

## GL1□□111 Series

## Colored Diffusion Mini-mold LED Lamps, Forming Type

## ■ Model No.

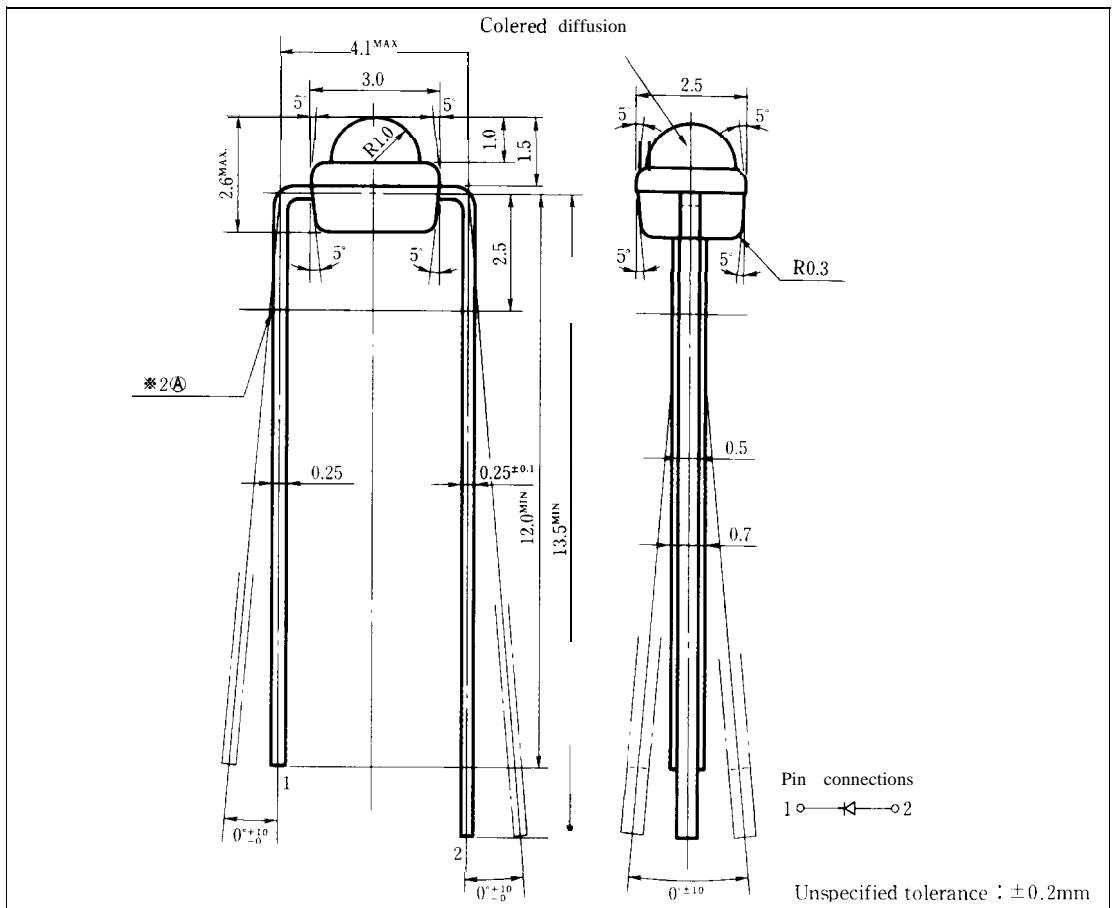
GL1PR111 Red	GaP
GL1HD111 Red	GaAsP/GaP
GLIHS111 Sunset orange	GaAsP/GaP
GL1HY111 Yellow	GaAsP/GaP
GL1EG111 Yellow-green	GaP

## ■ Features

1.  $\phi$  2mm all resin mold
2. "L" type forming long lead pins
3. Colored diffusion lens type

## ■ Outline Dimensions

(Unit: mm)



SHARP

## GL1 □ □ 111

## ■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	GL1PR111	GL1HD111	GL1HY111			Unit	
			GL1HS111	GL1EG111				
Power dissipation	P	23	84	50			mW	
Continuous forward current	I <sub>F</sub>	10	30	20			mA	
*1 Peak forward current	I <sub>FM</sub>	50	50	50			mA	
Derating factor	DC	—	0.13	0.40	0.27		mA/°C	
	Pulse	—	0.67	0.67	0.67		mA/°C	
Reverse voltage	V <sub>R</sub>	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

\*2 At the (A) position of outline dimensions

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## GL1PR111 (Red) / GL1HD111 (Red)

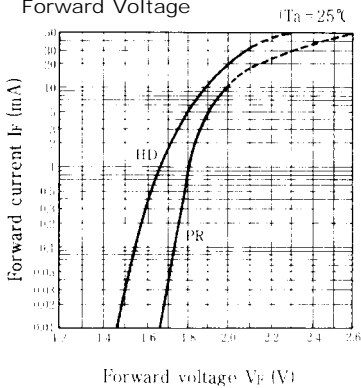
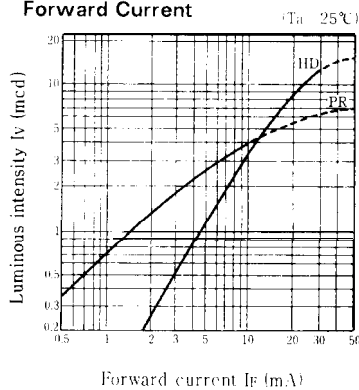
## ■ Electro-optical Characteristics

(Ta = 25°C)

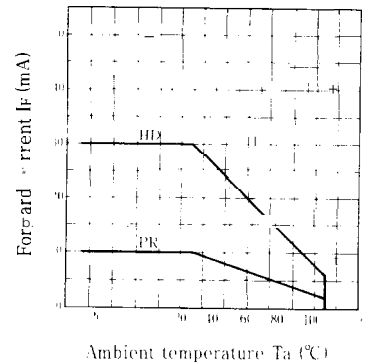
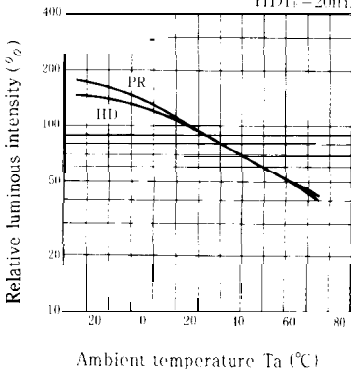
Parameter	Symbol	Model No.	Conditions	MIN	TYP.	MAX	Unit
Forward voltage	V <sub>F</sub>	GL1PR111	I <sub>F</sub> = 5mA		1.9	2.3	V
		GL1HD111	I <sub>F</sub> = 20mA		2.0	2.8	
*3 Luminous intensity	I <sub>v</sub>	GL1PR111	I <sub>F</sub> = 5mA	1.0	2.6	—	mcd
		GL1HD111	I <sub>F</sub> = 20mA	4.2	8.8	—	
Peak emission wavelength	λ <sub>p</sub>	GL1PR111	I <sub>F</sub> = 5mA		695	—	nm
		GL1HD111	I <sub>F</sub> = 20mA		635	—	
Spectrum radiation bandwidth	Δλ	GL1PR111	I <sub>F</sub> = 5mA		100	—	nm
		GL1HD111	I <sub>F</sub> = 20mA		35	—	
Reverse current	I <sub>R</sub>	GL1PR111	V <sub>R</sub> = 4V	—	—	10	μA
		GL1HD111	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	GL1PR111	V = 0V f = 1 MHz	—	55	—	pF
		GL1HD111	V = 0V f = 1 MHz	—	20	—	
Response frequency	f <sub>c</sub>	GL1PR111	—	—	4	—	MHz
		GL1HD111	—	—	4	—	

\*3 Tolerance: ±30%

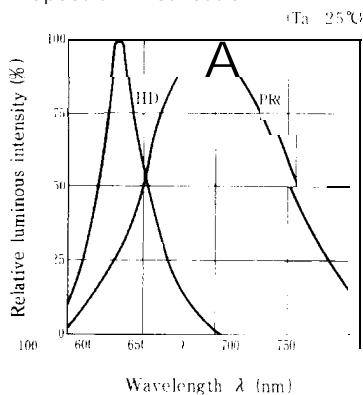
## ■ Characteristics Diagrams

Forward Current vs.  
Forward VoltageLuminous Intensity vs.  
Forward Current

Forward Current Derating Curve

Relative Luminous Intensity vs.  
Ambient Temperature, I<sub>F</sub> = 5mA  
I<sub>F</sub> = 20mA

Spectrum Distribution



GL1HS111 (Sunset orange) / GL1HY111 (Yellow)

■ **Electro-optical** Characteristics

(Ta = 25°C)

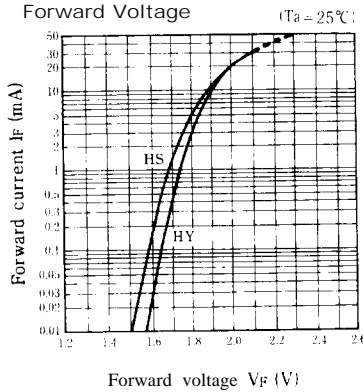
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	GL1HS111	I <sub>F</sub> = 20mA		2.0	2.8	V
		GL1HY111	I <sub>F</sub> = 10mA	-	1.9	2.5	
*3 Luminous intensity	I <sub>v</sub>	GL1HS111	I <sub>F</sub> = 20mA	4.0	10	-	mcd
		GL1HY111	I <sub>F</sub> = 10mA	1.7	4.5	-	
Peak emission wavelength	λ <sub>p</sub>	GL1HS111	I <sub>F</sub> = 20mA	-	610	-	'm
		GL1HY111	I <sub>F</sub> = 10mA	-	585	-	
Spectrum radiation bandwidth	Δλ	GL1HS111	I <sub>F</sub> = 20mA	-	35	-	'm
		GL1HY111	I <sub>F</sub> = 10mA	-	30	-	
Reverse current	I <sub>R</sub>	GL1HS111	V <sub>R</sub> = 4V	-	-	10	μA
		GL1HY111	V <sub>R</sub> = 4V	-	-	10	
Terminal capacitance	C <sub>t</sub>	GL1HS111	V = 0V f = 1MHz	-	15	-	pF
		GL1HY111	V = 0V f = 1MHz	-	35	-	
Response frequency	f <sub>c</sub>	GL1HS111	-	-	4	-	MHz
		GL1HY111	-	-	4	-	

X3 Tolerance: ±30%

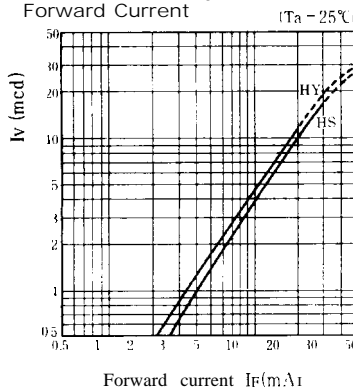
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■ **Characteristics Diagrams**

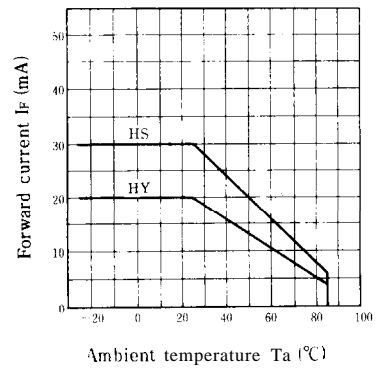
Forward Current vs. Forward Voltage



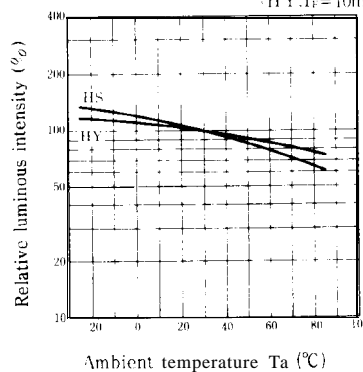
Luminous Intensity vs. Forward Current



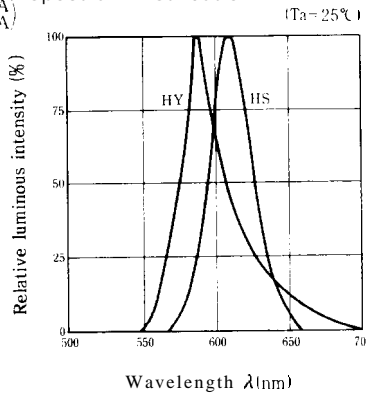
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution



GL1EG111 (Yellow-green)

■ **Electro-optical** Characteristics

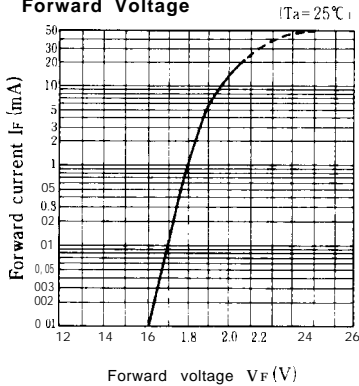
( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	$V_F$	GL1EG111	$I_F = 10\text{mA}$		1.95	2.5	V
*3Luminous intensity	$I_v$	GL1EG111	$I_F = 10\text{mA}$	2.2	4.3	—	mcd
Peak emission wavelength	$\lambda_p$	GL1EG111	$I_F = 10\text{mA}$	—	565	—	nm
Spectrum radiation bandwidth	$\Delta\lambda$	GL1EG111	$I_F = 10\text{mA}$	—	30	—	nm
Reverse current	$I_R$	GL1EG111	$V_R = 4\text{V}$	—	—	10	$\mu\text{A}$
Terminal capacitance	$C_t$	GL1EG111	$V = 0\text{V}$ $f = 1\text{MHz}$	—	35	—	pF
Response frequency	$f_c$	GL1EG111	—	—	4	—	MHz

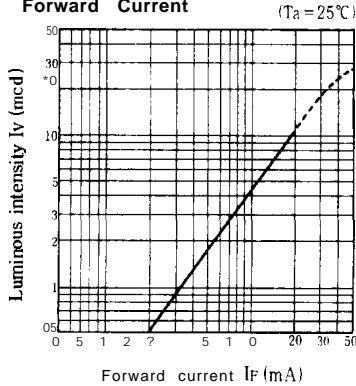
X3 Tolerance:  $\pm 30\%$

■ **Characteristics Diagrams**

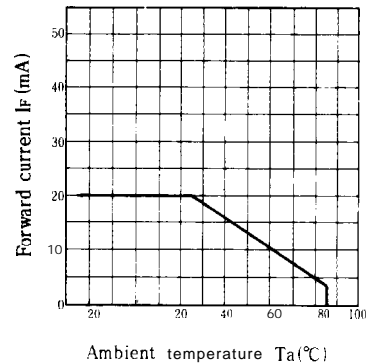
**Forward Current vs. Forward Voltage**



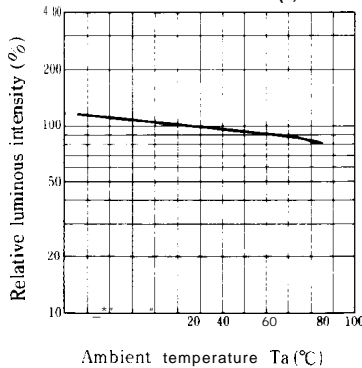
**Luminous Intensity vs. Forward Current**



**Forward Current Derating Curve**



**Relative Luminous Intensity vs. Ambient Temperature**



**Spectrum Distribution**

