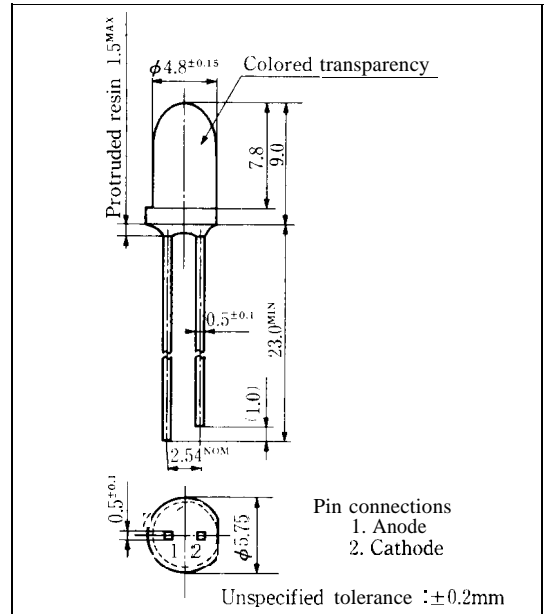


GL5□□40 Series $\phi 5\text{mm(T-1\%)}$ Cylinder Type LED Lamps

Model No.

GL5LR40	Red (High-luminosity)	GaAlAs/GaAs
GL5TR40	Red (High-luminosity)	GaAlAs/GaAs
GL5PR40	Red	GaP
GL5HD40	Red	GaAsP/GaP
GL5HS40	Sunset orange	GaAsP/GaP
GL5HY40	Yellow	GaAsP/GaP
GL5EG40	Yellow-green	GaP

Outline Dimensions (Unit: mm)



Features

- $\phi 5\text{mm(T-1}\frac{3}{4}\text{)}$ all resin mold
- Colored transparency lens type
- High directivity

Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	GL5LR40	GL5PR40	GL5HD40	GL5EG40	Unit	
		GL5TR40		GL5HS40			
				GL5HY40			
Power dissipation	P	110	23	84	84	mW	
Continuous forward current	I _F	50	10	30	30	mA	
※1 Peak forward current	I _{FM}	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 _R	5	5	5	5	v	
Operating temperature	T _{opr}	-25 to +85				°C	
Storage temperature	T _{stg}	-25 to +100				°C	
※2 Soldering temperature	T _{sol}	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 GL5LR40 and GL5TR40

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

SHARP

GL5LR40 (Red) / GL5TR40 (Red)

(Ta=25°C)

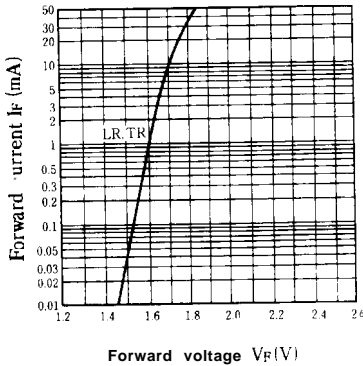
■ Electro-optical Characteristics

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL5LR40	I _F = 20mA	—	1.75	2.2	V
		GL5TR40	I _F = 20mA	—	1.75	2.2	
※3 Luminous intensity	I _v	GL5LR40	I _F = 20mA	600	1200	—	mcd
		GL5TR40	I _F = 20mA	200	500	—	
Peak emission wavelength	λ _p	GL5LR40	I _F = 200mA	—	660	—	'm
		GL5TR40	I _F = 20mA	—	660	—	
Spectrum radiation bandwidth	AA	GL5LR40	I _F = 20mA	—	20	—	'm
		GL5TR40	I _F = 20mA	—	20	—	
Reverse current	I _R	GL5LR40	V _R = 4V	—	—	10	μA
		GL5TR40	V _R = 4V	—	—	10	
Terminal capacitance	C _t	GL5LR40	V=0V f=1MHz	—	30	—	pF
		GL5TR40	V=0V f=1MHz	—	30	—	
Response frequency	f _c	GL5LR40	—	—	—	—	MHz
		GL5TR40	—	—	8	—	

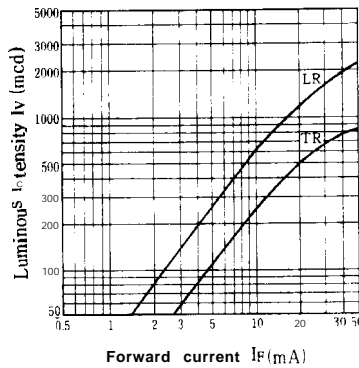
※3 Tolerance: ±30%

■ Characteristics Diagrams

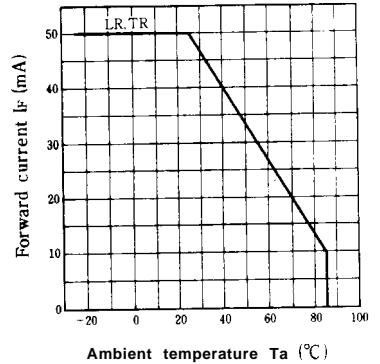
Forward Current vs. Forward Voltage (Ta = 25°C)



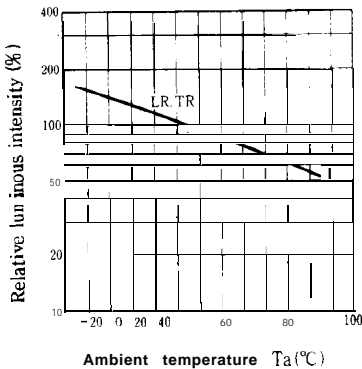
Luminous Intensity vs. Forward Current (Ta = 25°C)



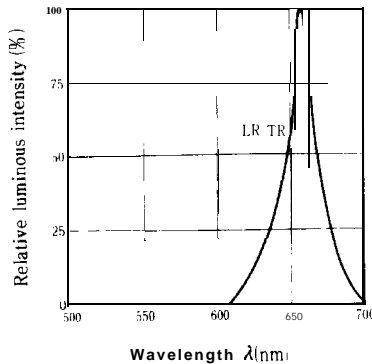
Forward Current Derating Curve



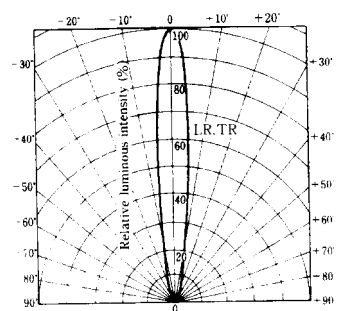
Relative Luminous Intensity vs. Ambient Temperature (If = 20mA)



Spectrum Distribution (Ta = 25°C)



Radiation Diagram (Ta = 25°C)



GL5PR40 (Red) / GL5HD40 (Red)

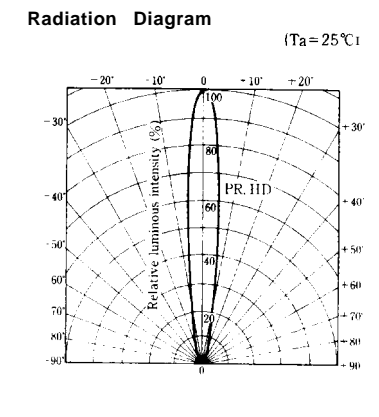
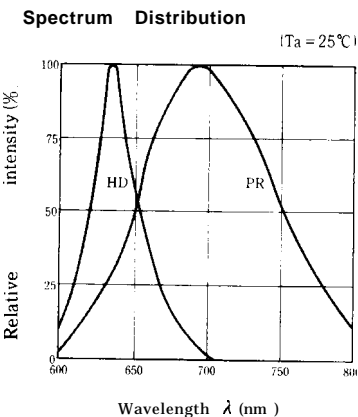
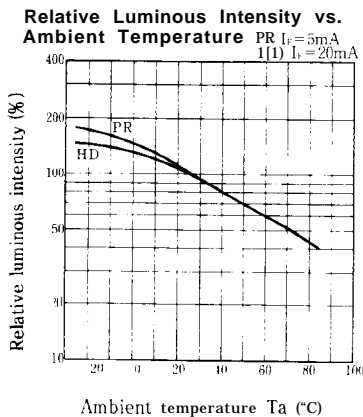
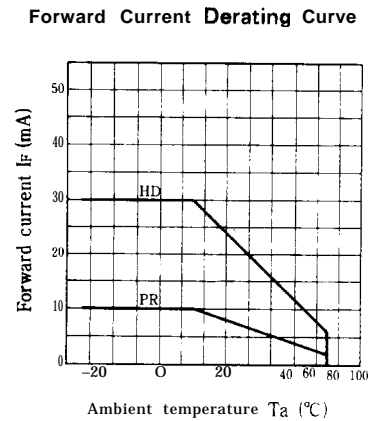
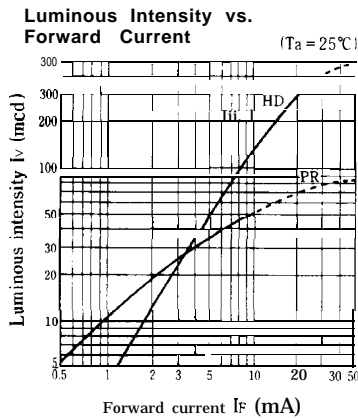
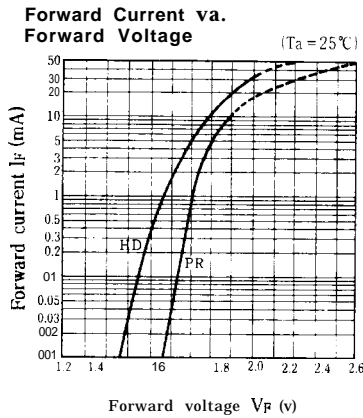
■ Electro-optical Characteristics

(Ta=25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL5PR40	I _F = 5mA	—	1.9	2.3	V
		GL5HD40	I _F = 20mA	—	2.0	2.8	
※3 Luminous intensity	I _v	GL5PR40	I _F = 5mA	10	35	—	mcd
		GL5HD40	I _F = 20mA	50	300	—	
Peak emission wavelength	λ _p	GL5PR40	I _F = 5mA	—	695	—	‘m
		GL5HD40	I _F = 20mA	—	635	—	
Spectrum radiation bandwidth	Δλ	GL5PR40	I _F = 5mA	—	100	—	‘m
		GL5HD40	I _F = 20mA	—	35	—	
Reverse current	I _R	GL5PR40	V _R = 4V	—	—	10	μA
		GL5HD40	V _R = 4V	—	—	10	
Terminal capacitance	C _t	GL5PR40	V = 5V f = 1MHz	—	55	—	pF
		GL5HD40	V = 0V f = 1MHz	—	20	—	
Response frequency	f _c	GL5PR40	—	—	4	—	‘Hz
		GL5HD40	—	—	4	—	

※3 Tolerance: ±30%

■ Characteristics Diagrams



GL5HS40 (Sunset orange) / GL5HY40 (Yellow)

■ Electro-optical Characteristics

(Ta = 25°C)

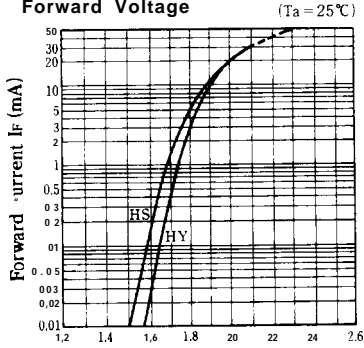
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL5HS40	I _F = 20mA	—	2.0	2.8	V
		GL5HY40	I _F = 20mA	—	2.0	2.8	
※3 Luminous intensity	I _v	GL5HS40	I _F = 20mA	50	300	—	'cd
		GL5HY40	I _F = 20mA	65	350	—	
Peak emission wavelength	λ _p	GL5HS40	I _F = 20mA	—	610	—	'm
		GL5HY40	I _F = 20mA	—	585	—	
Spectrum radiation bandwidth	Δλ	GL5HS40	I _F = 20mA	—	35	—	'm
		GL5HY40	I _F = 20mA	—	30	—	
Reverse current	I _R	GL5HS40	V _R = 4V	—	—	10	μA
		GL5HY40	V _R = 4V	—	—	10	
Terminal capacitance	C _t	GL5HS40	V = 0V f = 1MHz	—	15	—	pF
		GL5HY40	V = 0V f = 1MHz	—	35	—	
Response frequency	f _c	GL5HS40	—	—	4	—	MHz
		GL5HY40	—	—	4	—	

※3 Tolerance: ±30%

3

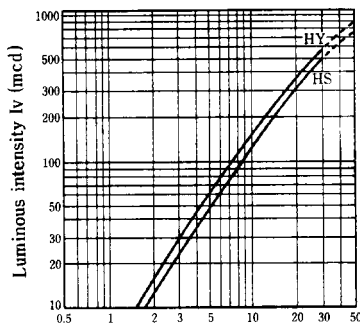
■ Characteristics Diagrams

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



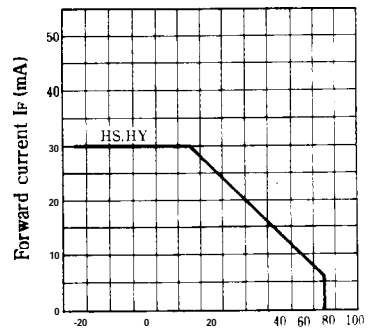
Forward voltage V_F (V)

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



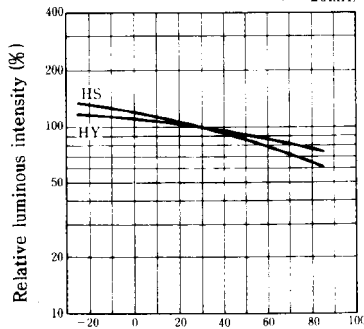
Forward current I_F (mA)

Forward Current Derating Curve



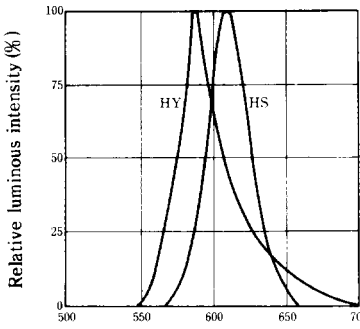
Ambient temperature Ta (°C)

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



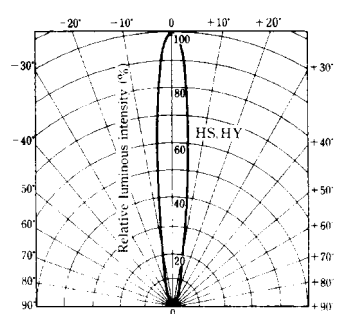
Ambient temperature Ta (°C)

Spectrum Distribution (Ta = 25°C)



Wavelength λ (nm)

Radiation Diagram (Ta = 25°C)



GL5EG40 (Yellow-green)

■ Electro-optical Characteristics

(Ta=25°C)

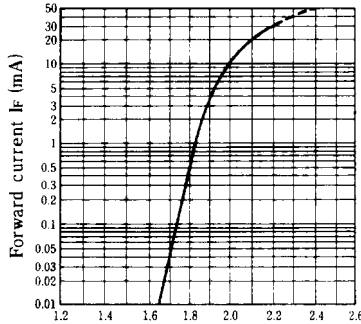
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	GL5EG40	$I_F = 20\text{mA}$	—	2.1	2.8	V
*3 Luminous intensity	I_v	GL5EG40	$I_F = 20\text{mA}$	100	300	—	mcd
Peak emission wavelength	λ_p	GL5EG40	$I_F = 20\text{mA}$	—	565	—	nm
Spectrum radiation bandwidth	$\Delta\lambda$	GL5EG40	$I_F = 20\text{mA}$	—	30	—	nm
Reverse current	I_R	GL5EG40	$V_R = 4\text{V}$	—	—	10	μA
Terminal capacitance	C_t	GL5EG40	$V = 0\text{V}$ $f = 1\text{MHz}$	—	35	—	pF
Response frequency	f_c	GL5EG40	—	—	4	—	MHz

*3 Tolerance: $\pm 30\%$

■ Characteristics Diagrams

Forward Current vs. Forward Voltage

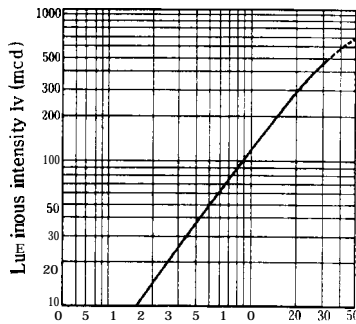
(Ta = 25°C)



Forward voltage V_F (V)

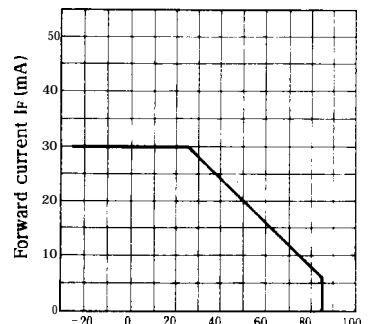
Luminous Intensity vs. Forward Current

(Ta = 25°C)



Forward current I_F (mA)

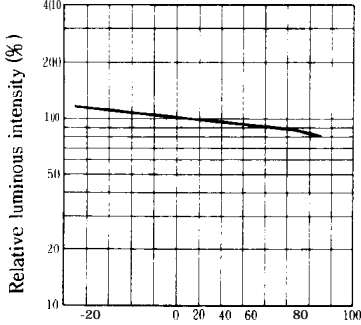
Forward Current Derating Curve



Ambient temperature T_a (°C)

Relative Luminous Intensity vs. Ambient Temperature

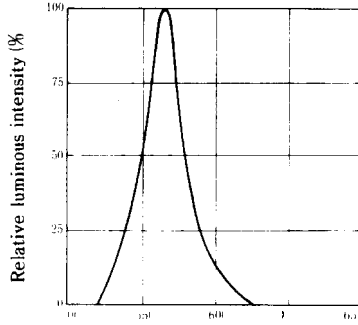
($I_F = 20\text{mA}$)



Ambient temperature T_a (°C)

Spectrum Distribution

(Ta = 25°C)



Wavelength λ (nm)

Radiation Diagram

(Ta = 25°C)

