

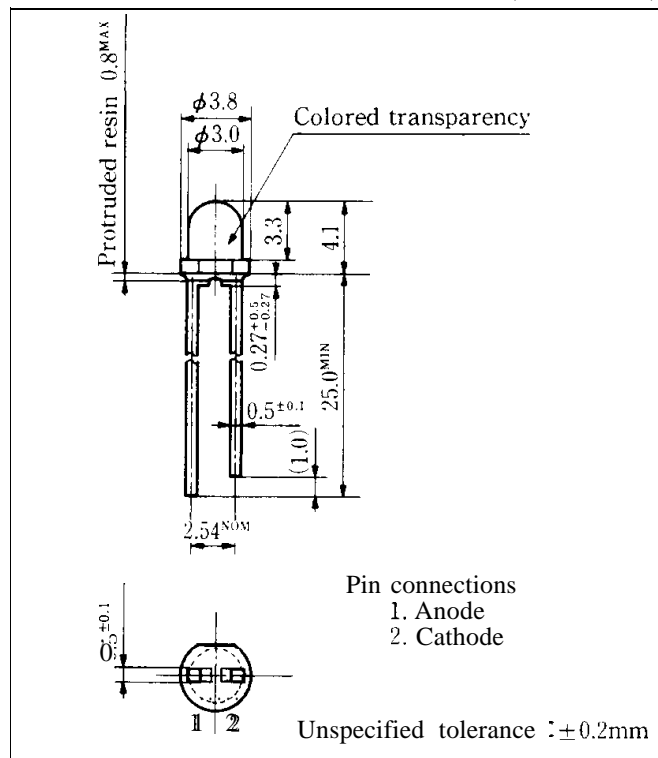
GL3□□43 Series ϕ 3mm (T-1) Cylinder Type LED Lamps

Model No.

GL3UR43 Red (Super-luminosity)	GaAlAs/GaAlAs
GL3LR43 Red (High-luminosity)	GaAlAs/GaAs
GL3TR43 Red (High-luminosity)	GaAlAs/GaAs
GL3PR43 Red	GaP
GL3HD43 Red	GaAsP/GaP
GL3HS43 Sunset orange	GaAsP/GaP
GL3HY43 Yellow	GaAsP/GaP
GL3EG43 Yellow-green	GaP
GL3KG43 Green	GaP

Outline Dimensions

(Unit: mm)



Features

- ϕ 3mm (T-1) all resin mold
- Colored transparency lens type
- Wide viewing angle

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Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	GL3UR43	GL3LR43	GL3PR43	GL3HD43	GL3EG43	Unit	
			GL3TR43		GL3HS43	GL3KG43		
Power dissipation	P	75	110	23	84	84	mW	
Continuous forward current	I _F	30	50	10	30	30	mA	
※1 Peak forward current	I _{FM}	50	300	50	50	50	mA	
Derating factor	DC	—	0.40	0.67	0.13	0.40	0.40	mA/°C
	Pulse	—	0.67	4.00	0.67	0.67	0.67	mA/°C
Reverse voltage	V _R	4	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 1ms for GL3LR43 and GL3TR43

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

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"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."

GL3UR43 (Red)

Electro-optical Characteristics

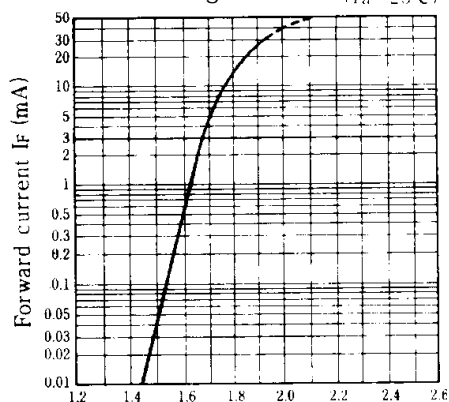
(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	GL3UR43	$I_F = 20\text{mA}$	-	185	2.5	V
*3 Luminous intensity	I_v	GL3UR43	$I_F = 20\text{mA}$	50	100	-	mcd
Peak emission wavelength	λ_p	GL3UR43	$I_F = 20\text{mA}$	-	660	-	nm
Spectrum radiation bandwidth	$\Delta\lambda$	GL3UR43	$I_F = 20\text{mA}$	-	20	-	nm
Reverse current	I_R	GL3UR43	$V_R = 3\text{V}$	-	-	100	μA
Terminal capacitance	C_t	GL3UR43	$V = 0\text{V}$ $f = \text{MHz}$	-	25	-	pF
Response frequency	f_c	GL3UR43	-	-	8	-	MHz

*3 Tolerance: ±30%

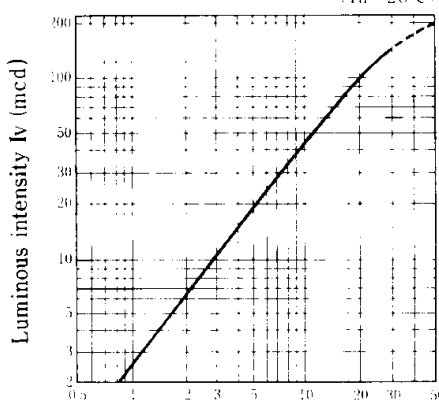
Characteristics Diagrams

Forward Current vs. Forward Voltage



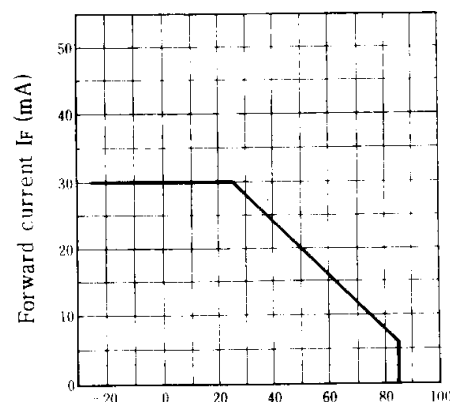
Forward voltage V_F (V)

Luminous Intensity vs. Forward Current



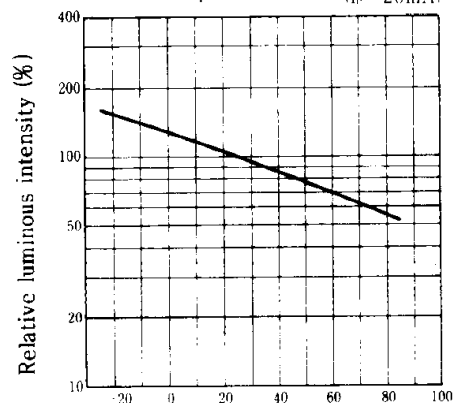
Forward current I_F (mA)

Forward Current Derating Curve



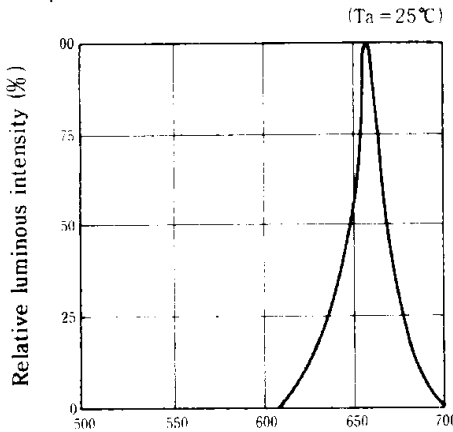
Ambient temperature T_a (°C)

Relative Luminous Intensity vs. Ambient Temperature



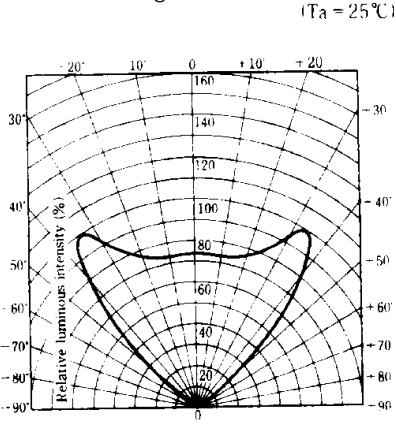
Ambient temperature T_a (°C)

Spectrum Distribution



Wavelength λ (nm)

Radiation Diagram



GL3LR43 (Red) / GL3TR43 (Red)

■ Electro-optical Characteristics

(Ta=25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	GL3LR43	$I_F=20\text{mA}$	—	1.75	2.2	V
		GL3TR43	$I_F=20\text{mA}$		1.75	2.2	
*3 Luminous intensity	I_V	GL3LR43	$I_F=20\text{mA}$	20	40	—	'cd
		GL3TR43	$I_F=20\text{mA}$	10	20	—	
Peak emission wavelength	λ_p	GL3LR43	$I_F=20\text{mA}$	—	660	—	'm
		GL3TR43	$I_F=20\text{mA}$		660	—	
Spectrum radiation bandwidth	$\Delta\lambda$	GL3LR43	$I_F=20\text{mA}$		20	—	'm
		GL3TR43	$I_F=20\text{mA}$	—	20	—	
Reverse current	I_R	GL3LR43	$V_R=4\text{V}$		—	10	μA
		GL3TR43	$V_R=4\text{V}$	—	—	10	
Terminal capacitance	C_t	GL3LR43	$V=0\text{V}$ $f=1\text{MHz}$	—	30	—	pF
		GL3TR43	$V=0\text{V}$ $f=1\text{MHz}$	—	30	—	
Response frequency	f_c	GL3LR43	—	—	8	—	MHz
		GL3TR43	—	—	8	—	

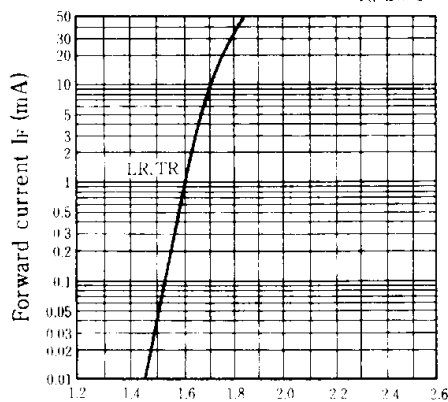
*3 Tolerance: $\pm 30\%$

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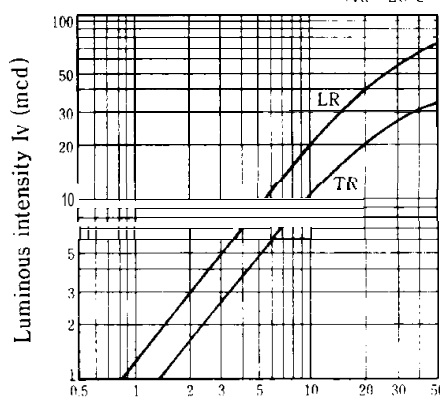
■ Characteristics Diagrams

Forward Current vs.
Forward Voltage

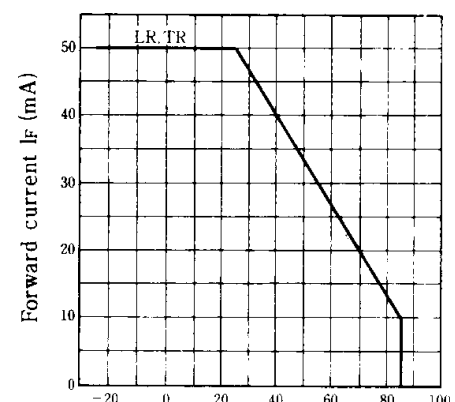
(Ta=25°C)

Forward voltage V_F (V)Luminous Intensity vs.
Forward Current

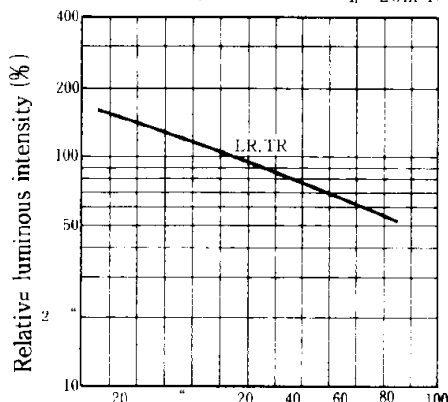
(Ta=25°C)

Forward current I_F (mA)

Forward Current Derating Curve

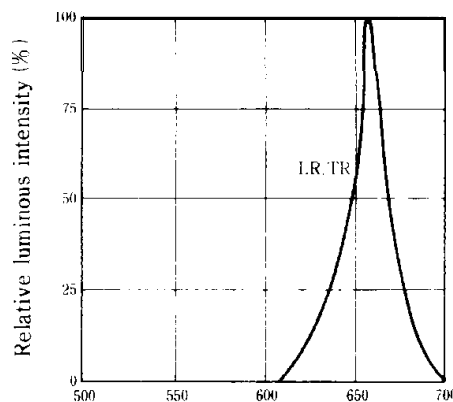
Ambient temperature, T_a (°C)Relative Luminous Intensity vs.
Ambient Temperature

(If=20mA)

Ambient temperature T_a (°C)

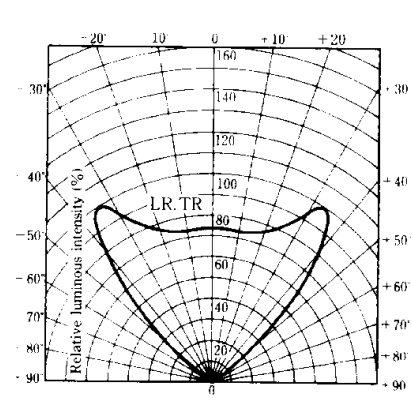
Spectrum Distribution

(Ta=25°C)

Wavelength λ (nm)

Radiation Diagram

(Ta=25°C)



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GL3PR43 (Red) / GL3HD43 (Red)

■ Electro-optical Characteristics

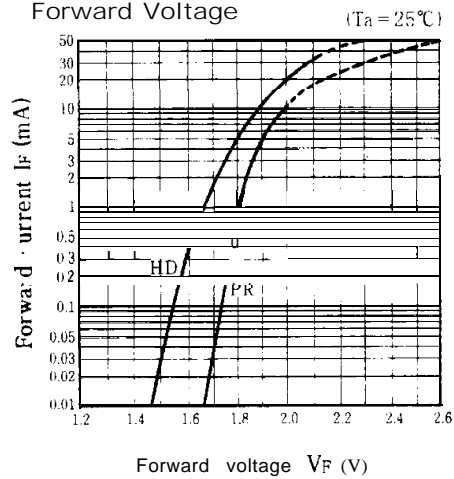
(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL3PR43	I _F = 5mA	—	1.9	2.3	V
		GL3HD43	I _F = 20mA	—	2.0	2.8	
※3 Luminous intensity	I _v	GL3PR43	I _F = 5mA	1.0	3.0	—	mcd
		GL3HD43	I _F = 20mA	7.0	25	—	
Peak emission wavelength	λ _p	GL3PR43	I _F = 5mA	—	695	—	‘m
		GL3HD43	I _F = 20mA	—	635	—	
Spectrum radiation bandwidth	Δλ	GL3PR43	I _F = 5mA	—	100	—	‘m
		GL3HD43	I _F = 20mA	—	35	—	
Reverse current	I _R	GL3PR43	V _R = 4V	—	—	10	μA
		GL3HD43	V _R = 4V	—	—	10	
Terminal capacitance	C _t	GL3PR43	V = 0V f = 1MHz	—	55	—	pF
		GL3HD43	V = 0V f = 1MHz	—	20	—	
Response frequency	f _c	GL3PR43	—	—	4	—	MHz
		GL3HD43	—	—	4	—	

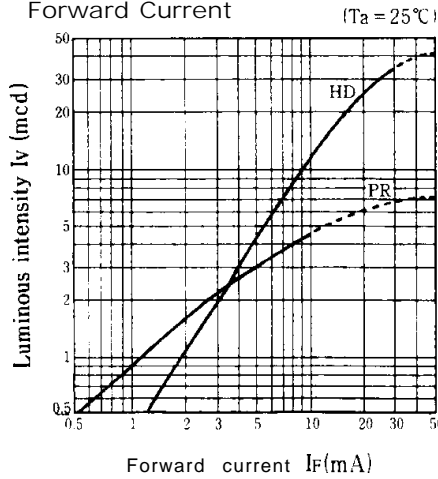
※3 Tolerance: ±30%

■ Characteristics Diagrams

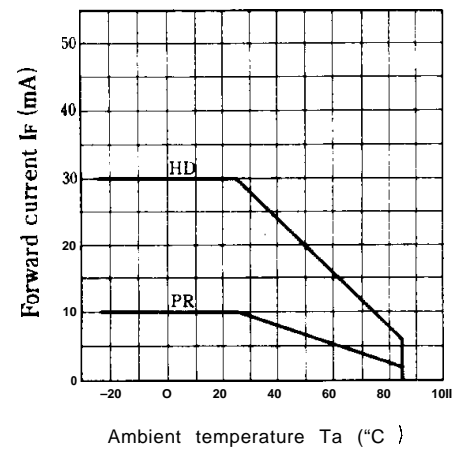
Forward Current vs. Forward Voltage



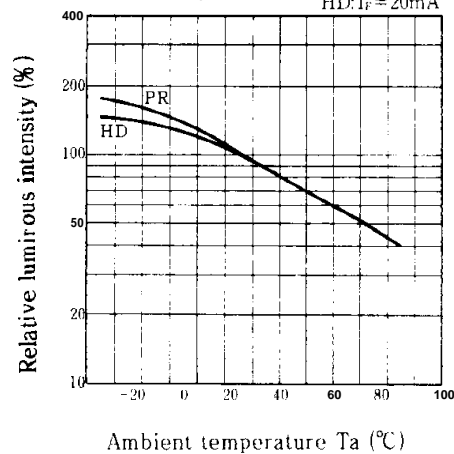
Luminous Intensity vs. Forward Current



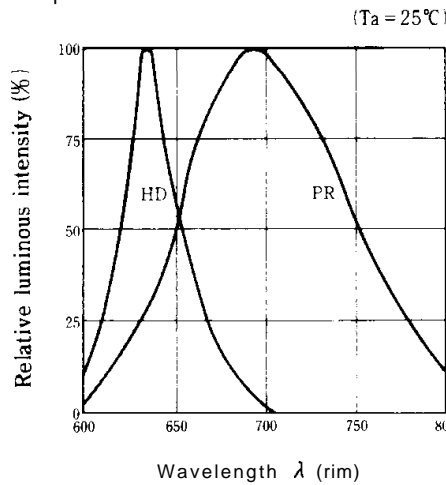
Forward Current Derating Curve



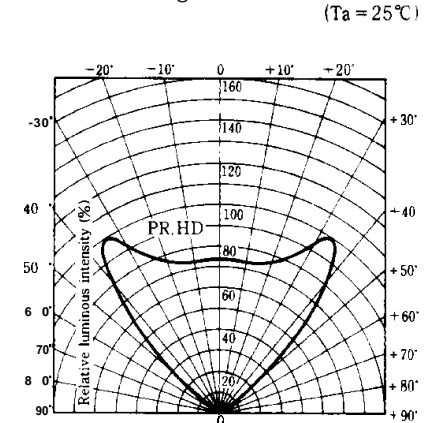
Relative Luminous Intensity vs. Ambient Temperature, PR: I_F = 5mA, HD: I_F = 20mA



Spectrum Distribution



Radiation Diagram



GL3HS43 (Sunset orange) / GL3HY43 (Yellow)

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL3HS43	I _F = 20mA	—	2.0	2.8	V
		GL3HY43	I _F = 20mA	—	2.0	2.8	
*3 Luminous intensity	I _v	GL3HS43	I _F = 20mA	7.0	25	—	'cd
		GL3HY43	I _F = 20mA	7.0	25	—	
Peak emission wavelength	λ _p	GL3HS43	I _F = 20mA	—	610	—	'm
		GL3HY43	I _F = 20mA	—	585	—	
Spectrum radiation bandwidth	Δλ	GL3HS43	I _F = 20mA	—	35	—	'm
		GL3HY43	I _F = 20mA	—	30	—	
Reverse current	I _R	GL3HS43	V _R = 4V	—	—	10	μA
		GL3HY43	V _R = 4V	—	—	10	
Terminal capacitance	C _t	GL3HS43	V = 0V f = 1 MHz	—	15	—	pF
		GL3HY43	V = 0V f = 1 MHz	—	35	—	
Response frequency	f _c	GL3HS43	—	—	4	—	'Hz
		GL3HY43	—	—	4	—	

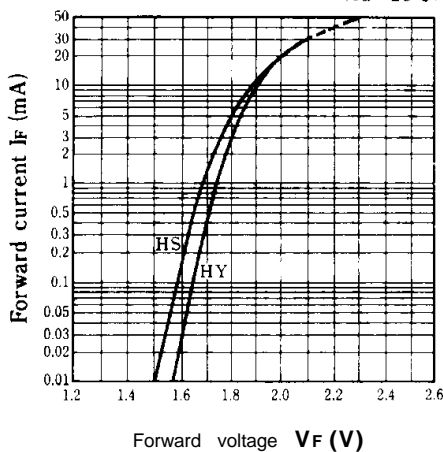
*3 Tolerance: ±30%

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■ Characteristics Diagrams

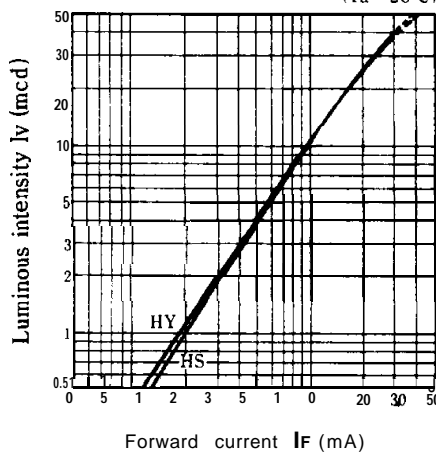
Forward Current vs. Forward Voltage

(Ta = 25°C)

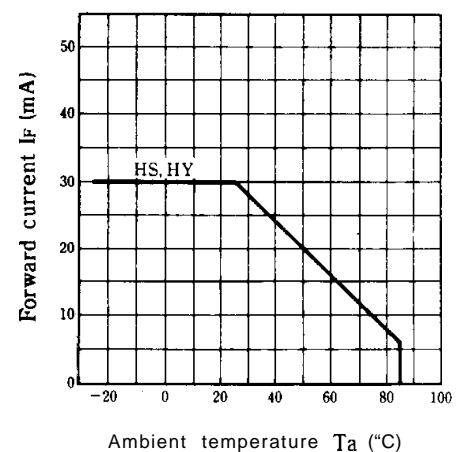


Luminous Intensity vs. Forward Current

(Ta = 25°C)

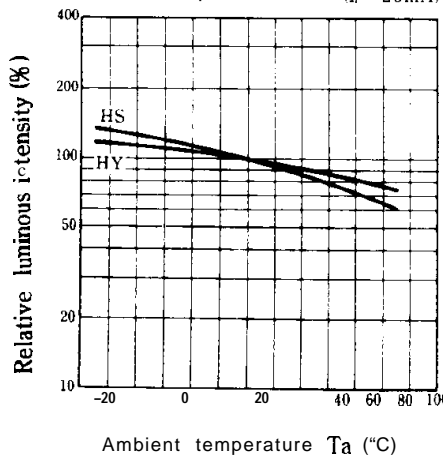


Forward Current Derating Curve



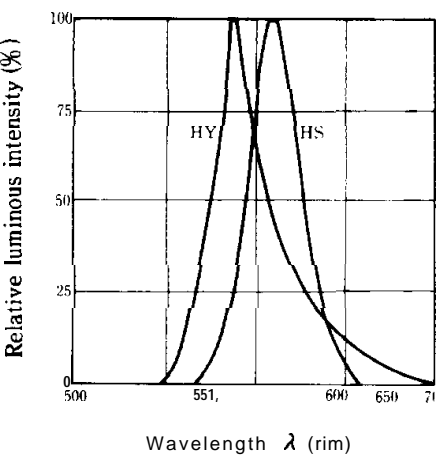
Relative Luminous Intensity vs. Ambient Temperature

(I_F = 20mA)



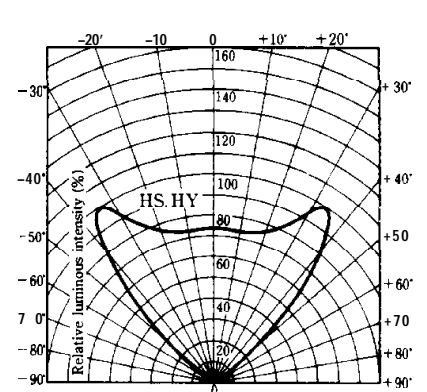
Spectrum Distribution

(Ta = 25°C)



Radiation Diagram

(Ta = 25°C)



GL3EG43 (Yellow-green) / GL3KG43 (Green)

Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL3EG43	I _F = 20mA		2.1	2.8	V
		GL3KG43	I _F = 20mA	—	2.1	2.8	
※3 Luminous intensity	I _v	GL3EG43	I _F = 20mA	10	25	—	'cd
		GL3KG43	I _F = 20mA	8.0	20	—	
Peak emission wavelength	λ _p	GL3EG43	I _F = 20mA	—	565	—	nm
		GL3KG43	I _F = 20mA	—	555	—	
Spectrum radiation bandwidth	Δλ	GL3EG43	I _F = 20mA	—	30	—	'm
		GL3KG43	I _F = 20mA	—	25	—	
Reverse current	I _R	GL3EG43	V _R = 4V	—	—	10	μA
		GL3KG43	V _R = 4V	—	—	10	
Terminal capacitance	C _t	GL3EG43	V = 0V f = 1MHz	—	35	—	pF
		GL3KG43	V = 0V f = 1MHz	—	40	—	
Response frequency	f _c	GL3EG43	—	—	4	—	MHz
		GL3KG43	—	—	4	—	

※3 Tolerance: ±30%

Characteristics Diagrams

