# GL3□□8 Series

## φ3mm (T-1) Cylinder Type LED Lamps

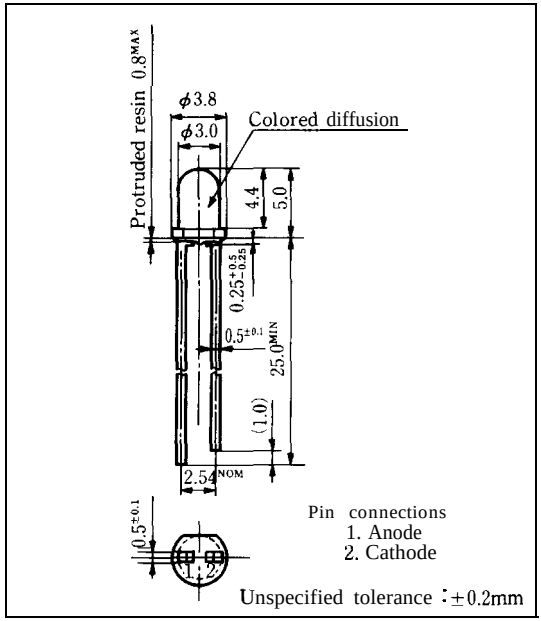
### ■ Model No.

| | | |
|---|---|---|
| **GL3UR8** | Red (Super-luminosity) | GaAlAs/GaAlAs |
| GL3LR8 | Red (High-luminosity) | GaAlAs/GaAs |
| GL3TR8 | Red (High-luminosity) | GaAlAs/GaAs |
| GL3PR8 | Red | GaP |
| GL3HD8 | Red | GaAsP/GaP |
| GL3HS8 | Sunset orange | GaAsP/GaP |
| GL3HY8 | Yellow | GaAsP/GaP |
| GL3EG8 | Yellow-green | GaP |
| GL3KG8 | Green | GaP |

### ■ Features

1. φ3mm (T-1) all resin mold
2. Colored diffusion lens type
3. Wide viewing angle

### ■ Outline Dimensions (Unit: mm)




### ■ Absolute Maximum Ratings (Ta=25℃)

| Parameter | | Symbol | GL3UR8 / GL3TR8 / GL3HY8 | GL3LR8 | GL3PR8 | GL3HD8 / GL3HS8 | GL3EG8 / GL3KG8 | Unit |
|---|---|---|---|---|---|---|---|---|
| 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/℃ |
| | Pulse | – | 0.67 | 4.00 | 0.67 | 0.67 | 0.67 | mA/℃ |
| Reverse voltage | | $V_R$ | 4 | 5 | 5 | 5 | 5 | v |
| Operating temperature | | Top, | −25 to +85 | | | | | ℃ |
| Storage temperature | | $T_{stg}$ | −25 to +100 | | | | | ℃ |
| ※2 Soldering temperature | | $T_{sol}$ | 260(within 5 seconds) | | | | | ℃ |

※1 Duty ratio = 1/10 , Pulse width = 0.1ms
Duty ratio = 1/16 , Pulse width ≦ lms for GL3LR8 and GL3TR8
※2 At the position of 1,6mm from the bottom face of resin package

## GL3UR8 (Red)

### ■ Electro-optical Characteristics

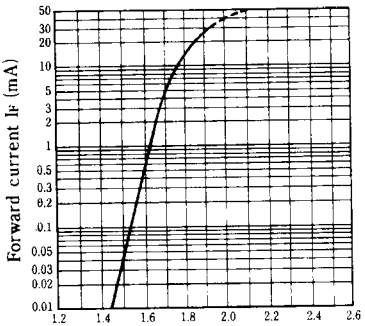
(Ta=25℃)

| Parameter | Symbol | Model No. | Conditions | MIN. | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_F$ | GL3UR8 | $I_F$=20mA | – | 1.85 | 2.5 | V |
| ※3 Luminousintensity | $I_V$ | GL3UR8 | $I_F$=20mA | 160 | 300 | – | mcd |
| Peak emission wavelength | $\lambda_p$ | GL3UR8 | $I_F$=20mA | | 660 | – | nm |
| Spectrum radiation bandwidth | $\Delta\lambda$ | GL3UR8 | $I_F$=20mA | | 20 | – | nm |
| Reverse current | $I_R$ | GL3UR8 | $V_R$=3V | – | – | 100 | μA |
| Terminal capacitance | $C_t$ | GL3UR8 | V=OV f=1 MHz | – | 25 | – | pF |
| Response frequency | $f_c$ | GL3UR8 | – | | 8 | – | MHz |

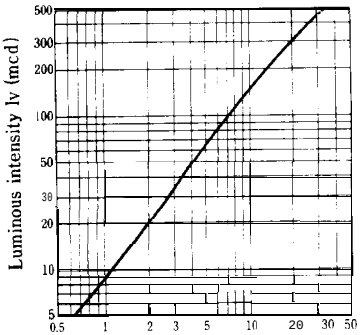
※3 Tolerance: ±30%

### ■ Characteristics Diagrams

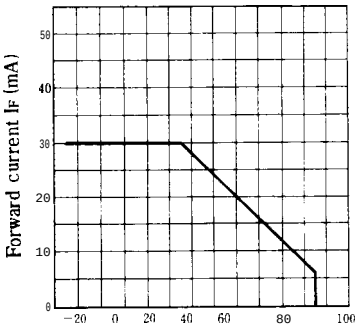
Forward Current vs. Forward Voltage (Ta=25℃)



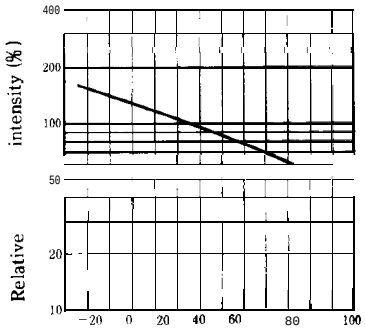

Luminous Intensity vs. Forwsrd Current (Ta=25℃)



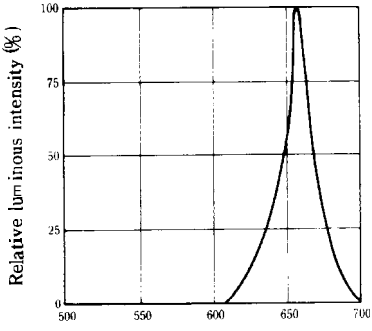

Forward Current **Derating** Curve



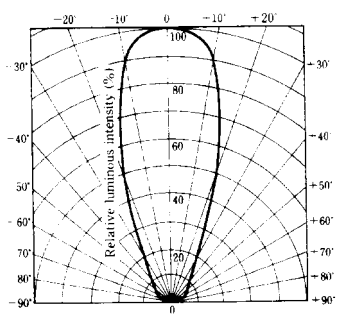

Relative Luminous Intensity vs. Ambient Temperature (IF=20mA)




**Spectrum** Distribution (Ta=25℃)




**Radiation** Diagram (Ta=25℃)



## GL3LR8 (Red) / GL3TR8 (Red)

### ■ Electro-optical Characteristics

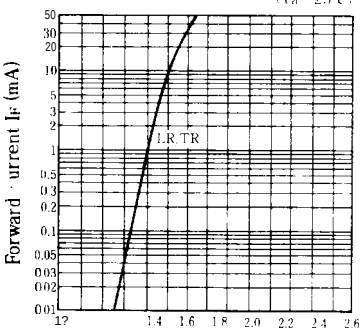
(Ta=25℃)

| Parameter | Symbol | Model No. | Conditions | MIN. | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_F$ | GL3LR8 | $I_F$=20mA | | 1.75 | 2.2 | V |
| | | GL3TR8 | $I_F$=20mA | – | 1.75 | 2.2 | |
| ※3 Luminous intensity | $I_V$ | GL3LR8 | $I_F$=20mA | 70 | 140 | – | mcd |
| | | GL3TR8 | $I_F$=20mA | 30 | 60 | – | |
| Peak emission wavelength | $\lambda_p$ | GL3LR8 | $I_F$=20mA | | 660 | – | ‘m |
| | | GL3TR8 | $I_F$=20mA | · | 660 | – | |
| Spectrum radiation bandwidth | $\Delta\lambda$ | GL3LR8 | $I_F$=20mA | | 20 | – | ‘m |
| | | GL3TR8 | $I_F$=20mA | | 20 | – | |
| Reverse current | $I_R$ | GL3LR8 | $V_R$=4V | | – | 10 | μA |
| | | GL3TR8 | $V_R$=4V | | | 10 | |
| Terminal capacitance | c! | GL3LR8 | V=0V f=1 MHz | – | 30 | – | ‘F |
| | | GL3TR8 | V=0V f=1 MHz | – | 30 | - | |
| Response frequency | $f_c$ | GL3LR8 | – | | 8 | – | MHz |
| | | GL3TR8 | – | | 8 | – | |

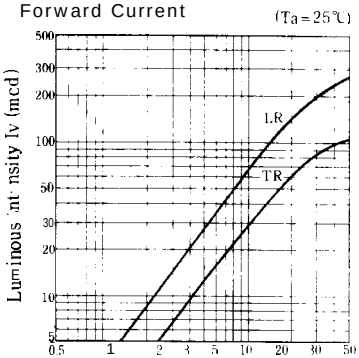
※3 Tolerance: ±30%

### ■ Characteristics Diagrams

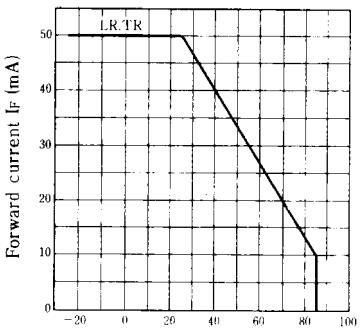
Forward Current vs. Forward Voltage



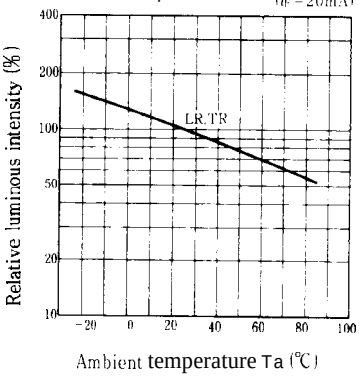

Luminous Intensity vs. Forward Current



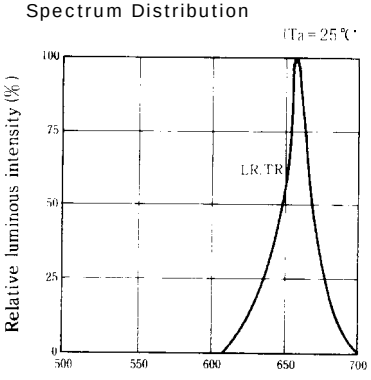

Forward Current Derating Curve



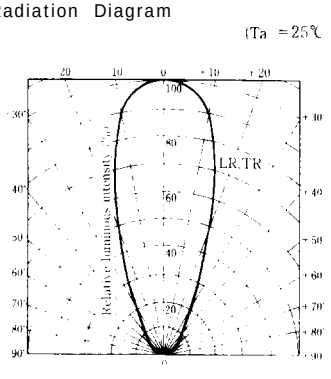

Relative Luminous Intensity vs. Ambient Temperature




Spectrum Distribution




Radiation Diagram



## GL3PR8 (Red) / GL3HD8 (Red)

### ■ Electro-optical Characteristics

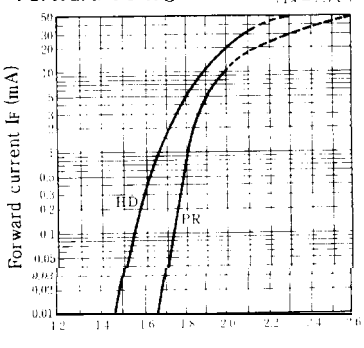
(Ta = 25℃)

| Parameter | Symbol | Model No. | Conditions | MIN. | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_F$ | GL3PR8 | $I_F$ = 5mA | | 1.9 | 2.3 | V |
| | | GL3HD8 | $I_F$ = 20mA | – | 2.0 | 2.8 | |
| ※3 Luminous intensity | $I_V$ | GL3PR8 | $I_F$ = 5mA | 2.5 | 8.0 | – | mcd |
| | | GL3HD8 | $I_F$ = 20mA | 10 | 40 | | |
| Peak emission wavelength | $\lambda_p$ | GL3PR8 | $I_F$ = 5mA | | 695 | – | nm |
| | | GL3HD8 | $I_F$ = 20mA | – | 635 | – | |
| Spectrum radiation bandwidth | $\Delta\lambda$ | GL3PR8 | $I_F$ = 5mA | | 100 | – | nm |
| | | GL3HD8 | $I_F$ = 20mA | | 35 | – | |
| Reverse current | $I_R$ | GL3PR8 | $V_R$ = 4V | | | 10 | μA |
| | | GL3HD8 | $V_R$ = 4V | – | – | 10 | |
| Terminal capacitance | $C_t$ | GL3PR8 | V = 0V f = 1 MHz | – | 55 | – | pF |
| | | GL3HD8 | V = 0V f = 1 MHz | – | 20 | – | |
| Response frequency | $f_c$ | GL3PR8 | – | – | 4 | – | MHz |
| | | GL3HD8 | – | – | 4 | – | |

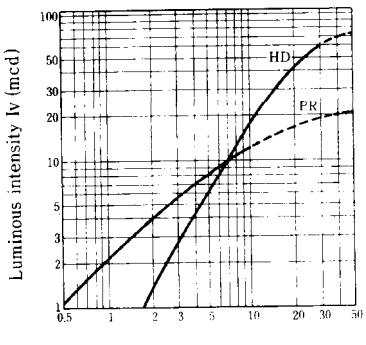
※3 **Tolerance:** ±30%

### ■ Characteristics Diagrams

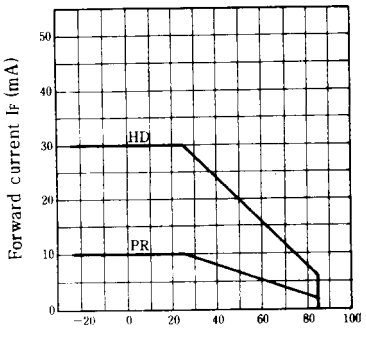
**Forward Current vs. Forward Voltage** (Ta = 25℃)



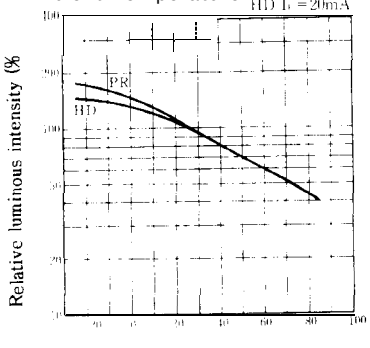

Luminous Intensity vs. Forward Current (Ta = 25℃)



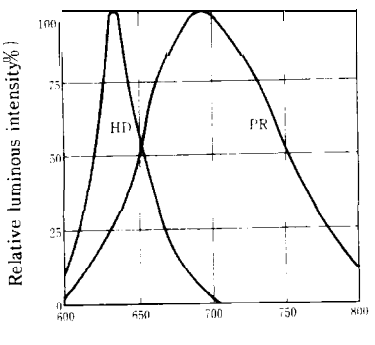

**Forward Current Derating Curve**



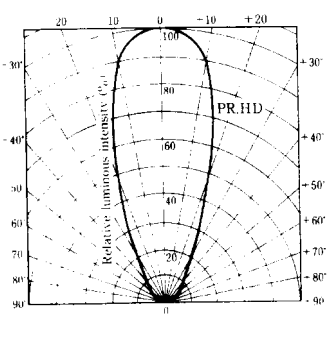

**Relative** Luminous Intensity vs. Ambient Temperature PR $I_F$ = 5mA HD $I_F$ = 20mA




Spectrum Distribution (Ta = 25℃)




Radiation Diagram (Ta = 25℃)



GL3HS8 (Sunset orange) / GL3HY8 (Yellow)

## ■ Electro-optical Characteristics

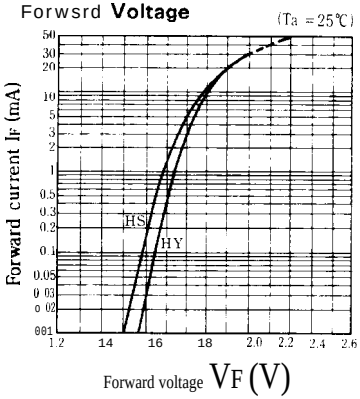
(Ta=25°C)

| Parameter | Symbol | Model No. | Conditions | MIN. | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_F$ | GL3HS8 | $I_F$=20mA | – | 2.0 | 2.8 | " |
| | | GL3HY8 | $I_F$=20mA | – | 2.0 | 2.8 | |
| ※3 Luminous intensity | Iv | GL3HS8 | $I_F$=20mA | 15 | 60 | – | mcd |
| | | GL3HY8 | $I_F$=20mA | 10 | 55 | | |
| Peak emission wavelength | $\lambda_p$ | GL3HS8 | $I_F$=20mA | – | 610 | – | |
| | | GL3HY8 | $I_F$=20mA | – | 585 | – | 'm |
| Spectrum radiation bandwidth | $\Delta\lambda$ | GL3HS8 | $I_F$=20mA | – | 35 | – | |
| | | GL3HY8 | $I_F$=20mA | – | 30 | – | 'm |
| Reverse current | $I_R$ | GL3HS8 | $V_R$=4V | – | – | 10 | $\mu$A |
| | | GL3HY8 | $V_R$=4V | – | – | 10 | |
| Terminal capacitance | $C_t$ | GL3HS8 | V=OV f=1 MHz | – | 15 | – | pF |
| | | GL3HY8 | V=OV f=1 MHz | – | 35 | – | |
| Response frequency | $f_c$ | GL3HS8 | – | – | 4 | – | |
| | | GL3HY8 | – | – | 4 | – | 'Hz |

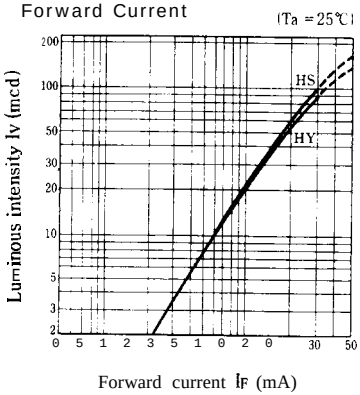
※3 Tolerance: ±30%

## ■ Characteristics Diagrams

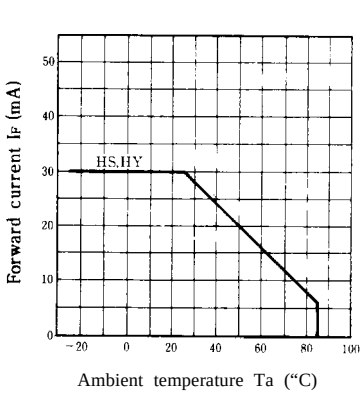
Forward Current va. Forwsrd **Voltage**



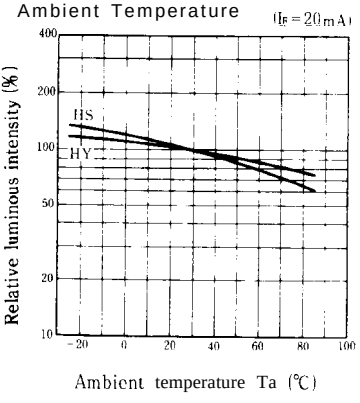

Luminous Intensity vs. Forward Current



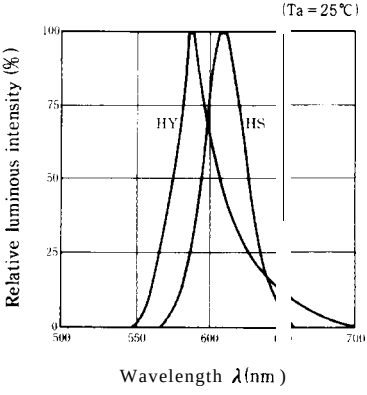

Forward Current **Derating** Curve



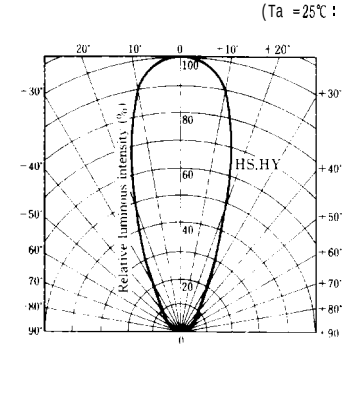

Relative Luminous Intensity vs. Ambient Temperature




Spectrum Distribution




Radiation Diagram



## GL3EG8 (Yellow-green) / GL3KG8 (Green)

### ■ Electro-optical Characteristics

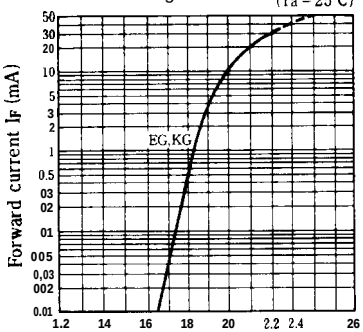
(Ta = 25℃)

| Parameter | Symbol | Model No. | Conditions | MIN. | TYP. | MAX. | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_F$ | GL3EG8 | $I_F$ = 20mA | – | 2.1 | 2.8 | V |
| | | GL3KG8 | $I_F$ = 20mA | – | 2.1 | 2.8 | |
| ※3 Luminous intensity | $I_V$ | GL3EG8 | $I_F$ = 20mA | 20 | 60 | – | mcd |
| | | GL3KG8 | $I_F$ = 20mA | 16 | 30 | – | |
| Peak emission wavelength | $\lambda_p$ | GL3EG8 | $I_F$ = 20mA | – | 565 | – | ‘m |
| | | GL3KG8 | $I_F$ = 20mA | – | 555 | – | |
| Spectrum radiation bandwidth | $\Delta\lambda$ | GL3EG8 | $I_F$ = 20mA | – | 30 | – | ‘m |
| | | GL3KG8 | $I_F$ = 20mA | – | 25 | – | |
| Reverse current | $I_R$ | GL3EG8 | $V_R$ = 4V | – | – | 10 | μA |
| | | GL3KG8 | $V_R$ = 4V | – | – | 10 | |
| Terminal capacitance | $C_t$ | GL3EG8 | V=OV f=1MHz | – | 35 | – | pF |
| | | GL3KG8 | V=OV f=1MHz | – | 40 | – | |
| Response frequency | $f_c$ | GL3EG8 | - | – | 4 | – | MHz |
| | | GL3KG8 | - | – | 4 | – | |

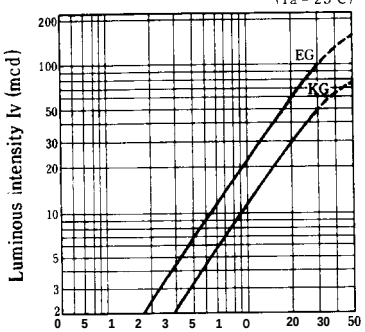
※3 Tolerance: ±30%

### ■ Characteristics Diagrams

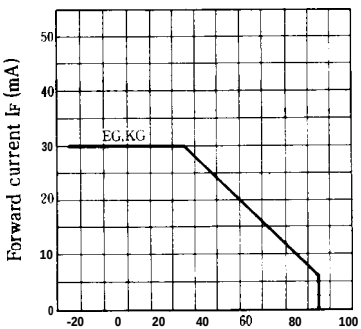
Forward Current vs. Forward Voltage (Ta = 25℃)



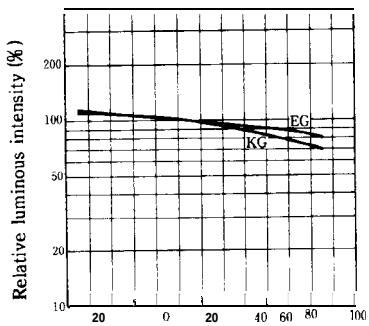

Luminous Intensity vs. Forward Current (Ta = 25℃)



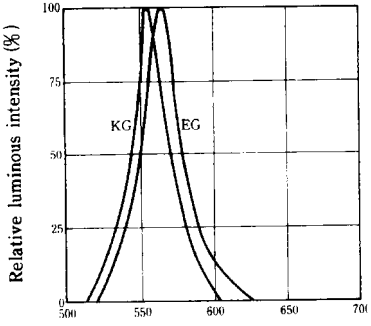

Forward Current Derating Curve




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




Spectrum Distribution (Ta = 25℃)




Radistion Diagram (Ta = 25℃)