3MM Round LED
Technical Data Sheet

■ Features

- ●Choice of various color & view angles
- ●Low power consumption
- ●Reliable & Rugged
- ●Long life-Solid State Reliability
- ●High Efficiency
- ●RoHS Complaint

■ Description

- ● 3mm round dip LED in Red **diffusion** lens
- ● 25-45- mcd at 40 degree

■ Application

- •Infrared remote control units with high power requirements
- • Free air transmission systems
- • Infrared source for optical counters and card readers
- • IR source for smoke detectors
- • Smoke-automatic fire detectors

■ Product Summary

Part No.	Chip Material	Lens color
GHR703A-1E	AlGaInP	Red **diffusion**

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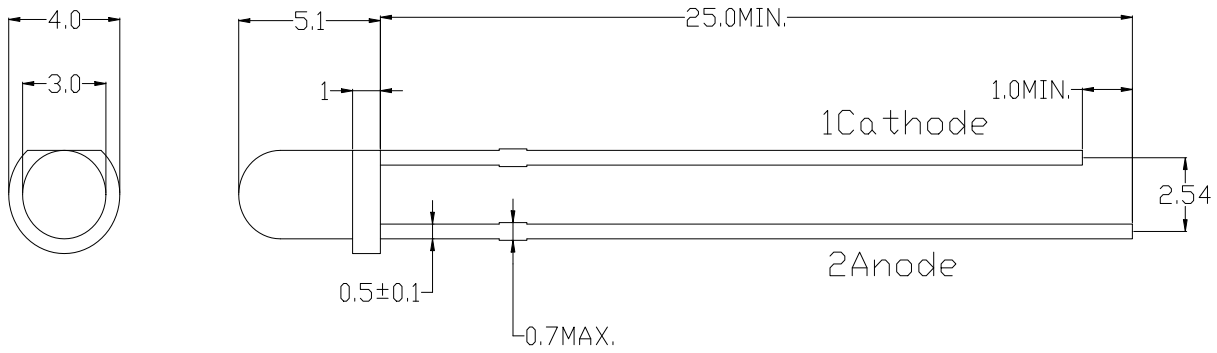
Package Dimension

Notes:

1. All dimensions are in millimeters
2. Tolerance is ±0.2mm unless otherwise noted.



●Electrical Specification

Maximum Ratings(Ta=25℃)

Parameter	Symbol	Data		Unit	Remarks
		Min.	Max.		
Operating Temperature Range	Topr	-30	+85	℃	
Forward Current	IF		25	mA	
Pulse Forward	I_{FSN}		50	mA	
Reverse Voltage	VR		5	V	
Power dissipation	Pm		70	mW	
Storage Temperature Range	Tstg	-30	+100	℃	
Soldering Temperature	Tsd		+260	℃	≤3sec.

Electrical Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F=10 mA	1.6	1.8	2.3	V
Reverse Current	I_R	V_R=5V	0	0	10	μA
Dominant Wavelength	λ d	IF=10mA	635	645	655	nm
Spectral Line Half-Width	△ λ	IF=10mA		20		nm
Radiation Angle of Half Intensity	$2\theta_{1/2}$	I_F=10 mA	---	40	---	deg
Luminous Intensity	I_V	I_F=10 mA	25	45	---	mcd

●Reliability Test Items and Conditions (Per Chip):

（1）Test Items and Results:

No.	Test Item	Test Hours/Cycles	Test Conditions	Sample Size	Ac/Re
1	Resistance to Soldering Heat	2 Cycles	Tsld=260±5℃, Min. 5sec	25pcs	0/1
2	Thermal Shock	100 Cycles	H: +100℃ 5min ∫ 10 sec L: -10℃ 5min	25pcs	0/1
3	Temperature Cycle	100 Cycles	H: +100℃ 15min ∫5min L: -30℃ 15min	25pcs	0/1
4	High Temperature Storage	340Hrs.	Temp: 100℃	25pcs	0/1
5	DC Operating Life	340Hrs.	IF=20mA	25pcs	0/1
6	Low Temperature Storage	340Hrs.	Temp: -30℃	25pcs	0/1
7	High Temperature/ High Humidity	340Hrs.	85℃/85%RH	25pcs	0/1

（2）Criteria for Judging the Damage:

Item	Symbol	Test Conditions	Criteria for Judgment	
			Min.	Max.
Forward Voltage	VF	IF=20mA		F.V.*)×1.1
Reverse Current	IR	VR=5V		F.V.*)×2.0
Luminous Intensity	IV	IF=20mA	F.V.*)×0.7	

***Noted: F.V.: First Value**

Please read the following notes before using the product:

1. Over-current-proof

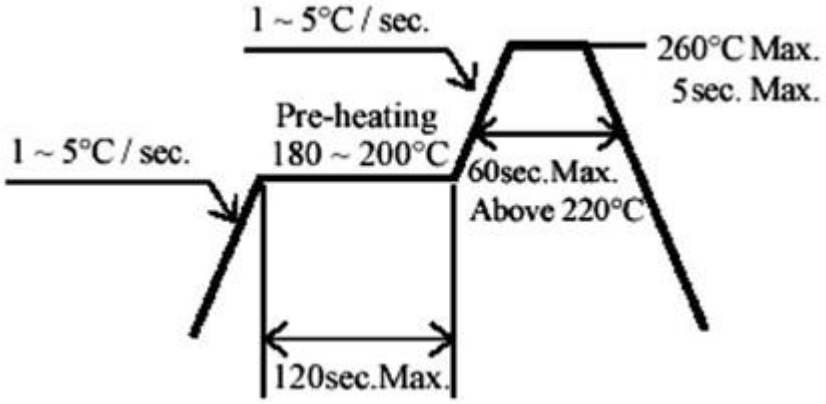
Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.
2.2 Before opening the package, the LEDs should be kept at 30℃ or less and 90%RH or less.
2.3 The LEDs should be used within a year.
2.4 After opening the package, the LEDs should be kept at 30℃ or less and 70%RH or less.
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.
2.6 If the moisture adsorbent material (silica gel) has fabled away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 60±5℃ for 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile.



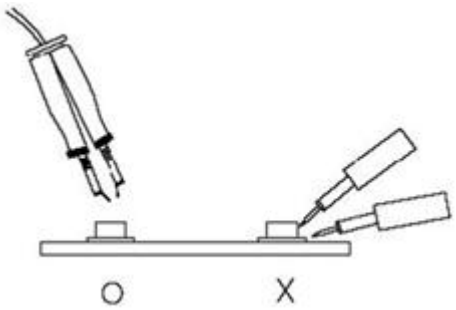
3.2 Reflow soldering should not be done more than two times.
3.3 When soldering, do not put stress on the LEDs during heating.
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 260℃for 5 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



6. Caution in ESD

Static Electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.