

GL5□□41 Series Lamps

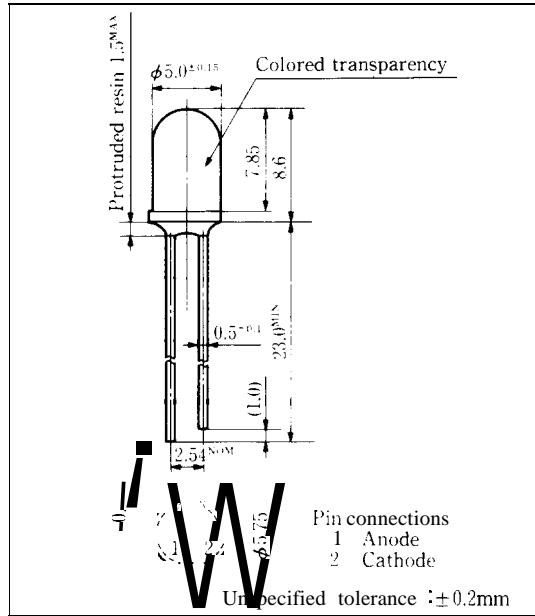
φ5mm(T-1³/₄) Cylinder Type 'ED

Model No.

GL5LR41 Red (High-luminosity)	GaAlAs/GaAs
GL5PR41 Red	GaP
GL5HD41 Red	GaAsP/GaP
GL5HS41 Sunset orange	GaAsP/GaP
GL5HY41 Yellow	GaAsP/GaP
GL5EG41 Yellow-green	GaP
GL5KG41 Green	GaP

Outline Dimensions

(Unit: mm)



Features

- φ5mm(T-1³/₄) all resin mold
- Colored transparency lens type
- For backlighting

Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	GL5LR41	GL5PR41	GL5HD41	GL5EG41	Unit	
				GL5HS41	GL5KG41		
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 ≤ 1ms for GL5LR41

※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 SHARPS devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARPS device

GL5LR41 (Red)

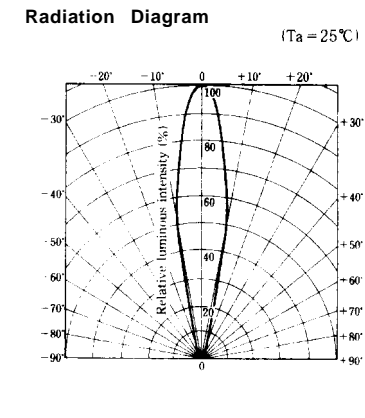
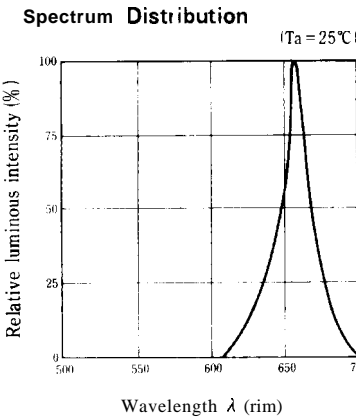
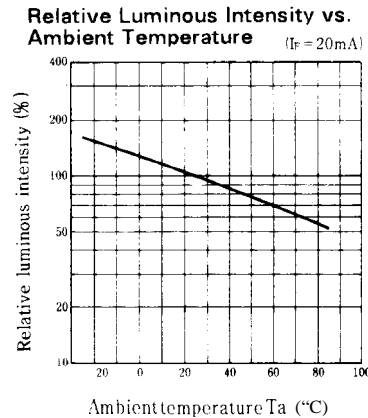
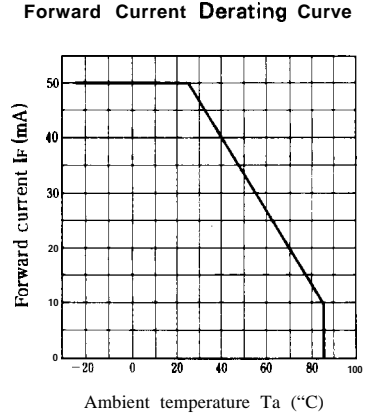
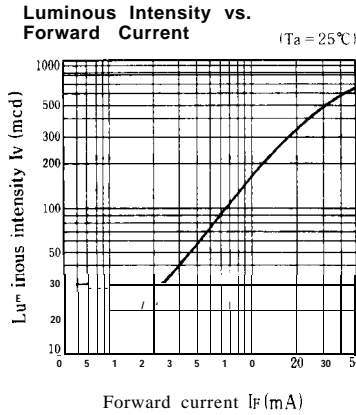
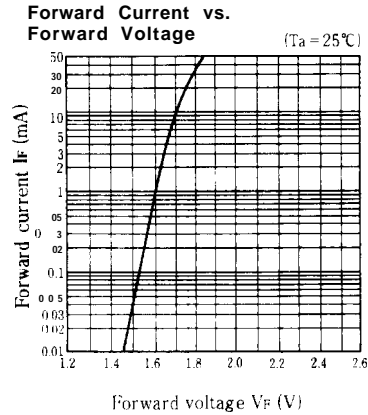
Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL5LR41	I _F = 20mA	—	1.75	2.2	V
※3 Luminous intensity	I _v	GL5LR41	I _F = 20mA	170	340	—	mcd
Peak emission wavelength	λ _p	GL5LR41	I _F = 20mA	—	660	—	nm
Spectrum radiation bandwidth	Δλ	GL5LR41	I _F = 20mA	—	20	—	nm
Reverse current	I _R	GL5LR41	V _R = 4V	—	—	10	μA
Terminal capacitance	C _t	GL5LR41	V = 0V f = 1 MHz	—	30	—	pF
Response frequency	f _c	GL5LR41	—	—	8	—	MHz

※3 Tolerance: ±30%

Characteristics Diagrams



GL5PR41 (Red) / GL5HD41 (Red)

■ Electro-optical Characteristics

(Ta=25°C)

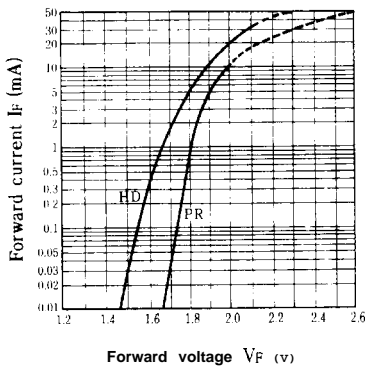
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL5PR41	I _F =5mA	—	1.9	2.3	V
		GL5HD41	I _F =20mA	—	2.0	2.8	
※3 Luminous intensity	I _V	GL5PR41	I _F =5mA	5.0	15	—	mcd
		GL5HD41	I _F =20mA	25	150	—	
Peak emission wavelength	λ _p	GL5PR41	I _F =5mA	—	695	—	‘m
		GL5HD41	I _F =20mA	—	635	—	
Spectrum radiation bandwidth	Δλ	GL5PR41	I _F =5mA	—	100	—	‘m
		GL5HD41	I _F =20mA	—	35	—	
Reverse current	I _R	GL5PR41	V _R =4V	—	—	10	μA
		GL5HD41	V _R =4V	—	—	10	
Terminal capacitance	C _t	GL5PR41	V=0V f=1 MHz	—	55	—	pF
		GL5HD41	V=0V f=1 MHz	—	20	—	
Response frequency	f _c	GL5PR41	—	—	4	—	‘Hz
		GL5HD41	—	—	4	—	

※3 Tolerance: ±30%

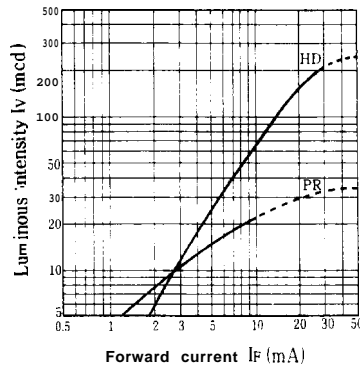
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■ Characteristics Diagrams

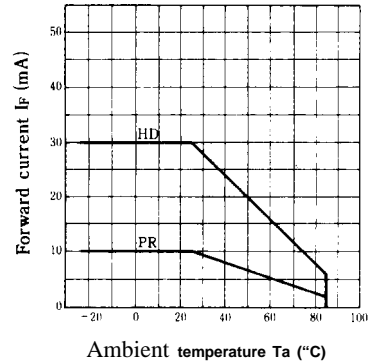
Forward Current vs. Forward Voltage (Ta = 25°C)



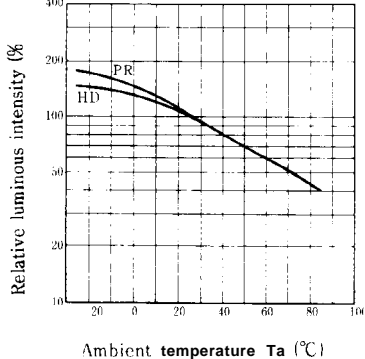
Luminous Intensity vs. Forward Current (Ta = 25°C)



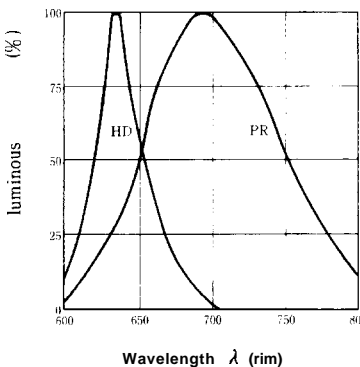
Forward Current Derating Curve



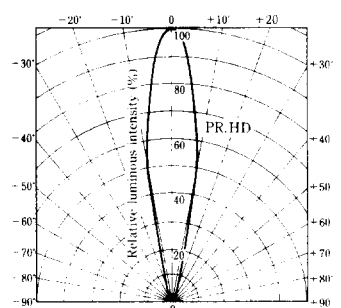
Relative Luminous Intensity vs. Ambient Temperature, PR: I_F=5mA, HD: I_F=20mA



Spectrum Distribution (Ta = 25°C)



Radiation Diagram (Ta = 25°C)



GL5HS41 (Sunset orange) / GL5HY41 (Yellow)

■ **Electro-optical** Characteristics

($T_a = 25^\circ\text{C}$)

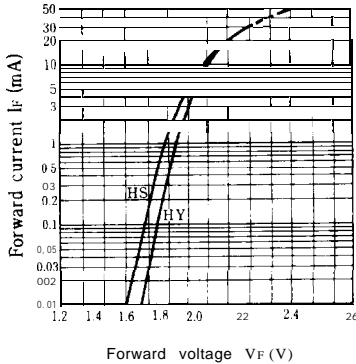
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	GL5HS41	$I_F = 20\text{mA}$	—	2.0	2.8	V
		GL5HY41	$I_F = 20\text{mA}$	—	2.0	2.8	
※3 Luminous intensity	I_V	GL5HS41	$I_F = 20\text{mA}$	30	100	—	'cd
		GL5HY41	$I_F = 20\text{mA}$	30	100	—	
Peak emission wavelength	λ_p	GL5HS41	$I_F = 20\text{mA}$	—	610	—	'm
		GL5HY41	$I_F = 20\text{mA}$	—	585	—	
Spectrum radiation bandwidth	$\Delta\lambda$	GL5HS41	$I_F = 20\text{mA}$	—	35	—	'm
		GL5HY41	$I_F = 20\text{mA}$	—	30	—	
Reverse current	I_R	GL5HS41	$V_R = 4\text{V}$	—	—	10	μA
		GL5HY41	$V_R = 4\text{V}$	—	—	10	
Terminal capacitance	C_t	GL5HS41	$V = 0\text{V}$ $f = 1\text{ MHz}$	—	15	—	pF
		GL5HY41	$V = 0\text{V}$ $f = 1\text{ MHz}$	—	35	—	
Response frequency	f^*	GL5HS41	—	—	4	—	'Hz
		GL5HY41	—	—	4	—	

※3 Tolerance: $\pm 30\%$

■ **Characteristics Diagrams**

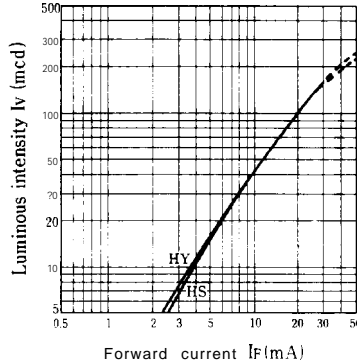
Forward Current vs. Forward Voltage

($T_a = 25^\circ\text{C}$)

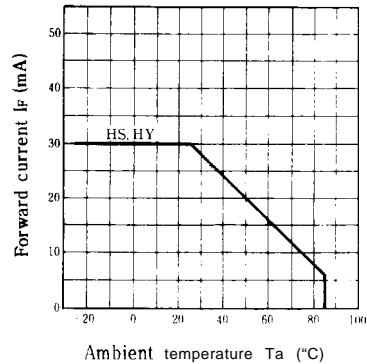


Luminous Intensity vs. Forward Current

($T_a = 25^\circ\text{C}$)

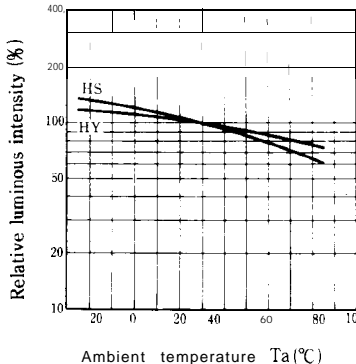


Forward Current Derating Curve



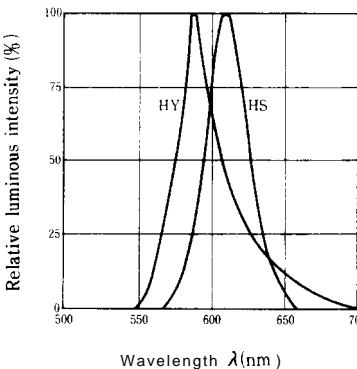
Relative Luminous Intensity vs. Ambient Temperature

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



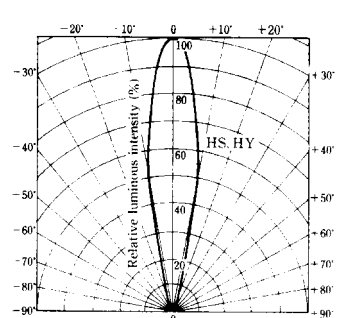
Spectrum Distribution

($T_a = 25^\circ\text{C}$)



Radiation Diagram

($T_a = 25^\circ\text{C}$)



GL5EG41 (Yellow-green) / GL5KG41 (Green)

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL5EG41	I _F = 20mA	—	2.1	2.8	V
		GL5KG41	I _F = 20mA	—	2.1	2.8	
※3 Luminous intensity	I _v	GL5EG41	I _F = 20mA	50	160	—	mcd
		GL5KG41	I _F = 20mA	35	70	—	
Peak emission wavelength	λ _p	GL5EG41	I _F = 20mA	—	565	—	nm
		GL5KG41	I _F = 20mA	—	555	—	
Spectrum radiation bandwidth	Δλ	GL5EG41	I _F = 20mA	—	30	—	nm
		GL5KG41	I _F = 20mA	—	25	—	
Reverse current	I _R	GL5EG41	V _R = 4V	—	—	10	μA
		GL5KG41	V _R = 4V	—	—	10	
Terminal capacitance	C _t	GL5EG41	V = 0V f = 1 MHz	—	35	—	pF
		GL5KG41	V = 0V f = 1 MHz	—	40	—	
Response frequency	f _c	GL5EG41	—	—	4	—	MHz
		GL5KG41	—	—	4	—	

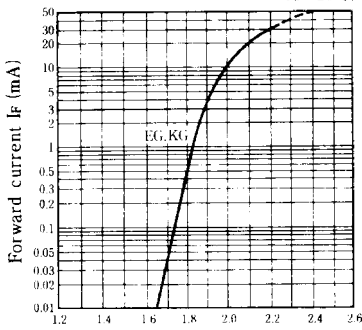
※3 Tolerance: ±30%

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■ Characteristics Diagrams

Forward Current vs. Forward Voltage

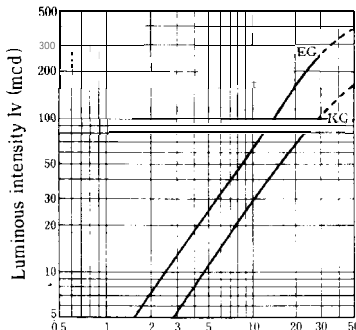
(Ta = 25°C)



Forward voltage V_F (V)

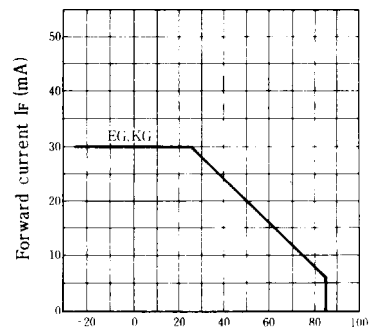
Luminous Intensity vs. Forward Current

(Ta = 25°C)



Forward current I_F (mA)

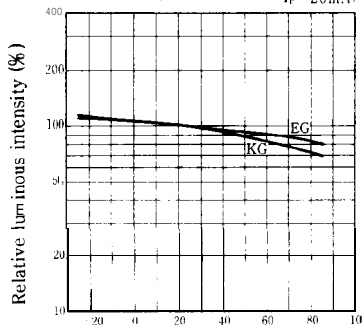
Forward Current Derating Curve



Ambient temperature T_a (°C)

Relative Luminous Intensity vs. Ambient Temperature

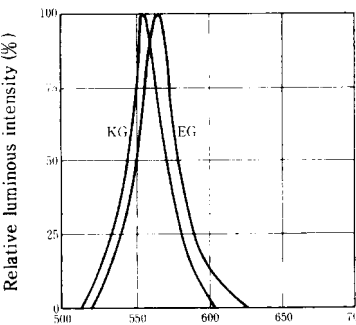
(I_F = 20mA)



Ambient temperature T_a (°C)

Spectrum Distribution

(Ta = 25°C)



Wavelength λ (nm)

Radiation Diagram

(Ta = 25°C)

