

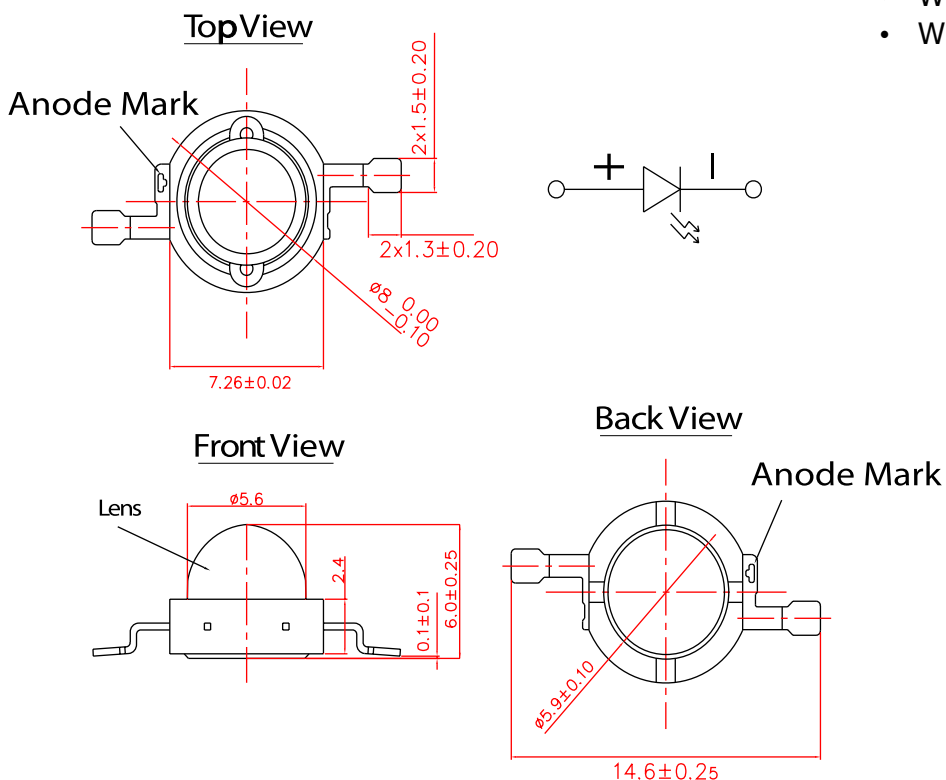
ARPL-FL1K7-R-HB (850nm, 700mA)

Items	Description
Housing white body	Heat resistant polymer
Encapsulating Resin	Silicon resin
Lens	Silicon/Polymer
Electrodes	Ag plating copper alloy
Die attach	Silver Paste
Chip	AlGaAs infrared chip



Part Name	Color		Lambertian	Focusing	Side Emitting	Unit
		O	2θ 1/2	2θ 1/2	θpeak	
ARPL-FL1K7-R-HB	Colorless	O	120	80	±85	Degree

Package Dimensions



Applications

- CCD of light
- Wireless earphones
- Wireless mouse

Notes

1. All dimensions are in mm.
2. Tolerances unless dimensions ± 0.25 mm.
3. Drawings are not to scale.
4. It is strongly recommended that the temperature of heat slug be not higher than 55°C.
5. Pd free , RoHS compliant

Absolute Maximum Rating

Parameter	Symbol	Rating	Unit
DC Forward Current	IF	700	mA
Pulse Forward Current	IF	1000	mA
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Junction temperature	Tj	125	°C
ESD Sensitivity	VB	2000	V
Manual Soldering Time at 260 °C	Tsol	5	s

Luminous Flux at $I_F=700\text{mA}$

Part Name	Color		Min.	TYP	MAX	Unit
ARPL-FL1K7-R-HB	Colorless	O	29		101	mW/sr

Forward Voltage Character at $I_F=700\text{mA}$

Part Name	Color		Min.	TYP	MAX	Unit
ARPL-FL1K7-R-HB	Colorless	O	1.15		2.65	V

Thermal Resistance Characteristic at $I_F=700\text{mA}$

Part Name	Color		$\Delta V_F/\Delta T$		$R_{\theta J-B}$	
			Typ.	Unit	Typ.	Unit
ARPL-FL1K7-R-HB	Colorless	O	-2	mV/°C	15	°C/W

Emission angle characteristic at $I_F=350\text{mA}$

Part Name	Color		Lambertian $2\theta_{1/2}$	Focusing $2\theta_{1/2}$	Side Emitting θ_{peak}	Unit
ARPL-FL1K7-R-HB	Colorless	O	120	80	±85	Degree

Notes

1. Flux is measured with an accuracy of $\pm 10\%$.
2. Forward voltage is measured with an accuracy of ± 0.2 .
3. Wavelength is measured with an accuracy of $\pm 2\text{nm}$.
4. Value for total power dissipation when two or three devices are lit simultaneously.

Format of Labeling for Emitters

Luminous Intensity Bins: (Code: X)

Luminous Intensity (IV), Unit: mW/sr@ 700mA

Dominant Wavelength Bin Structure (Code: IR4)

Dominant Wavelength (Hue), Unit: nm@700mA

Bin Code	Minimum	Maximum
W	10	20
X	20	30
Y	30	40
Z	40	50

Including test tolerance

Bin Code	Minimum Peak Wavelength (nm)	Maximum Peak Wavelength (nm)
IR	839	861

Including test tolerance

Forward Voltage Bins (Code: V0)

Forward Voltage (V_F), Unit: V@ 700mA

Bin Code	Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
V2	1.15	1.7
V31	1.75	1.85
V32	1.85	1.95
V4	1.95	2.15
V5	2.15	2.35
V6	2.35	2.65

VF tolerance are 0.1V.

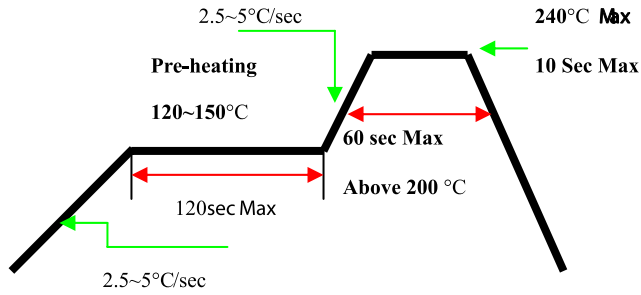
Reliability Test

Item	Description	Stress Condition	Test Duration
RTOLC	Room Temperature Operation Life	25°C	1000 hours
WHT	Wet High Temperature	85°C / 85%RH	1000 hours
TC	Temperature Cycling	-40/+110°C 30min dwell, <5min trans	200 cycles
TS	Thermal Shock	-40/+110°C 20min dwell, <20min trans	200 cycles
HTSL	High Temperature Storage Light	120°C	1000 hours
LTOL	Low Temperature Storage Light	-40°C	1000 hours
SHR	Solder Heat Resistance	260±5°C , 5 secs	
MS	Mechanical Shock	1500G, 0.5msecs pulse 5 shocks each 6 axis	
ND	Natural Drop	On concrete from 1.2m,3*times	
RV	Random Vibration	6G RMS from 10 to 2KHz,10mins/axis	
VVF	Variable Vibration Frequency	10-2000-10Hz, 20G 1min, 1,5min, 3timesx/axis	

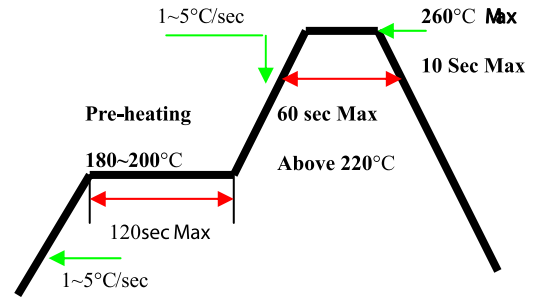
Soldering Conditions

Item	Description		Remark	
Soldering	Reflow Soldering		Hand Soldering	
	Lead Soldering	Lead-free Solder	Temperature Soldering time	350°C Max 3 sec Max (one time only)
Pre-heat	120~150°C	180~200°C		
Pre-heat time	120 sec Max	120 sec Max		
Peak temperature	240°C Max	260°C Max		
Soldering time	10 sec Max	10 sec Max		
Condition	Refer to Temperature- Profile (1)	Refer to Temperature-Profile (2)		

(1) Lead Solder



(2) Lead-free Solder



Notes

- (1) Although the recommended soldering conditions are specified in the above table, reflow or hand soldering at the lowest possible temperature is desirable for the LEDs.
- (2) A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.
- (3) Reflow soldering should not be done more than two times.
- (4) After soldering, do not warp the circuit board.
- (5) In soldering process, stress on the LEDs during heating should be avoided.

Soldering Note

- 1 Please do not press the lens over 1.5kg.



Good

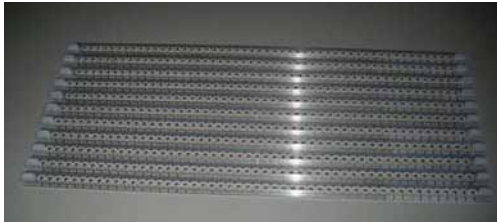
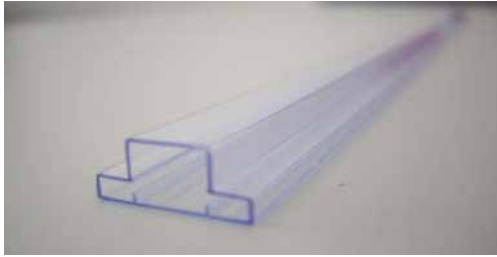


Impermissible

- 2 Please wear anti-static wrist or glove to prevent ESD damage when assembling.



Package Specification



Storage Cautions

1. Before use the LED package, the LEDs should be keep at 30°C or less and 65%RH or less.
2. Base on tube packing method, we recommend baking process before use LED go to soldering process. Baking process: 12hours at 65±5°C less., after baking process, The LEDs should be soldered within 168 hours (7 days) LED and same keep room condition at less than 25°C and 65%RH when soldering processes.
3. Please avoid rapid transitions in ambient temperature in high humidity environments where condensation may occur.

Application notes of LED

1. Base on high driving current conditions , the LED slug bottom must have good contact with heat sink. Please use high thermal conductive glue to adhesion between slug and MCPCB.
2. Extreme junction temperature caused either by excessive power dissipation, an abnormally high thermal path, or improper assembly can cause thermal overstress failures.