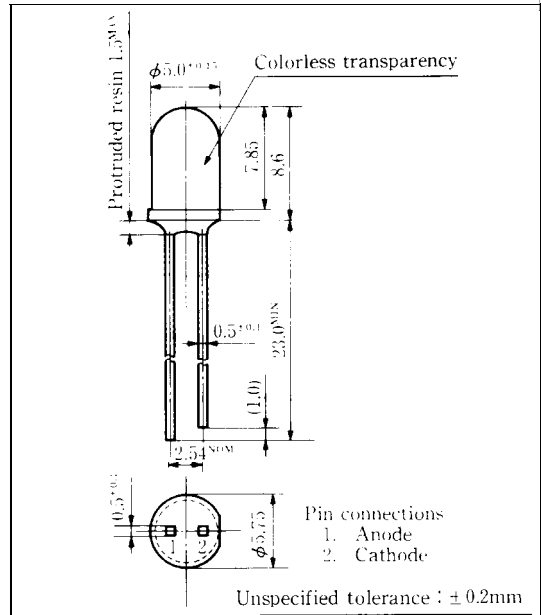


# GL5□□44 Series $\phi 5\text{mm}(T-1\frac{3}{4})$ Cylinder Type LED Lamps

## Model No.

GL5LR44 Red (High-luminosity)	GaAlAs/GaAs
GL5TR44 Red (High-luminosity)	GaAlAs/GaAs
GL5PR44 Red	GaP
GL5HD44 Red	GaAsP/GaP
GL5HS44 Sunset orange	GaAsP/GaP
GL5HY44 Yellow	GaAsP/GaP
GL5EG44 Yellow-green	GaP
GL5KG44 Green	GaP

## Outline Dimensions (Unit: mm)



## Features

- $\phi 5\text{mm}(T-1\frac{3}{4})$  all resin mold
- Colorless transparency lens type
- For backlighting

## Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	GL5LR44	GL5PR44	GL5HD44	GL5EG44	Unit	
		GL5TR44		GL5HS44	GL5KG44		
				GL5HY44			
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	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  $\leq 1\text{ms}$  for GL5LR44 and GL5TR44

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

**SHARP**

In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device.

## GL5LR44 (Red) / GL5TR44 (Red)

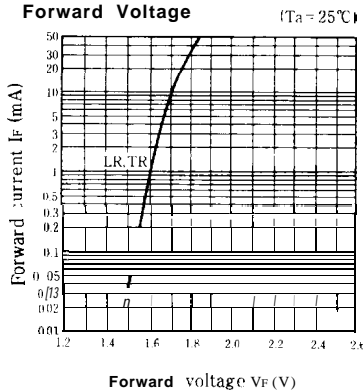
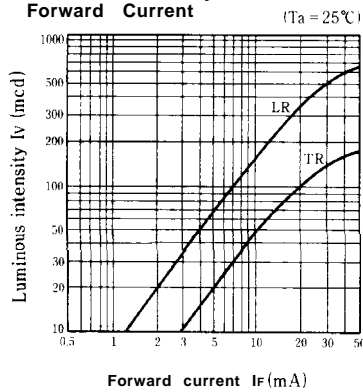
## ■ Electro-optical Characteristics

(Ta = 25°C)

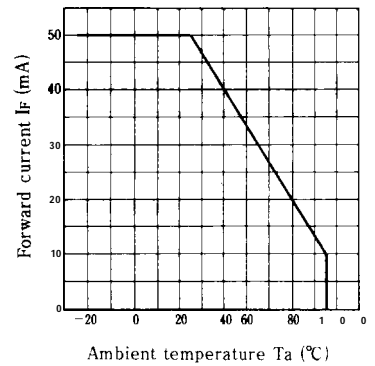
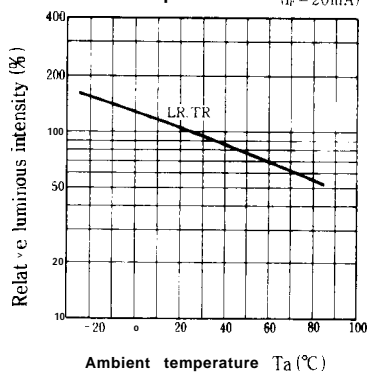
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL5LR44	I <sub>F</sub> = 20mA	—	1.75	2.2	V
		GL5TR44	I <sub>F</sub> = 20mA	—	1.75	2.2	
※3 Luminous intensity	I <sub>v</sub>	GL5LR44	I <sub>F</sub> = 20mA	170	340	—	'cd
		GL5TR44	I <sub>F</sub> = 20mA	40	100	—	
Peak emission wavelength	λ <sub>p</sub>	GL5LR44	I <sub>F</sub> = 20mA	—	660	—	'm
		GL5TR44	I <sub>F</sub> = 20mA	—	660	—	
Spectrum radiation bandwidth	Δλ	GL5LR44	I <sub>F</sub> = 20mA	—	20	—	'm
		GL5TR44	I <sub>F</sub> = 20mA	—	20	—	
Reverse current	I <sub>R</sub>	GL5LR44	V <sub>R</sub> = 4V	—	—	10	μA
		GL5TR44	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	GL5LR44	V = 0V f = 1 MHz	—	30	—	pF
		GL5TR44	V = 0V f = 1MHz	—	30	—	
Response frequency	f <sub>c</sub>	GL5LR44	—	—	8	—	MHz
		GL5TR44	—	—	8	—	

※3 Tolerance: ±30%

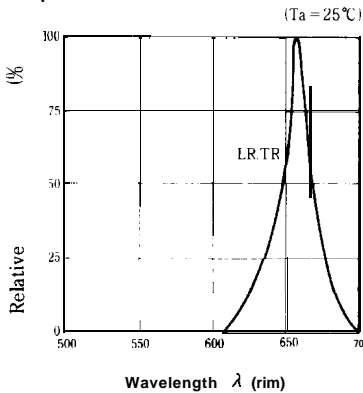
## ■ Characteristics Diagrams

Forward Current vs.  
Forward VoltageLuminous Intensity vs.  
Forward Current

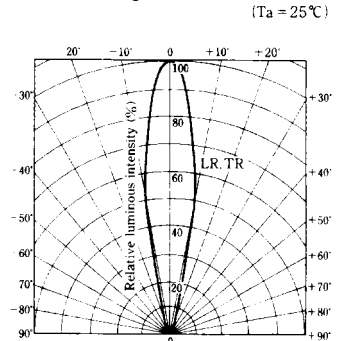
Forward Current Derating Curve

Relative Luminous Intensity vs.  
Ambient Temperature

Spectrum Distribution



Radiation Diagram



GL5PR44 (Red) / GL5HD44 (Red)

■ **Electro-optical** Characteristics

(Ta = 25°C)

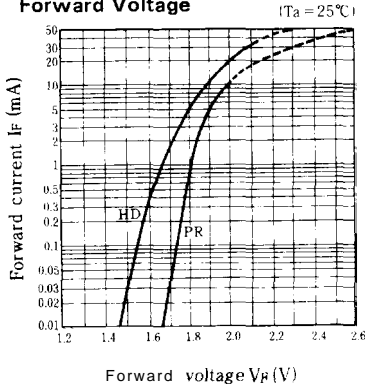
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL5PR44	I <sub>F</sub> = 5mA	—	1.9	2.3	V
		GL5HD44	I <sub>F</sub> = 20mA	—	2.0	2.8	
※3 Luminous intensity	I <sub>V</sub>	GL5PR44	I <sub>F</sub> = 5mA	5.0	15	—	'cd
		GL5HD44	I <sub>F</sub> = 20mA	40	150	—	
Peak emission wavelength	λ <sub>p</sub>	GL5PR44	I <sub>F</sub> = 5mA	—	695	—	'm
		GL5HD44	I <sub>F</sub> = 20mA	—	635	—	
Spectrum radiation bandwidth	Δλ	GL5PR44	I <sub>F</sub> = 5mA	—	100	—	'm
		GL5HD44	I <sub>F</sub> = 20mA	—	35	—	
Reverse current	I <sub>R</sub>	GL5PR44	V <sub>R</sub> = 4V	—	—	10	μA
		GL5HD44	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	GL5PR44	V = 0V f = 1MHz	—	55	—	pF
		GL5HD44	V = 0V f = 1 MHz	—	20	—	
Response frequency	f <sub>c</sub>	GL5PR44	—	—	4	—	MHz
		GL5HD44	—	—	4	—	

※3 Tolerance: ±30%

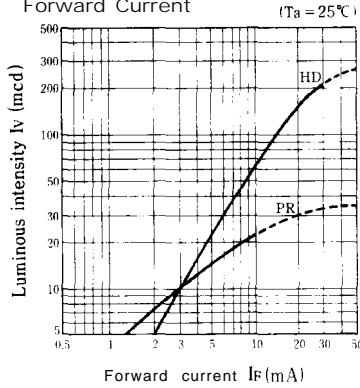
3

■ **Characteristics Diagrams**

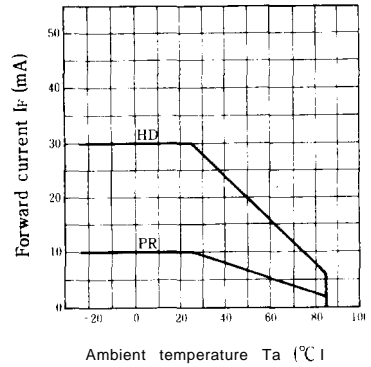
**Forward Current vs. Forward Voltage**



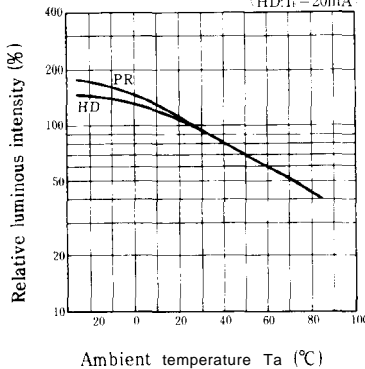
**Luminous Intensity vs. Forward Current**



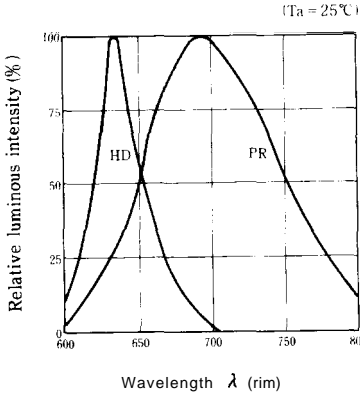
**Forward Current Derating Curve**



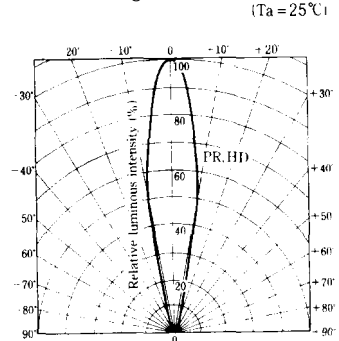
**Relative Luminous Intensity vs. Ambient Temperature**



**Spectrum Distribution**



**Radiation Diagram**



GL5HS44 (Sunset orange) / GL5HY44 (Yellow)

■ Electro-optical Characteristics

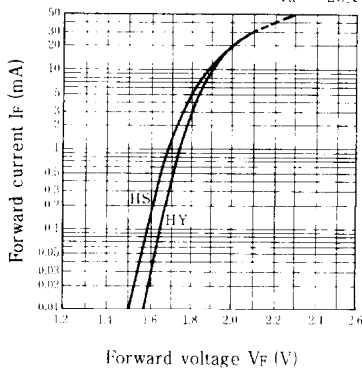
(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL5HS44	I <sub>F</sub> = 20mA	—	2.0	2.8	V
		GL5HY44	I <sub>F</sub> = 20mA	—	2.0	2.8	
*3 Luminous intensity	I <sub>v</sub>	GL5HS44	I <sub>F</sub> = 20mA	30	100	—	mcd
		GL5HY44	I <sub>F</sub> = 20mA	25	100	—	
Peak emission wavelength	λ <sub>p</sub>	GL5HS44	I <sub>F</sub> = 20mA	—	610	—	'm
		GL5HY44	I <sub>F</sub> = 20mA	—	585	—	
Spectrum radiation bandwidth	Δλ	GL5HS44	I <sub>F</sub> = 20mA	—	35	—	'm
		GL5HY44	I <sub>F</sub> = 20mA	—	30	—	
Reverse current	I <sub>R</sub>	GL5HS44	V <sub>R</sub> = 4V	—	—	10	μA
		GL5HY44	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	GL5HS44	V = 0 f = 1MHz	—	15	—	pF
		GL5HY44	V = 0 f = 1MHz	—	35	—	
Response frequency	f <sub>c</sub>	GL5HS44	—	—	4	—	'Hz
		GL5HY44	—	—	4	—	

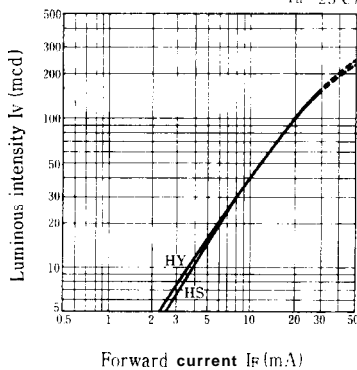
\*3 Tolerance: ±30%

■ Characteristics Diagrams

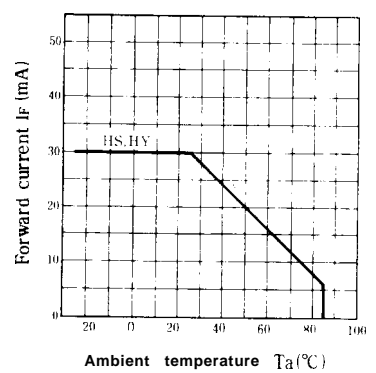
Forward Current vs. Forward Voltage (Ta = 25°C)



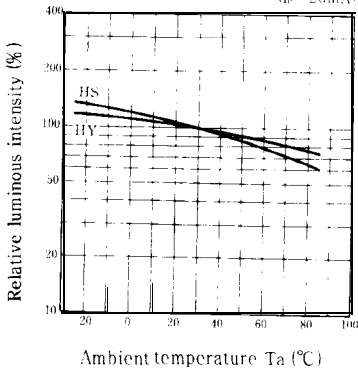
Luminous Intensity vs. Forward Current (Ta = 25°C)



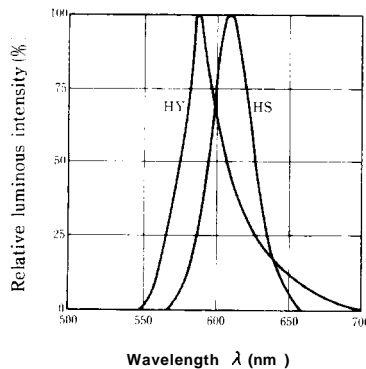
Forward Current Derating Curve



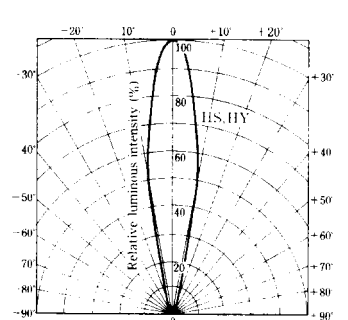
Relative Luminous Intensity vs. Ambient Temperature (If = 20mA)



Spectrum Distribution (Ta = 25°C)



Radiation Diagram (Ta = 25°C)



GL5EG44 (Yellow-green) / GL5KG44 (Green)

■ Electro-optical Characteristics

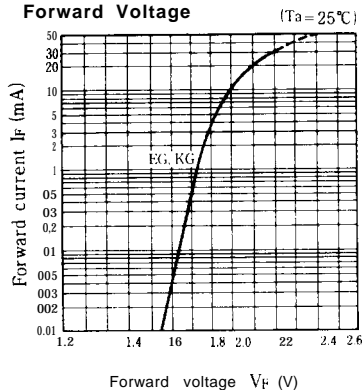
(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL5EG44	I <sub>F</sub> = 20mA		2.1	2.8	“
		GL5KG44	I <sub>F</sub> = 20mA	—	2.1	2.8	
※3 Luminous intensity	I <sub>v</sub>	GL5EG44	I <sub>F</sub> = 20mA	50	160	—	mcd
		GL5KG44	I <sub>F</sub> = 20mA	35	70	—	
Peak emission wavelength	λ <sub>p</sub>	GL5EG44	I <sub>F</sub> = 20mA		565	—	‘m
		GL5KG44	I <sub>F</sub> = 20mA	—	555	—	
Spectrum radiation bandwidth	Δλ	GL5EG44	I <sub>F</sub> = 20mA		30	—	‘m
		GL5KG44	I <sub>F</sub> = 20mA	—	25	—	
Reverse current	I <sub>R</sub>	GL5EG44	V <sub>R</sub> = 4V	—		10	μA
		GL5KG44	V <sub>R</sub> = 4V	—		10	
Terminal capacitance	C <sub>t</sub>	GL5EG44	V = 0V f = 1 MHz	—	35	—	pF
		GL5KG44	V = 0V f = 1 MHz	—	40	—	
Response frequency	f <sub>c</sub>	GL5EG44	—	—	4	—	MHz
		GL5KG44	—	—	4	—	

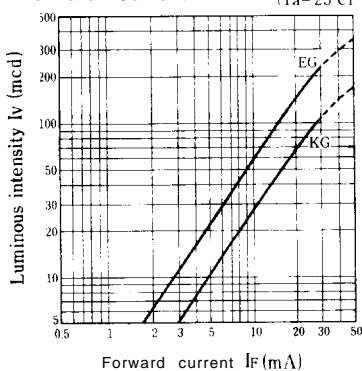
※3 Tolerance: ±30%

■ Characteristics Diagrams

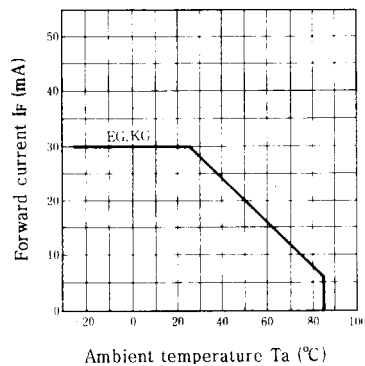
Forward Current vs. Forward Voltage



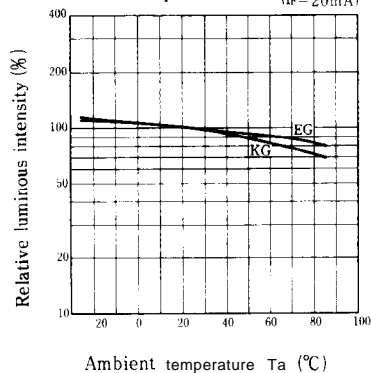
Luminous Intensity vs. Forward Current



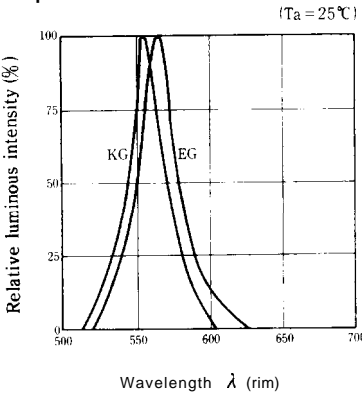
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution



Radiation Diagram

