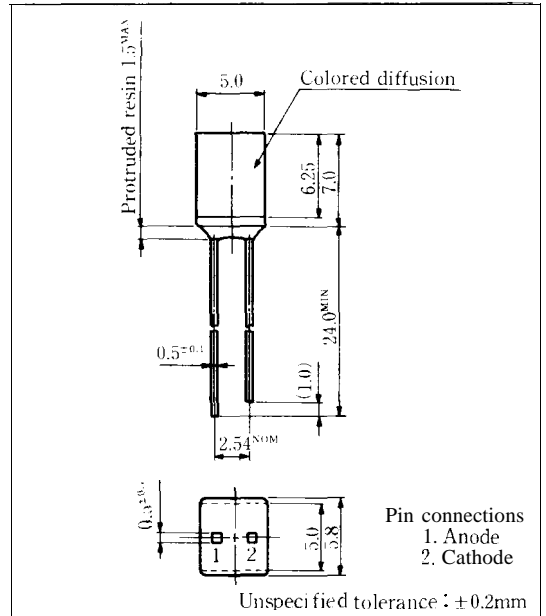


# GL8□□22 Series 'qua' "p'ED 'amps

## Model No.

GL8LR22	Red (High-luminosity)	GaAlAs/GaAs
GL8TR22	Red (High-luminosity)	GaAlAs/GaAs
GL8PR22	Red	GaP
GL8HD22	Red	GaAsP/GaP
GL8HS22	Sunset orange	GaAsP/GaP
GL8HY22	Yellow	GaAsP/GaP
GL8EG22	Yellow-green	GaP
GL8KG22	Green	GaP

## Outline Dimensions (Unit: mm)



## Features

1. 5.0mm X 5.0mm square type all resin mold
2. Colored diffusion lens type

## Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	GL8LR22 GL8PR22 GL8HD22 GL8EG22				Unit
		GL8TR22		GL8HS22 GL8KG22		
				GL8HY22		
Power dissipation	P	110	23	84	84	mW
Continuous forward current	I <sub>F</sub>	50	10	30	30	mA
*1 Peak forward current	I <sub>FM</sub>	300	50	50	50	mA
Derating factor	DC	0.67	0.13	0.40	0.40	mA/°C
	Pulse	—	4.00	0.67	0.67	mA/°C
Reverse voltage	V <sub>R</sub>	5	5	5	5	V
Operating temperature	T <sub>opr</sub>	-25 to +85				°C
Storage temperature	T <sub>stg</sub>	-25 to +100				°C
*2 Soldering temperature	T <sub>sol</sub>	260(within 5 seconds)				°C

\*1 Duty ratio = 1/10, Pulse width = 0.1ms

Duty ratio = 1/16, Pulse width ≤ 1ms for GL8LR22 and GL8TR22

\*2 At the position of 1.6mm from the bottom face of resin package

**SHARP**

GL8LR22 (Red) / GL8TR22 (Red)

■ Electro-optical Characteristics

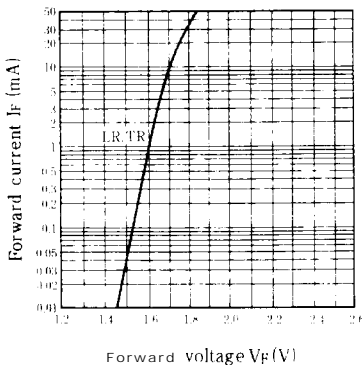
(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL8LR22	I <sub>F</sub> = 20mA	—	1.75	2.2	V
		GL8TR22	I <sub>F</sub> = 20mA	—	1.75	2.2	
※3 Luminous intensity	I <sub>v</sub>	GL8LR22	I <sub>F</sub> = 20mA	3.5	10	—	mcd
		GL8TR22	I <sub>F</sub> = 20mA	2.0	5.0	—	
Peak emission wavelength	λ <sub>p</sub>	GL8LR22	I <sub>F</sub> = 20mA	—	660	—	‘m
		GL8TR22	I <sub>F</sub> = 20mA	—	660	—	
Spectrum radiation bandwidth	Δλ	GL8LR22	I <sub>F</sub> = 20mA	—	20	—	‘m
		GL8TR22	I <sub>F</sub> = 20mA	—	20	—	
Reverse current	I <sub>R</sub>	GL8LR22	V <sub>R</sub> = 4V	—	—	10	μA
		GL8TR22	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	GL8LR22	V = 0V f = 1MHz	—	30	—	pF
		GL8TR22	V = 0V f = 1 MHz	—	30	—	
Response frequency	f <sub>c</sub>	GL8LR22	—	—	8	—	MHz
		GL8TR22	—	—	8	—	

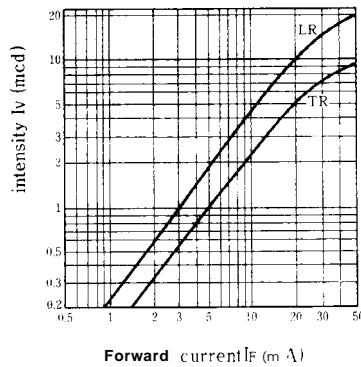
※3 Tolerance: ±30%

■ Characteristics Diagrams

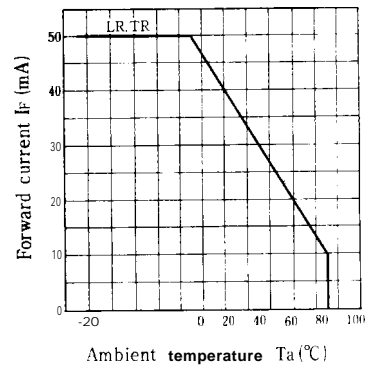
Forward Current vs. Forward Voltage (Ta = 25°C)



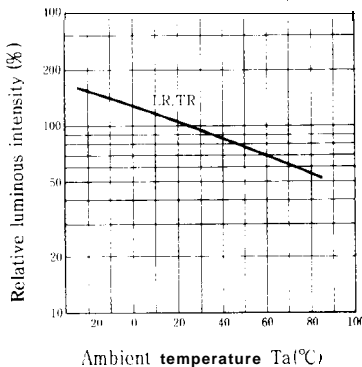
Luminous Intensity vs. Forward Current (Ta = 25°C)



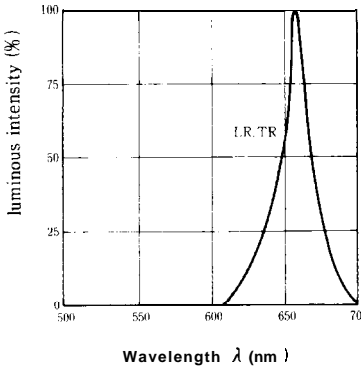
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature (IF = 20mA)



Spectrum Distribution (Ta = 25°C)



SHARP

3

GL8PR22 (Red) / GL8HD22 (Red)

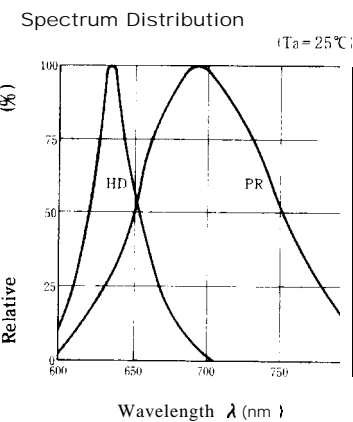
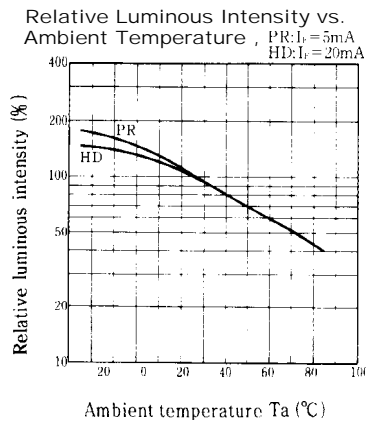
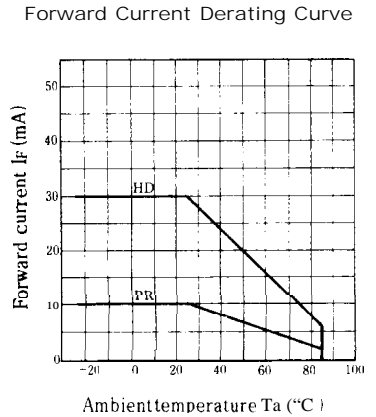
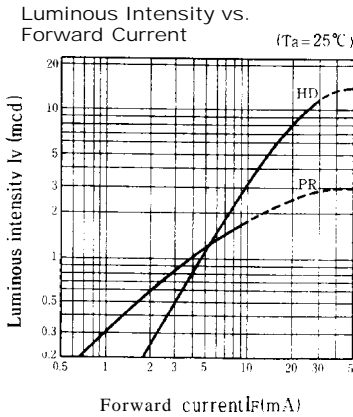
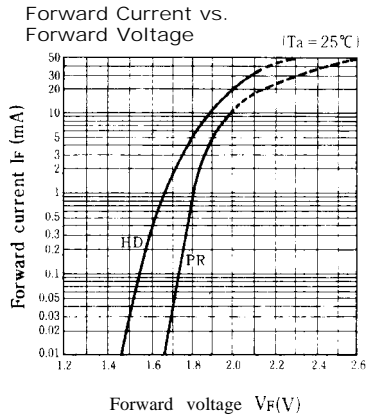
■ Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL8PR22	I <sub>F</sub> = 5mA	—	1.9	2.3	V
		GL8HD22	I <sub>F</sub> = 20mA	—	2.0	2.8	
※3 Luminous intensity	I <sub>V</sub>	GL8PR22	I <sub>F</sub> = 5mA	0.60	1.2	—	mcd
		GL8HD22	I <sub>F</sub> = 20mA	2.0	8.0	—	
Peak emission wavelength	λ <sub>p</sub>	GL8PR22	I <sub>F</sub> = 5mA	—	695	—	nm
		GL8HD22	I <sub>F</sub> = 20mA	—	635	—	
Spectrum radiation bandwidth	Δλ	GL8PR22	I <sub>F</sub> = 5mA	—	100	—	nm
		GL8HD22	I <sub>F</sub> = 20mA	—	35	—	
Reverse current	I <sub>R</sub>	GL8PR22	V <sub>R</sub> = 4V	—	—	10	μA
		GL8HD22	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	GL8PR22	V = 0V f = 1 MHz	—	55	—	pF
		GL8HD22	V = 0V f = 1 MHz	—	20	—	
Response frequency	f <sub>c</sub>	GL8PR22	—	—	4	—	kHz
		GL8HD22	—	—	4	—	

※3 Tolerance: ±30%

■ Characteristics Diagrams



GL8HS22 (Sunset orange) / GL8HY22 (Yellow)

Electro-optical Characteristics

(Ta = 25°C)

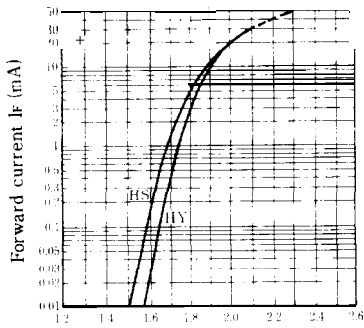
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL8HS22	I <sub>F</sub> = 20mA	—	2.0	2.8	V
		GL8HY22	I <sub>F</sub> = 20mA	—	2.0	2.8	
※3 Luminous intensity	I <sub>v</sub>	GL8HS22	I <sub>F</sub> = 20mA	1.5	5.0	—	mcd
		GL8HY22	I <sub>F</sub> = 20mA	1.5	5.0	—	
Peak emission wavelength	λ <sub>p</sub>	GL8HS22	I <sub>F</sub> = 20mA	—	610	—	'm
		GL8HY22	I <sub>F</sub> = 20mA	—	585	—	
Spectrum radiation bandwidth	Δλ	GL8HS22	I <sub>F</sub> = 20mA	—	35	—	'm
		GL8HY22	I <sub>F</sub> = 20mA	—	30	—	
Reverse current	I <sub>R</sub>	GL8HS22	V <sub>R</sub> = 4V	—	—	10	μA
		GL8HY22	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	GL8HS22	V = 0V f = 1MHz	—	15	—	pF
		GL8HY22	V = 0V f = 1 MHz	—	35	—	
Response frequency	f <sub>c</sub>	GL8HS22	—	—	4	—	MHz
		GL8HY22	—	—	4	—	

※3 Tolerance: ±30%

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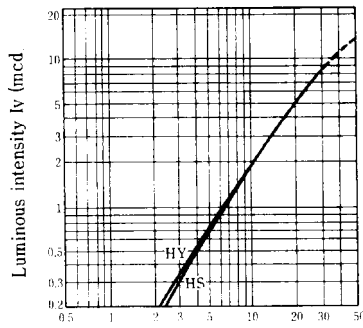
Characteristics Diagrams

Forward Current vs. Forward Voltage (Ta = 25°C)



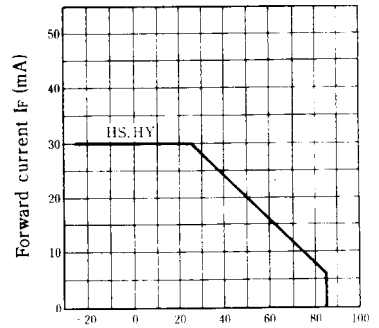
Forward voltage V<sub>F</sub> (V)

Luminous Intensity vs. Forward Current (Ta = 25°C)



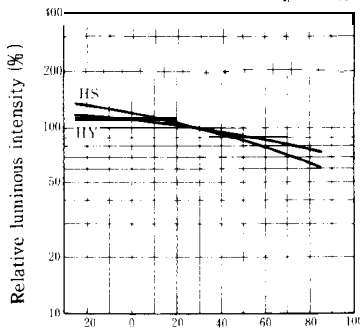
Forward current I<sub>F</sub> (mA)

Forward Current Derating Curve



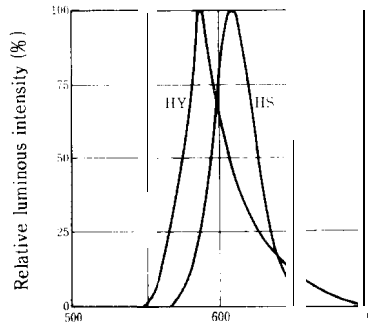
Ambient temperature T<sub>a</sub> (°C)

Relative Luminous Intensity vs. Ambient Temperature (I<sub>F</sub> = 20mA)



Ambient temperature T<sub>a</sub> (°C)

Spectrum Distribution (Ta = 25°C)



Wavelength λ (nm)

GL8EG22 (Yellow-green) / GL8KG22 (Green)

■ Electro-optical Characteristics

(Ta = 25°C)

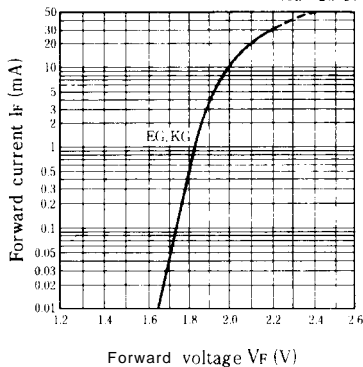
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL8EG22	I <sub>F</sub> = 20mA	—	2.1	2.8	V
		GL8KG22	I <sub>F</sub> = 20mA		2.1	2.8	
*3 Luminous intensity	I <sub>v</sub>	GL8EG22	I <sub>F</sub> = 20mA	2.0	6.0	—	mcd
		GL8KG22	I <sub>F</sub> = 20mA	1.5	3.5	—	
Peak emission wavelength	λ <sub>p</sub>	GL8EG22	I <sub>F</sub> = 20mA	—	565	—	‘m
		GL8KG22	I <sub>F</sub> = 20mA		555	—	
Spectrum radiation bandwidth	Δλ	GL8EG22	I <sub>F</sub> = 20mA		30	—	‘m
		GL8KG22	I <sub>F</sub> = 20mA		25	—	
Reverse current	I <sub>R</sub>	GL8EG22	V <sub>R</sub> = 4V			10	μA
		GL8KG22	V <sub>R</sub> = 4V			10	
Terminal capacitance	C <sub>t</sub>	GL8EG22	V = 0V f = 1 MHz	—	35	—	‘F
		GL8KG22	V = 0V f = 1 MHz	—	40	—	
Response frequency	f <sub>c</sub>	GL8EG22	—	—	4	—	MHz
		GL8KG22	—	—	4	—	

\*3 Tolerance: ±30%

■ Characteristics Diagrams

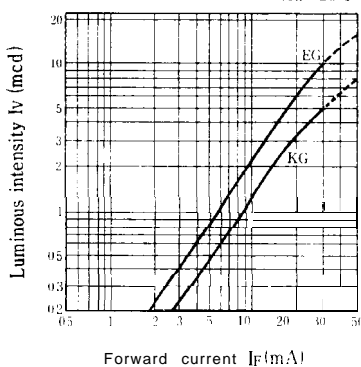
Forward Current vs. Forward Voltage

(Ta = 25°C)

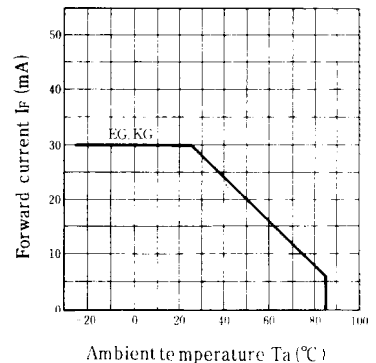


Luminous Intensity vs. Forward Current

(Ta = 25°C)

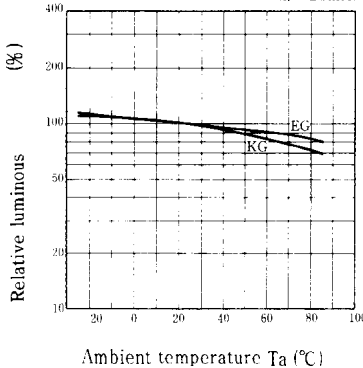


Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature

(If = 20mA)



Spectrum Distribution

(Ta = 25°C)

