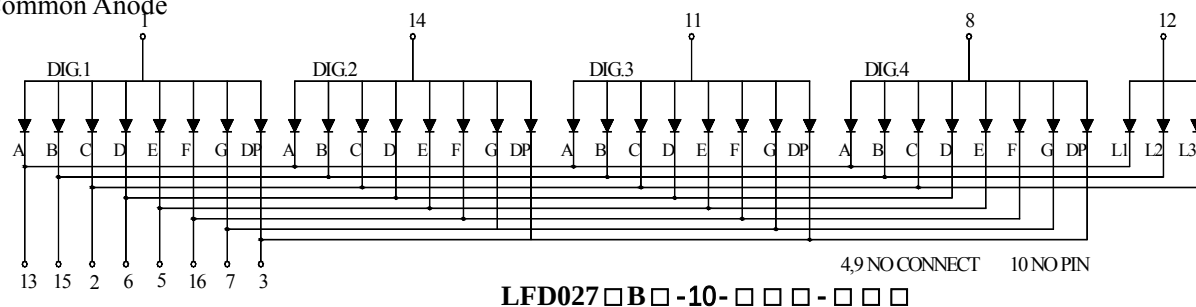
- All dimensions are in millimetres (mm), Tolerance is $\pm 0.25\text{mm}$ unless otherwise noted.
- Specifications are subject to change without notice.

Internal Circuit:

Common Cathode



Common Anode





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Reliability

(1) Test Items and Conditions

NO	Test Item	Test Conditions	Sample	Ac/ Re
1	Temperature Cycle	$-40\pm5^{\circ}\text{C}\rightarrow25\pm5^{\circ}\text{C}\rightarrow100\pm5^{\circ}\text{C}\rightarrow25\pm5^{\circ}\text{C}$ (30min, 5min, 30min, 5min) 20 Cycles	20	0/1
2	High Temperature Storage	Ta: $100\pm5^{\circ}\text{C}$ Test time=1000HRS(-24HRS,+72HRS)	20	0/1
3	High Temperature And High Humidity Working	Ta: $85\pm5^{\circ}\text{C}$, RH: $85\pm5\%$, IF=10mA/seg Test time=500HRS(-24HRS,+72HRS)	20	0/1
4	Low Temperature Storage	Ta: $-40\pm5^{\circ}\text{C}$ Test time=1000HRS(-24HRS,+72HRS)	20	0/1
5	Operating Life Test	Connect with a power IF=10mA/seg Ta=Under room temperature Test time=1000HRS(-24HRS,+72HRS)	20	0/1
6	Solder Resistance	T.Sol= $260\pm5^{\circ}\text{C}$ one time Dwell Time= 5 ± 1 Secs, distance 3mm	20	0/1
7	Thermal Shock	$-40\pm5^{\circ}\text{C}\rightarrow100\pm5^{\circ}\text{C}$ (15min, 15min) 20Cycles	20	0/1

(2)Criteria of judging the damage

Item	Symbol	Test condition	Criteria for judgement	
			Min.	Max.
Forward voltage	VF	IF=10mA/Seg	/	U.S.L*1.1
Reverse current	IR	VR=5V	/	15uA
Luminous intensity	IV	IF=10mA/Seg	L.S.L*0.7	/
Wave length	λ D/ λ P	IF=10mA/Seg	/	U.S.L $\pm$ 2nm
Appearance	/	View check	No mechanical damage	

* U.S.L: Upper standard level

L.S.L: Lower standard level



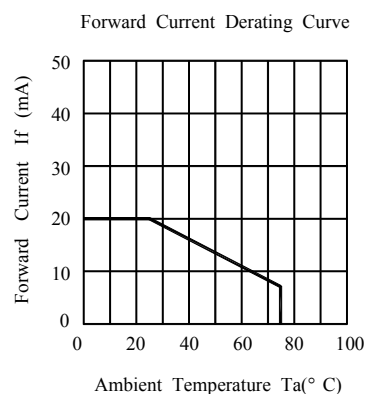
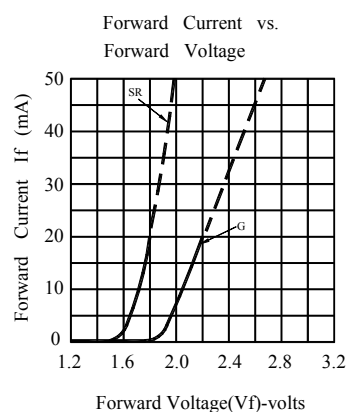
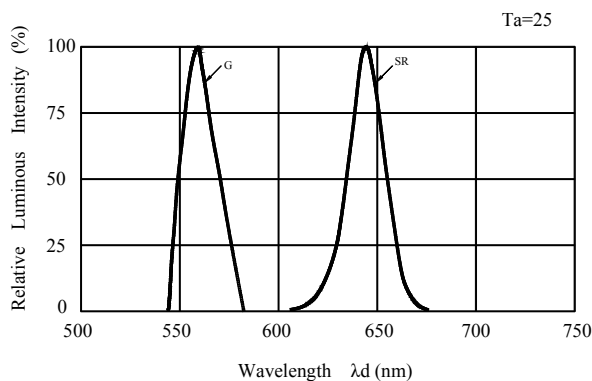
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Typical Electro-Optical Characteristics Curves

Spectrum Distribution



Notes:

- 1、Above specification may be changed without notice. We will reserve authority on material change for above specification.
- 2、When use this product, please observe the absolute maximum ratings and the instructions for the specification sheets. We assume no responsibility for any damage resulting from using of the product which does not comply with the instructions included in the specification sheets.