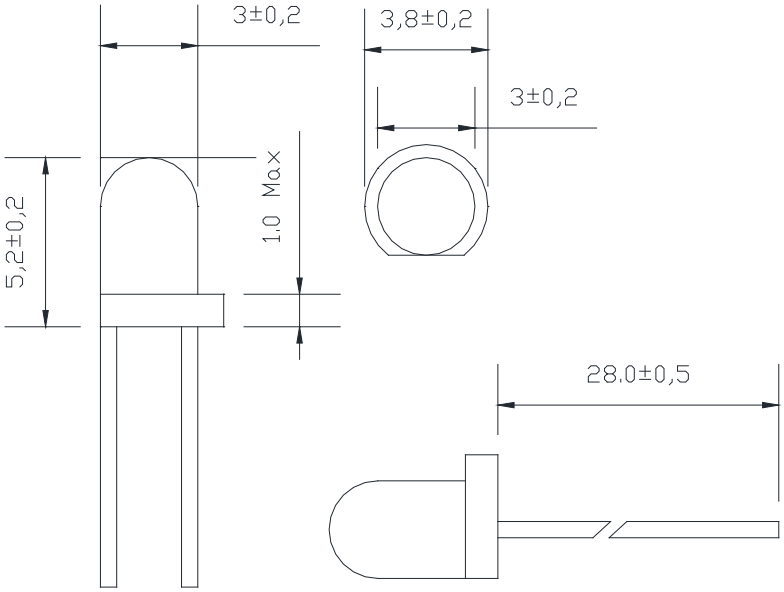
Features

· 3mm DIA LED Lamp
· Low Power Consumption
· High Efficiency
· Various Colors and Viewing Angle
· Long Solid State Reliability
· Package: 1000pcs/Packing

Applications

· Indicator

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm(.01″) unless otherwise noted.
3. Protruded Resin under flange is 1.0mm(0.04″) max.
4. Specifications are subject to change without notice.

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Selection Guide

Part No	Lens Type	Dice	Emitted Color
FDL-3521R-TRDYH-D28	Red Diffused	GaAsP	Red

Electrical / Optical Characteristics At Ta=25 ℃

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
Iv	Luminous Intensity	9.0	45.0		mcd	IF=20mA
2θ1/2	Viewing Angle		30		deg	IF=20mA
λ Peak	Peak Emission Wavelength		631		nm	IF=20mA
λ d	Dominant Wavelength	617	635	660	nm	IF=20mA
△λ	Spectral Line Half-Width		20		nm	IF=20mA
VF	Forward Voltage	1.6	2.0	2.5	V	IF=20mA
IR	Reverse Current		100		uA	VR 5V

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 optical centerline value

Absolute Maximum Ratings At Ta=25℃

Parameter	Red	Unit
Power Dissipation	80	mW
Peak Forward Current[1]	150	mA
Continuous Forward Current	25	mA
Reverse Voltage	5	V
Operating Temperature Range	-40℃ to + 85℃	
Storage Temperature Range	-40℃ to + 85℃	
Soldering Condition	260℃ For 5 Seconds	

Note:

1. 1/10DutyCycle, 0.1msPulseWidth

Electrical Optical Characteristics Curves At Ta=25 ℃

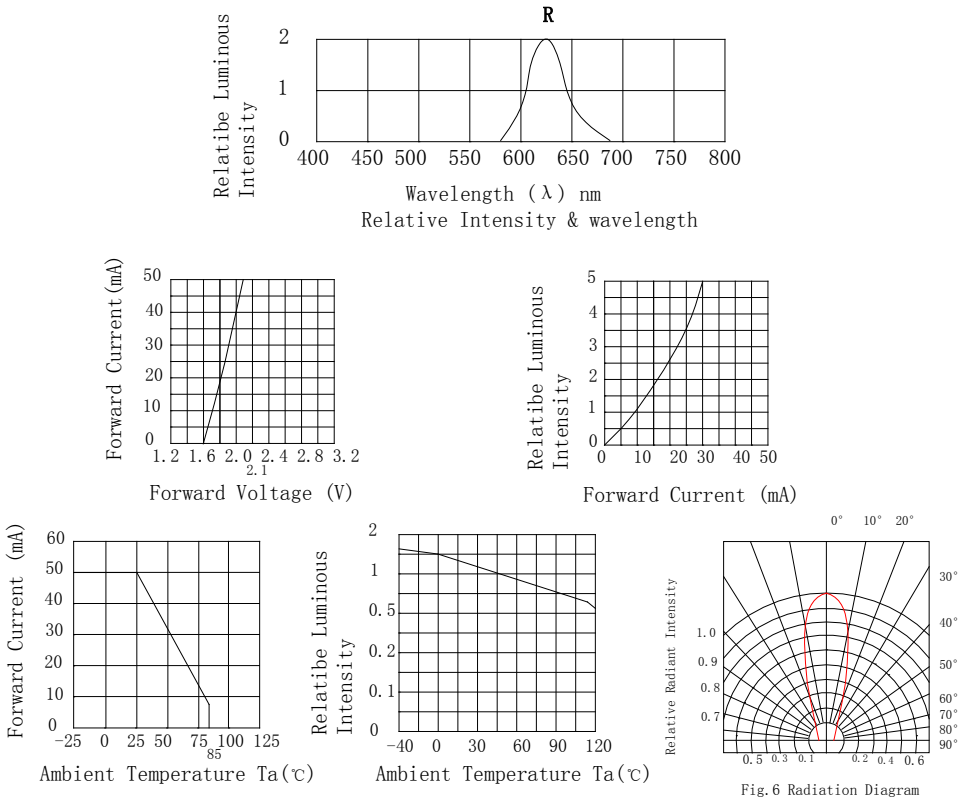
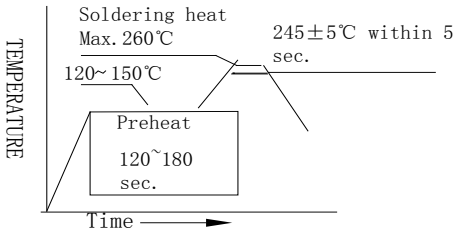


Fig.6 Radiation Diagram

Reflow Soldering Instructions



Notes:

1. The LEDs should be used within a year.
2. The LEDs should be kept in 5~30℃ and 60% RH for less.
3. The LEDs should be used within 24 hours, or else should be kept a 5~30℃ and 30% RH or less. And LEDs should be used within 7 days after opening the package.

Reliability Test Items Conditions

Classification	Test Item	Test Conditions	Test hours	Result
Endurance Test	Operation Life	Connect with a power if=20mA Ta=Under room temperature	1000Hrs	0/20
	High Temperature High Humidity	Ta=＋65℃±5℃ RH=90%-95%	240Hrs	0/20
	High Temperature Storage	High Ta=＋85℃±5℃	1000Hrs	0/20
	Low Temperature Storage	Low Ta=-35℃±5℃ Test time=1000hrs	1000Hrs	0/20
Environmental Test	Temperature Cycling	-45℃～+105℃ 15min 5min 15min	300 Cycles	0/20
	Thermal Shock	-35℃～±5℃～+85℃～±5℃ 5min 10sec 5min	300 Cycles	0/20
	Solder Resistance	Preheating: 120℃-150℃,within 2 minutes. Operation heating : 260℃(Max.),within5 seconds(Max.)	5Cycles	0/20

Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	V_F(V)	I_F=20mA	Over U×1.2
Reverse current	I_R(μA)	V_R=5V	Over U×2
Luminous intensity	Iv(mcd)	I_F=20mA	Below S×0.5

Note: 1.U means the upper limit of specified characteristics. S means initial value.
2.Meansurment shall be taken between 2 hours after the test pieces have been returned to normal ambient conditions after completion of each test.