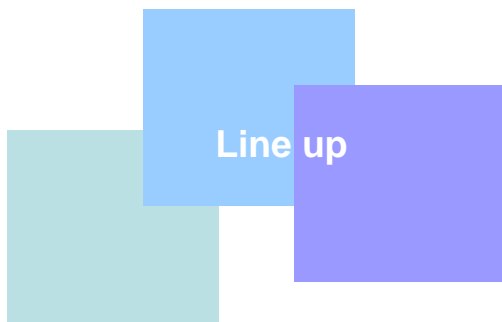


Jul. 2006



## ***Guide for Infrared Emitting Diodes***



# Safety Considerations

## Cautions

1. Opnext Japan, Inc. (OPJ) neither warrants nor grants licenses of any our rights or any third party's patent, copyright, trademark, or other intellectual property rights for information contained in this document. OPJ bears no responsibility for problems that may arise with third party's rights, including intellectual property rights, in connection with use of the information contained in this document.
2. Products and product specifications may be subject to change without notice. Confirm that you have received the latest product standards or specifications before final design, purchase or use.
3. OPJ makes every attempt to ensure that its products are of high quality and reliability. However, contact our sales office before using the product in an application that demands especially high quality and reliability or where its failure or malfunction may directly threaten human life or cause risk of bodily injury, such as aerospace, aeronautics, nuclear power, combustion control, transportation, traffic, safety equipment or medical equipment for life support.
4. Design your application so that the product is used within the ranges guaranteed by OPJ particularly for maximum rating, operating supply voltage range, heat radiation characteristics, installation conditions and other characteristics. OPJ bears no responsibility for failure or damage when used beyond the guaranteed ranges. Even within the guaranteed ranges, consider normally foreseeable failure rates or failure modes in semiconductor devices and employ systemic measures such as fail-safes, so that the equipment incorporating OPJ product does not cause bodily injury, fire or other consequential damage due to operation of the OPJ product.
5. This product is not designed to be radiation resistant.
6. No one is permitted to reproduce or duplicate, in any form, the whole or part of this document without written approval from OPJ.
7. Contact our sales office for any questions regarding this document or OPJ products.

1. This product contains gallium arsenide (GaAs), which may seriously endanger your health even at very low doses. Please avoid treatment which may create GaAs powder or gas, such as disassembly or performing chemical experiments, when you handle the product.  
When disposing of the product, please follow the laws of your country and separate it from other waste such as industrial waste and household garbage.
2. Definition of items shown in this CAS is in accordance with that shown in Opto Device Databook issued by OPJ unless otherwise specified.

## Linup of Infrared Emitting Diodes

T<sub>c</sub>=25

Type No.	Package	Mark Layout	Absolute Maximum Ratings		Optical and Electrical Characteristics												
			Forward Current I <sub>F</sub> (mA)	Operating Temp. Topr ( )	Optical Output Po (mW)			Peak Wavelength λ <sub>p</sub> (nm)			Spectral Width λ (nm)			Forward Voltage VF (V)			Test Conditions IF (mA)
					Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
HE7601SG	SG	B	250	-10 ~ +60	30	-	-	740	770	800	-	50	-	-	2.5	200	
HE8404SG	SG	B	250	-10 ~ +60	40	-	-	790	820	850	-	50	-	-	2.5	200	
HE8807SG	SG	B	200	-10 ~ +85	10	-	-	800	880	900	-	30	-	-	1.7	2.3	
HE8807FL	FL	A	200	-10 ~ +85	0.5*	-	-	800	880	900	-	30	-	-	1.7	2.3	
HE8811	SG	-	200	-10 ~ +60	20	-	-	780	820	900	-	50	-	-	2.5	150	
HE8812SG	SG	B	250	-10 ~ +60	40	-	-	840	870	900	-	50	-	-	2.5	200	

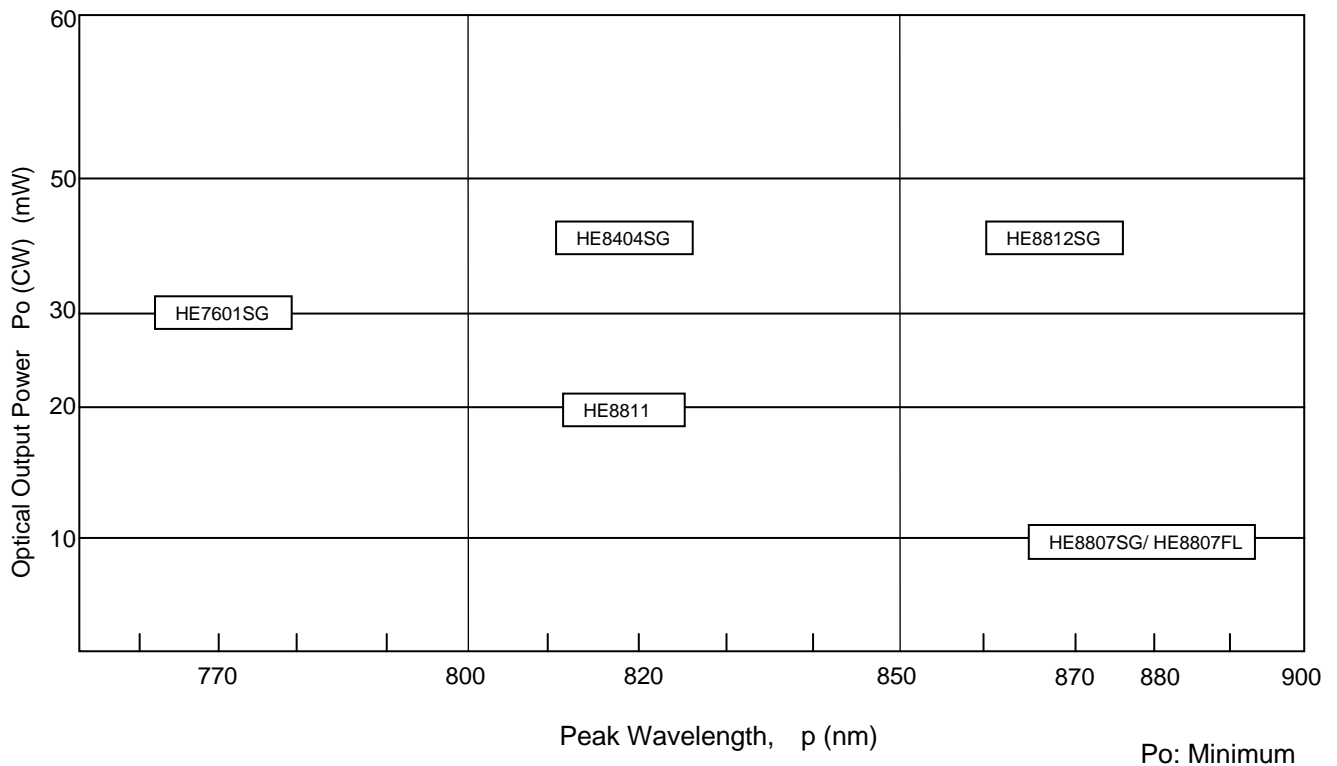
Note: \*)\*: The optical output within 9 degrees(NA=0.16) and IF=20mA of the acceptance angle.

## Select for your Application

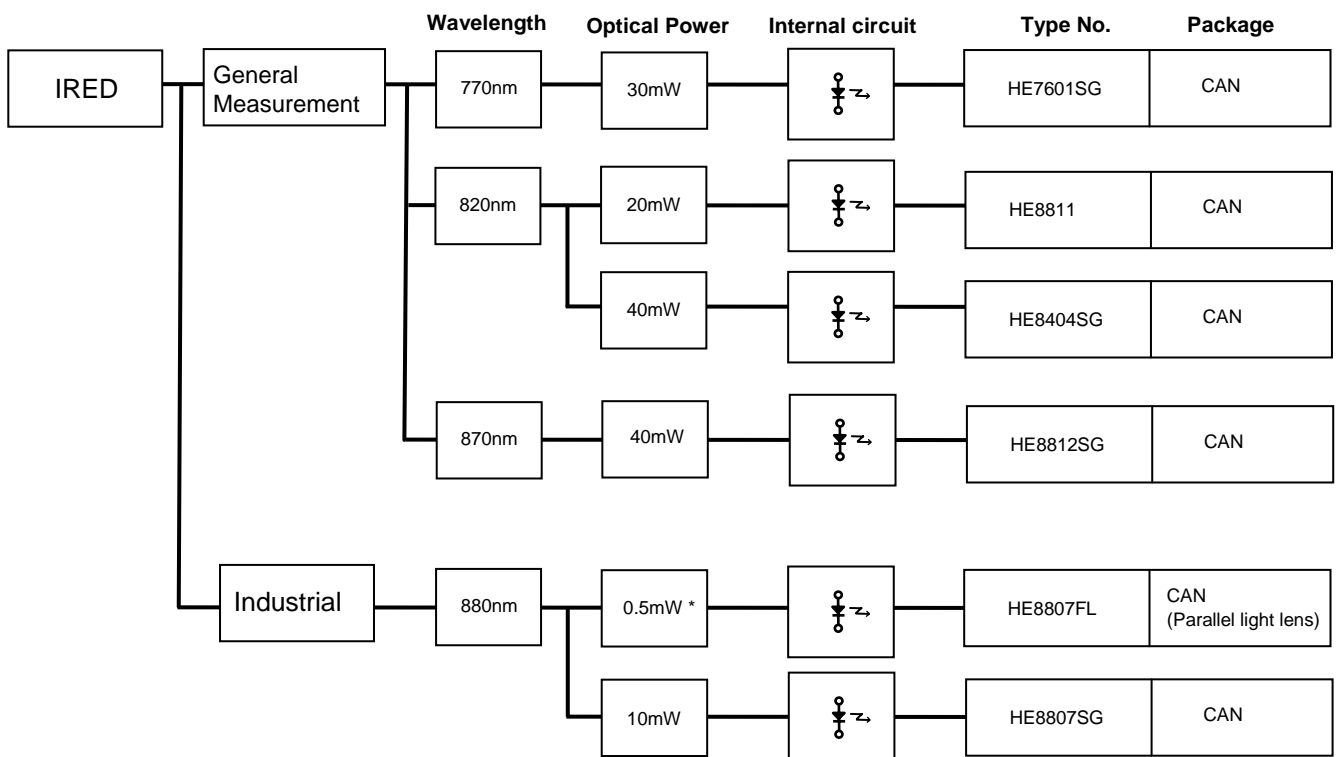
Main Application								Optical Output Power Po (mW) (Min.)	Peak Wavelength p(nm) (Typ.)	Φ5.4mm Package (FL-type)	Φ5.4mm Package (SG-type)
Light source in measurement	Light source in sensor	Optical beam transmitter	Illumination	Stepper	Linear encoder	Rotary encoder	Medical, Vision tester				
								0.5*	880	HE8807FL	
								10			HE8807SG
								20	820		HE8811
								30	770		HE7601SG
								40	820		HE8404SG
								40	870		HE8812SG

Note: \*)\*: The optical output within 9 degrees(NA=0.16) and IF=20mA of the acceptance angle.

## Peak Wavelength vs. Optical Output Power



## Product Lineup of Infrared Emitting Diodes



Note: \*)\*: The optical output within 9 degrees (NA=0.16) and IF=20mA of the acceptance again.

### Dome Diameter and Junction Diameter of Each Type Number

Type No.	Dome Dia. ( $\mu\text{m}$ )	Junction Dia. ( $\mu\text{m}$ )
HE7601SG	600	160
HE8404SG	600	160
HE8807 series	400	100
HE8811	400	100
HE8812SG	600	160

### Infrared Emitting Diode Structures

Type No.	Structure
HE7601SG	DH
HE8404SG	DH
HE8807 series	SH
HE8811	DH
HE8812SG	DH

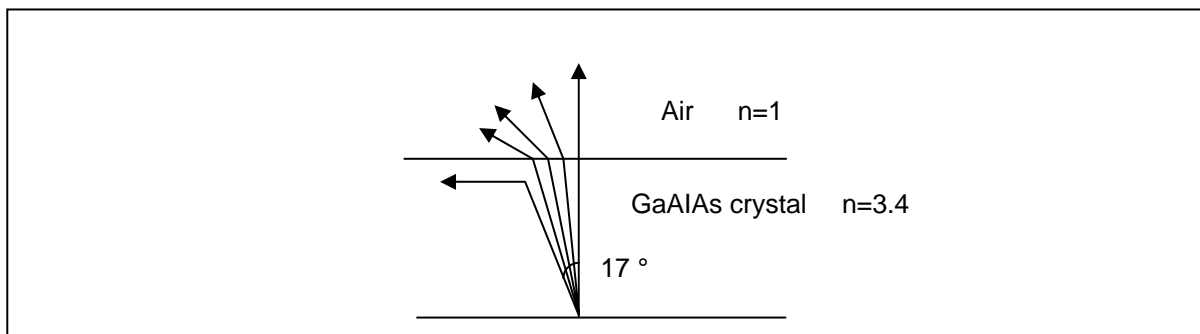


Figure1. Light Refraction at Boundary Layer

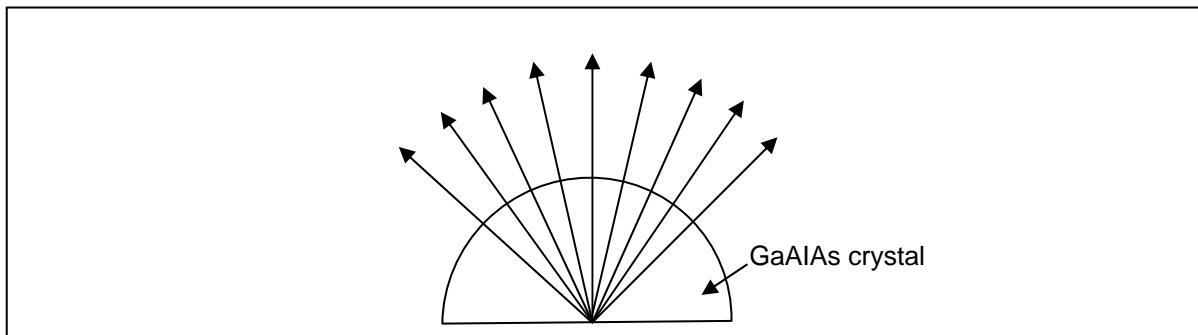
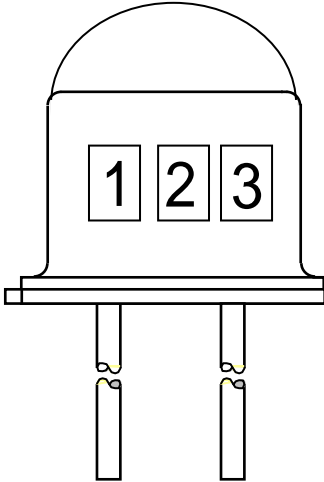
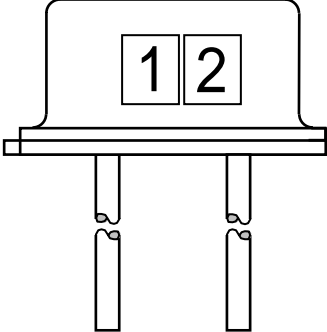


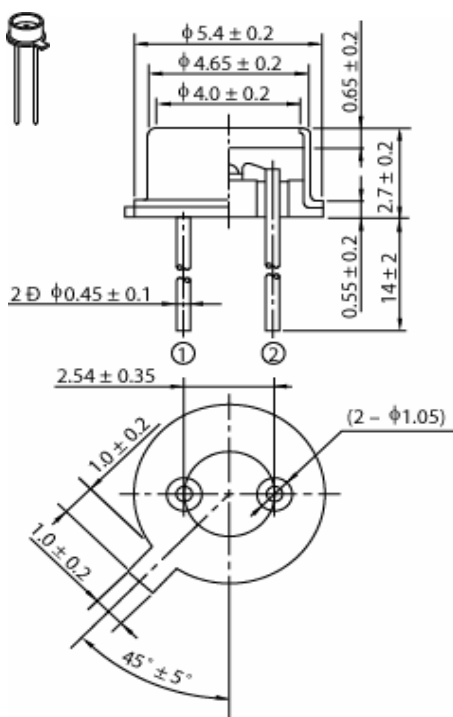
Figure2. Hemispherical Shaped Light Radiation

# Mark Layout

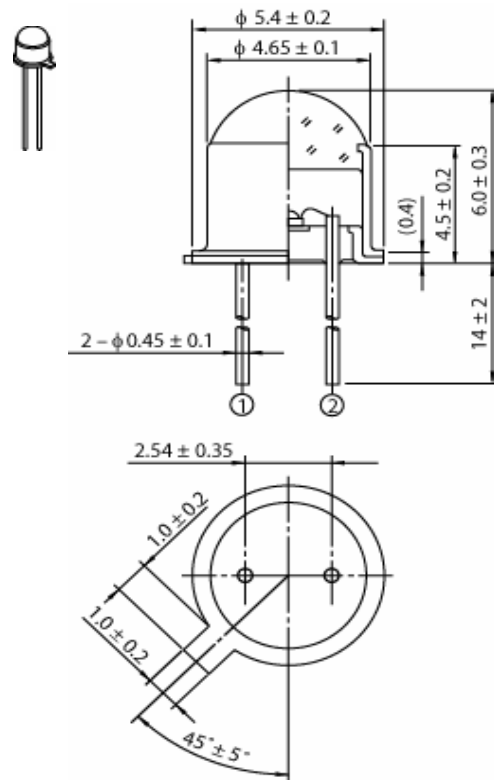
Layout	A	B
Outline	FL	SG
Mark Layout		
1st character	Year code: last number	
2nd character	Month of manufacturing code: (refer below table)	
3rd character	Week of manufacturing code: (refer below table)	

Month	1	2	3	4	5	6	7	8	9	10	11	12
Code	A	B	C	D	E	F	G	H	J	K	L	M

## SG- Package



## FL- Package



**Contacts:  
Opnext Locations**

**Headquarters**

**Opnext Inc.**

1 Christopher Way  
Eatontown, NJ 07724  
Tel: + 1-732-544-3400  
Fax: + 1-732-544-3561

**Pluggables Business Unit/  
North America Sales Office**

940 Auburn Court  
Fremont, CA 94538  
Tel: + 1-510-580-8828  
Fax: + 1-510-580-8827

**Shanghai representative Office**

Westgate Tower, Room 2008B  
1038 Nanjing Xi Lu  
Tel: + 86-21-6218-3676  
Fax: + 86-21-6218-3669

**Opnext Germany, Gmbh  
European Sales and Operations**

Dornacher Str 3  
D-85622 Feldkirchen bei  
Munchen, Germany  
Tel: + 49-89-99180-215  
Fax: + 49-89-99180-352

**Opnext Japan, Inc  
Sales Office**

Takagi Building 3F  
Iwamoto-cho 1-3-9, Chiyoda-ku  
Tokyo 101-0032, Japan  
Tel: + 81-3-3865-5591  
Fax: + 81-3-3865-5597



**Device Business Unit Opnext Japan, Inc.**

190 Kashiwagi, Komoro-shi, Nagano 384-8511, Japan  
Tel: +81-267-26-1816

Opnext Homepage

Japanese <http://www.opnext.com/jp/products/>

English <http://www.opnext.com/products/>

