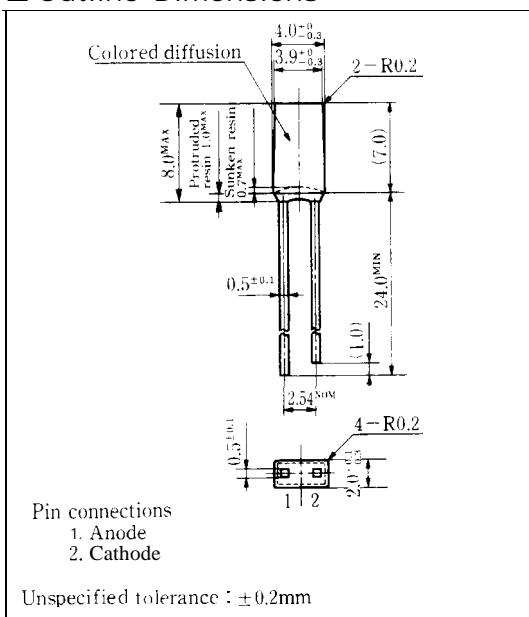


GL8□□42 Series Rectangle Type LED Lamps

Model No.

GL8LR42	Red (High-luminosity)	GaAlAs/GaAs
GL8TR42	Red (High-luminosity)	GaAlAs/GaAs
GL8PR42	Red	GaP
GL8HD42	Red	GaAsP/GaP
GL8HY42	Yellow	GaAsP/GaP
GL8EG42	Yellow-green	GaP
GL8KG42	Green	GaP

Outline Dimensions (Unit: mm)



Features

- 1.8mm×3.9mm rectangle type all resin mold
- Colored diffusion lens type

Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	GL8LR42	GL8PR42	GL8HD42	GL8EG42	Unit	
		GL8TR42		GL8HY42	GL8KG42		
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 _{ctr}	-25 to +100				°C	
*2 Soldering temperature	T _s	260 (within 5 seconds)				°C	

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

Duty ratio = 1/16, Pulse width ≤ 1ms for GL8LR42 and GL8TR42

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

SHARP

GL8LR42 (Red) / GL8TR42 (Red)

■ **Electro-optical Characteristics**

(Ta = 25°C)

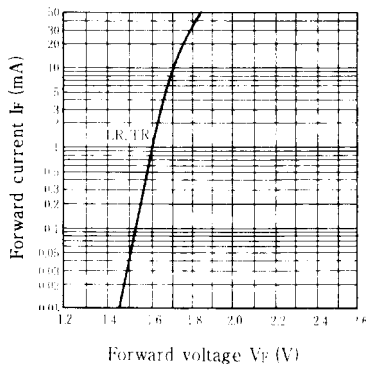
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL8LR42	I _F = 20mA		1.75	2.2	V
		GL8TR42	I _F = 20mA		1.75	2.2	
*3 Luminous intensity	I _v	GL8LR42	I _F = 20mA	3.0	8.0	—	mcd
		GL8TR42	I _F = 20mA	2.0	4.0	—	
Peak emission wavelength	λ _p	GL8LR42	I _F = 20mA		660	—	‘m
		GL8TR42	I _F = 20mA		—	660	
Spectrum radiation bandwidth	Δλ	GL8LR42	I _F = 20mA		20	—	‘m
		GL8TR42	I _F = 20mA		—	20	
Reverse current	I _R	GL8LR42	V _R = 4V			10	μA
		GL8TR42	V _R = 4V		—	10	
Terminal capacitance	C _t	GL8LR42	V = 0V f = 1MHz		30	—	pF
		GL8TR42	V = 0V f = 1 MHz		—	30	
Response frequency	f _t	GL8LR42			8	—	MHz
		GL8TR42			—	8	

*3 Tolerance: ±30%

■ **Characteristics Diagrams**

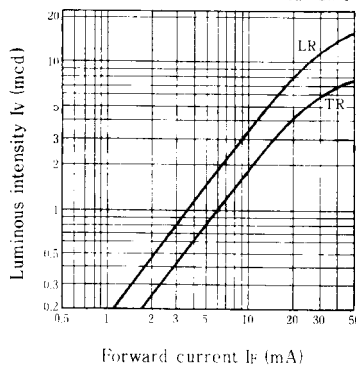
Forward Current vs. Forward Voltage

(Ta = 25°C)

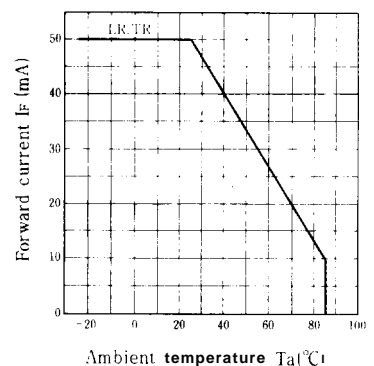


Luminous Intensity vs. Forward Current

(Ta = 25°C)

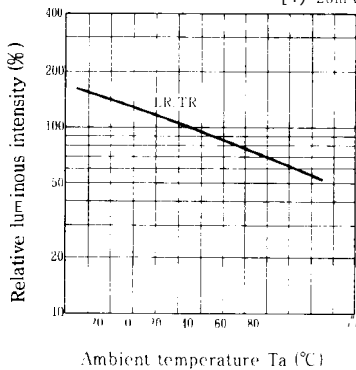


Forward Current Derating Curve



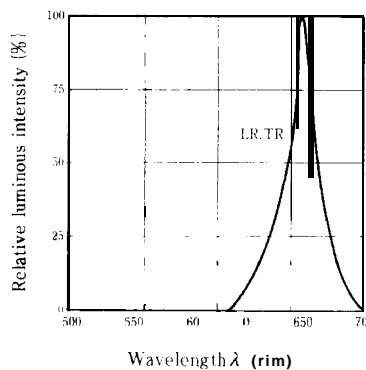
Relative Luminous Intensity vs. Ambient Temperature

[1] 20mA



Spectrum Distribution

(Ta = 25°C)



GL8PR42 (Red) / GL8HD42 (Red)

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL8PR42	I _F = 5mA	-	1.9	2.3	V
		GL8HD42	I _F = 20mA	-	2.0	2.8	
※3 Luminous intensity	I _v	GL8PR42	I _F = 5mA	0.70	0.70	-	mcd
		GL8HD42	I _F = 20mA	2.0	5.0	-	
Peak emission wavelength	λ _p	GL8PR42	I _F = 5mA	-	695	-	nm
		GL8HD42	I _F = 20mA	-	635	-	
Spectrum radiation bandwidth	Δλ	GL8PR42	I _F = 5mA	-	100	-	nm
		GL8HD42	I _F = 20mA	-	35	-	
Reverse current	I _R	GL8PR42	V _R = 4V	-	-	10	μA
		GL8HD42	V _R = 4V	-	-	10	
Terminal capacitance	cl	GL8PR42	V = 0V f = 1MHz	-	55	-	pF
		GL8HD42	V = 0V f = 1MHz	-	20	-	
Response frequency	f _c	GL8PR42	-	-	4	-	MHz
		GL8HD42	-	-	4	-	

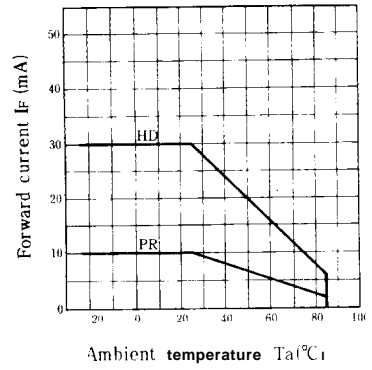
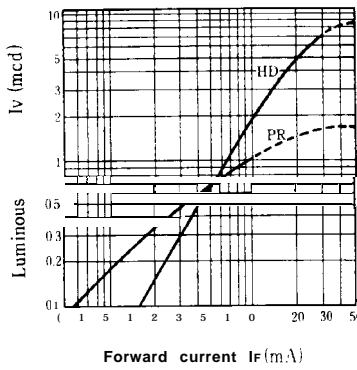
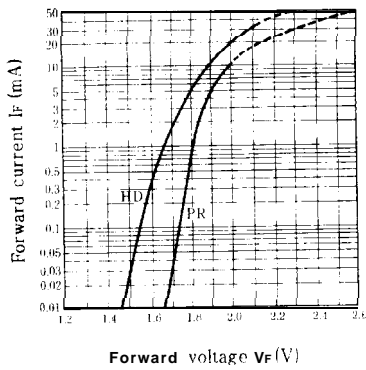
※3 Tolerance: ±30%

■ Characteristics Diagrams

Forward Current vs. Forward Voltage

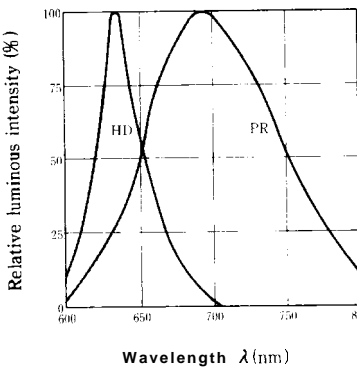
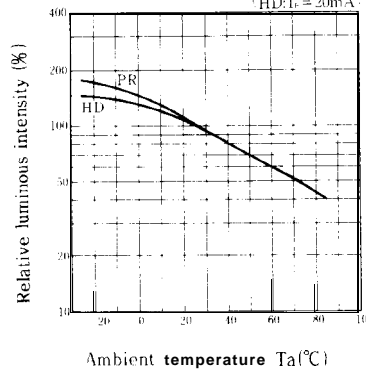
Luminous Intensity vs. Forward Current

Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature

Spectrum Distribution



3

GL8HY42 (Yellow)

■ Electro-optical Characteristics

(Ta = 25°C)

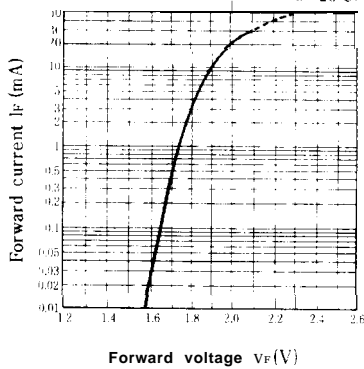
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL8HY42	I _F = 20mA	—	2.0	2.8	“
*3 Luminous intensity	I _v	GL8HY42	I _F = 20mA	3.0	6.0	—	mcd
Peak emission wavelength	λ _p	GL8HY42	I _F = 20mA	—	585	—	nm
Spectrum radiation bandwidth	Δλ	GL8HY42	I _F = 20mA	—	30	—	nm
Reverse current	I _R	GL8HY42	V _R = 4V	—	—	10	μA
Terminal capacitance	C _t	GL8HY42	V=0V f=1 MHz	—	35	—	pF
Response frequency	f _c	GL8HY42	—	—	4	—	MHz

*3 Tolerance: ±30%

■ Characteristics Diagrams

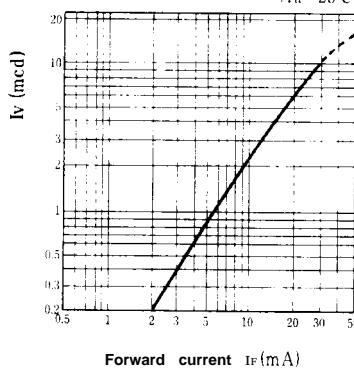
Forward Current vs. Forward Voltage

(Ta = 25°C)

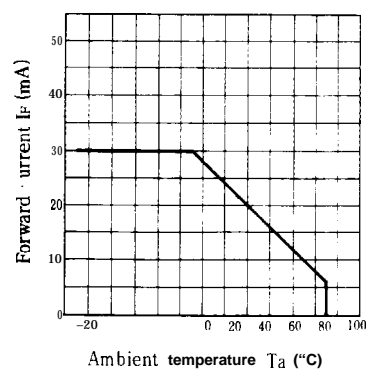


Luminous Intensity vs. Forward Current

(Ta = 25°C)

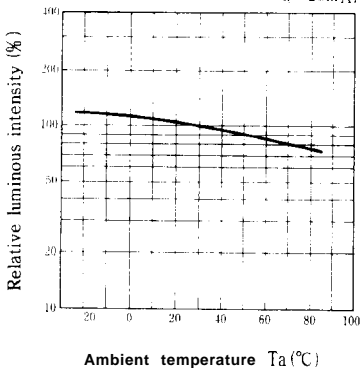


Forward Current Derating Curve



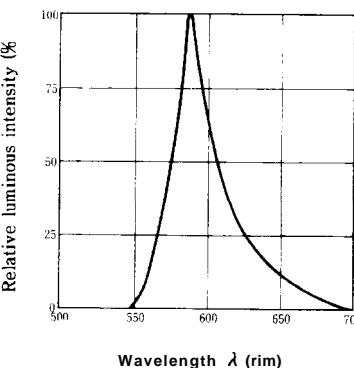
Relative Luminous Intensity vs. Ambient Temperature

(I_F = 20mA)



Spectrum Distribution

(Ta = 25°C)



GL8EG42 (Yellow-green) / GL8KG42 (Green)

■ Electro-optical Characteristics

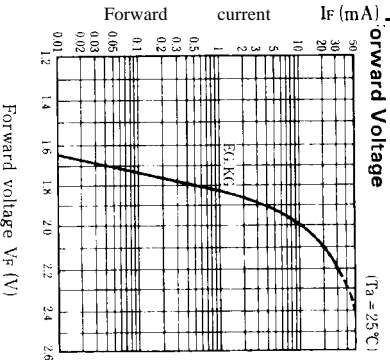
(Ta = 25°C)

Parameter	Symbol	Model NO.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	GL8EG42	I _F = 20mA	—	2.4	2.6	V
		GL8KG42	I _F = 20mA	—	2.1	2.8	
*3 Luminous intensity	I _v	GL8EG42	I _F = 20mA	2.0	3.0	—	mcd
		GL8KG42	I _F = 20mA	0.60	1.5	—	
Peak emission wavelength	λ _p	GL8EG42	I _F = 20mA	—	555	—	nm
		GL8KG42	I _F = 20mA	—	555	—	
Spectrum radiation bandwidth	Δλ	GL8EG42	I _F = 20mA	—	30	—	nm
		GL8KG42	I _F = 20mA	—	25	—	
Reverse current	I _r	GL8EG42	V _R = 4V	—	—	1.0	μA
		GL8KG42	V _R = 4V	—	—	1.0	
Terminal capacitance	C _t	GL8EG42	V = 0V	—	30	—	pF
		GL8KG42	V = 0V	—	40	—	
Response frequency	f _c	GL8EG42	f = 1MHz	—	—	—	MHz
		GL8KG42	f = 1MHz	—	—	—	

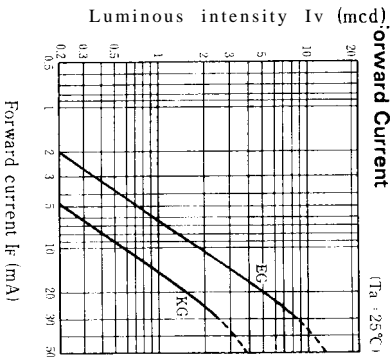
*3 Tolerance: ± 30%

■ Characteristics Diagrams

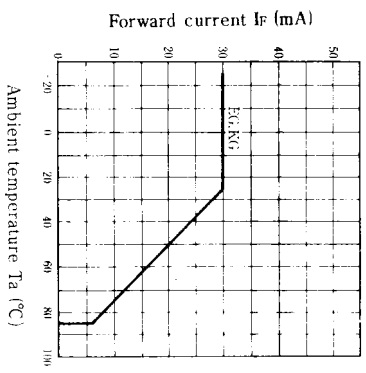
F Forward Current vs.



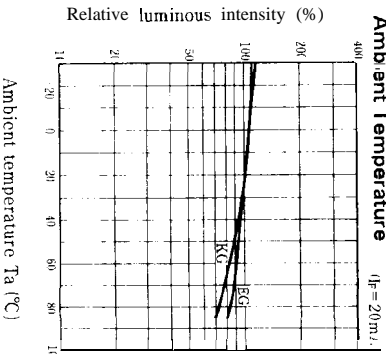
L Luminous Intensity vs.



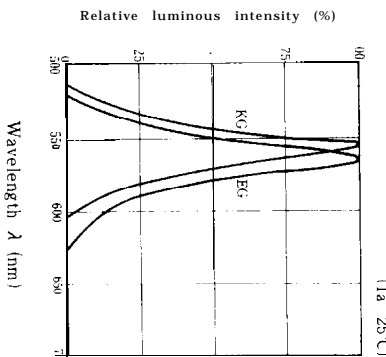
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution



SHARP