



Product Outline:

QLIR01BYGM is an infrared LED, package dimension is Ø5mm lamp ,860nm emitting diode in AlGaAs/Si with high speed and high radiant power.

Features:

- Infrared 860nm led
- With Black resign
- Infrared 5mm round lamp
- 20° Viewing angle ($\pm 10^\circ$)
- RoHS compliant
- Custom Bin available upon special request

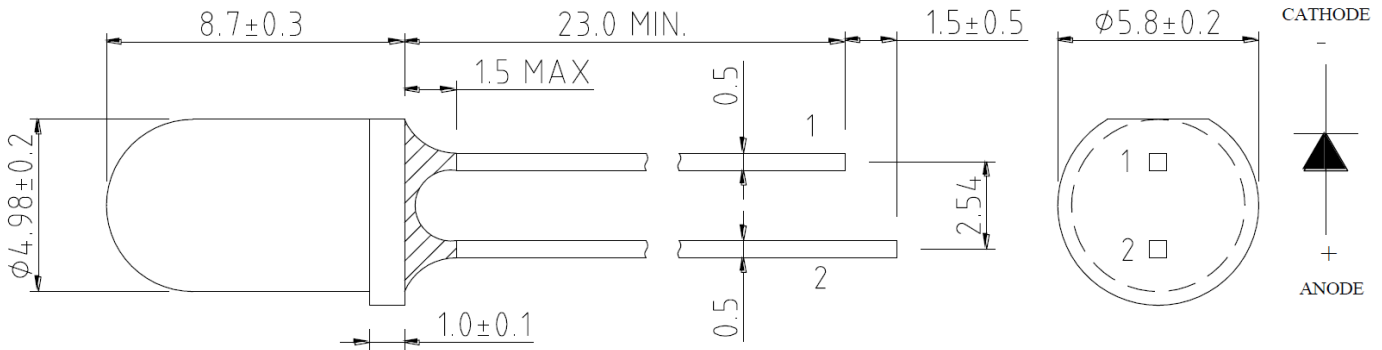
Application:

- Electronic signs and electronics board
- General purpose indicator application
- Smoke-automatic fire detectors
- Lighting application

Compliance and Certification:



■ Mechanical Property: (Dimension)



SING: 1. CATHODE
2. ANODE

Tolerance is ± 0.25 mm unless otherwise specified

■ ELEMENT APPEARANCE

Model No.	Material	Lighting Color	Resin Color
QLIR01BYGM	AlGaAs	Non-Visible	Black

■ ABSOLUTE MAXIMUM RATINGS AT $T_a=25^\circ\text{C}$

Characteristic	Symbol	Rating	Unit
Forward direct current	IFM	200	mA
$T_a=50^\circ\text{C}$, pulsed operation $t_p = 34\mu\text{s}$ at $D= 1/100$	I_{FSM}	1	A
Reverse voltage	VRM	5	V
Operating temperature	T_{opr}	-40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +100	$^\circ\text{C}$
Power dissipation	P_d	380	mW



■ ELECTRO-OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Radiant Intensity	Ie	IF=100mA	250			mW/sr
Forward Voltage	Vf	IF=100mA		1.5	2.0	V
Reverse current	Ir	Vr=5V			10	μA
Peak emission wavelength	λp	IF=100mA		860		nm
Spectral band width @ 50%	▲λ	IF=100mA		40		nm
Rise time / Fall time	Tr/Tf	IF=100mA		25/15		ns
Viewing angle	2θ 1/2	IF=100mA		20		Deg

*Radiant Intensity Measurement allowance is ±15%

** Forward voltage Measurement allowance is ±0.05V

*** Peak emission wavelength Measurement allowance is ±1nm

Dominate Wavelength (nm) Bin:

Wd (nm)			
Color	Code name	Min.	Max.
IR	R850	840	870

Measurement tolerance is +/- 2nm

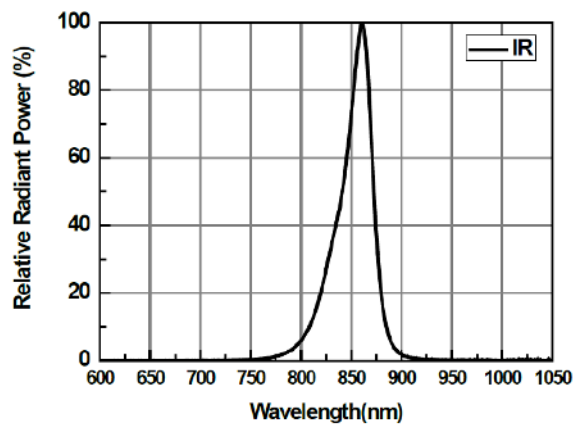
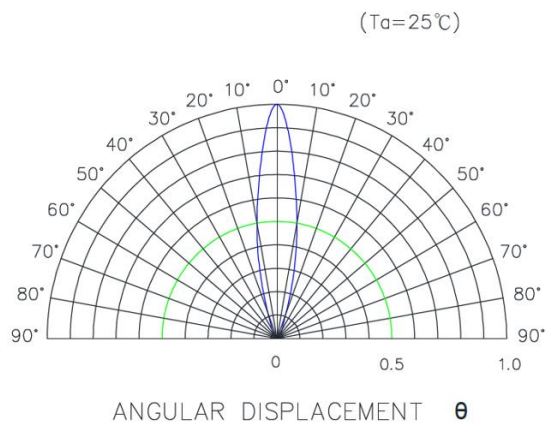
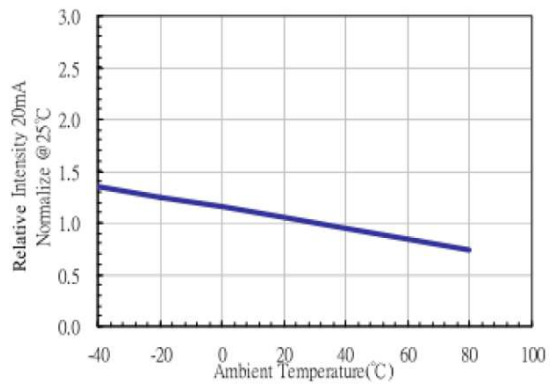
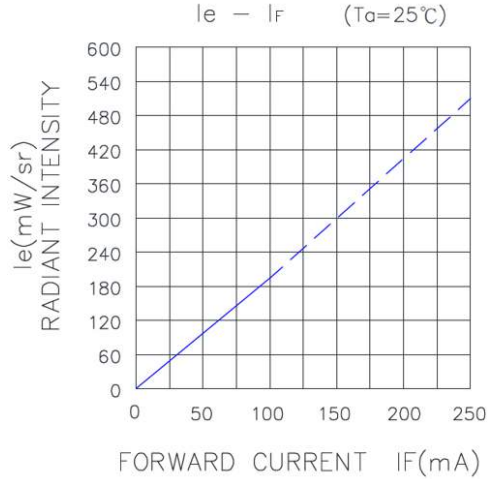
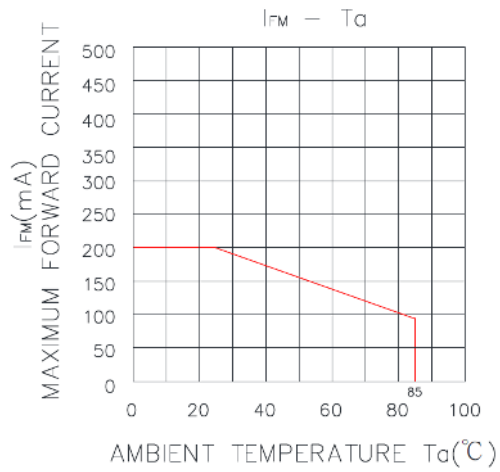
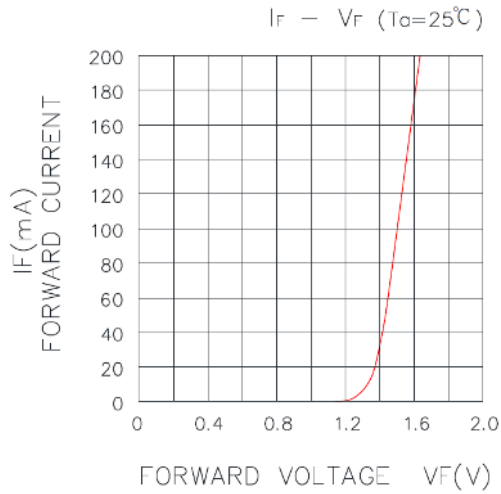
Radiometric power Bin:

Rank @100mA (mW/sr)			
Color	Code name	Low	High
IR	2	250	325
	3	325	430
	4	430	580
	5	580	750

luminous flux tolerance is ± 7%



■ Characteristic Curves



■ Reliability test:

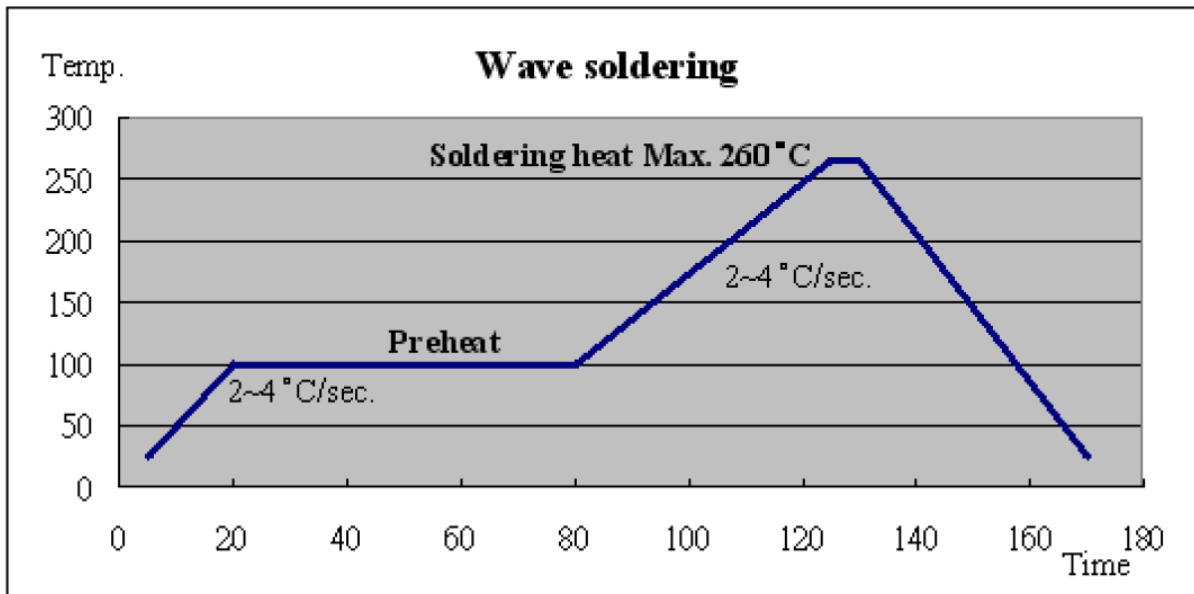
No	Item	Condition	Time/Cycle	Criteria	Ac / Re	Sample size
1	Soldering Heat Test	260°C	5 sec	Open / Short	0 / 1	60 pcs
2	Thermal Shock	0 (5min) °C ~100 (5min) °C	20 cycle	Open / Short	0 / 1	60 pcs
3	High Temp. Storage	100°C	1000 Hrs	Open / Short	0 / 1	60 pcs
4	Low Temp. Storage	-40°C	1000 Hrs	Open / Short	0 / 1	60 pcs
5	Temperature Cycle Test	-40 ~85 °C	100 Cycles , 200Hrs	Open / Short	0 / 1	60 pcs
6	High Temp. High Humidity Test	60 , 90% RH °C	1000 Hrs	Open / Short	0 / 1	60 pcs
7	DC Operation Life Test	IF=100mA	1000 Hrs	Power decay	≤30%	60 pcs



■ Solder Profile:


-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):


Shape	Lead Frame Type / Holder Type
Hand soldering	1.Temp.at tip of iron : 300 °C MAX. 2.Soldering time : 3 sec MAX. 3.Distance : 3 mm MIN (from solder joint to case)
DIP soldering	1.Preheat temp : 100 °C MAX , 60 sec MAX. 2.Bath temp : 260 °C MAX. 3.Bath time : 5 sec MAX. 4.Distance : 3 mm MIN (From solder joint to case).
Reflow soldering	NO
Shape	SMD Type
Hand soldering	1.Temp.at tip of iron : 300 °C MAX. 2.Soldering time : 3 sec MAX.
DIP soldering	1.Preheat temp. : 120-150 °C , 60-120 sec. 2.Bath temp. : 260 °C MAX. 3.Bath time : 5 sec
Reflow soldering	1.Preheat temp. : 150-180 °C , 120 sec MAX. 2.Peak temp. : 260 °C MAX. 3.Peak time : 10 sec MAX.





■ Taping & Packing: Per Bag

Labeling




 Quantity: XXXX


 Quelighting P/N: XXXXXX


 Lot number: XXXXX

Iv Bin: XX Color Bin: XX Vf Bin: XX

Date Code: XXXX

Ordering Information:

Part #	Multiple Quantities	Quantity per bag
QLIR01BYGM		500pcs



Revision History:

Revision Date:	Changes:	Version #:
02-11-2019	Initial release	1.0
03-07-2019	Revise pulse and Radiant Intensity to min. 250mW	1.1

