

51E D ■ 8180798 0007186 313 ■ SRPJ

# GL1□□82 Series

## Dichromatic Chip LED Devices With Inner Lens

T-41-31

### Model No.

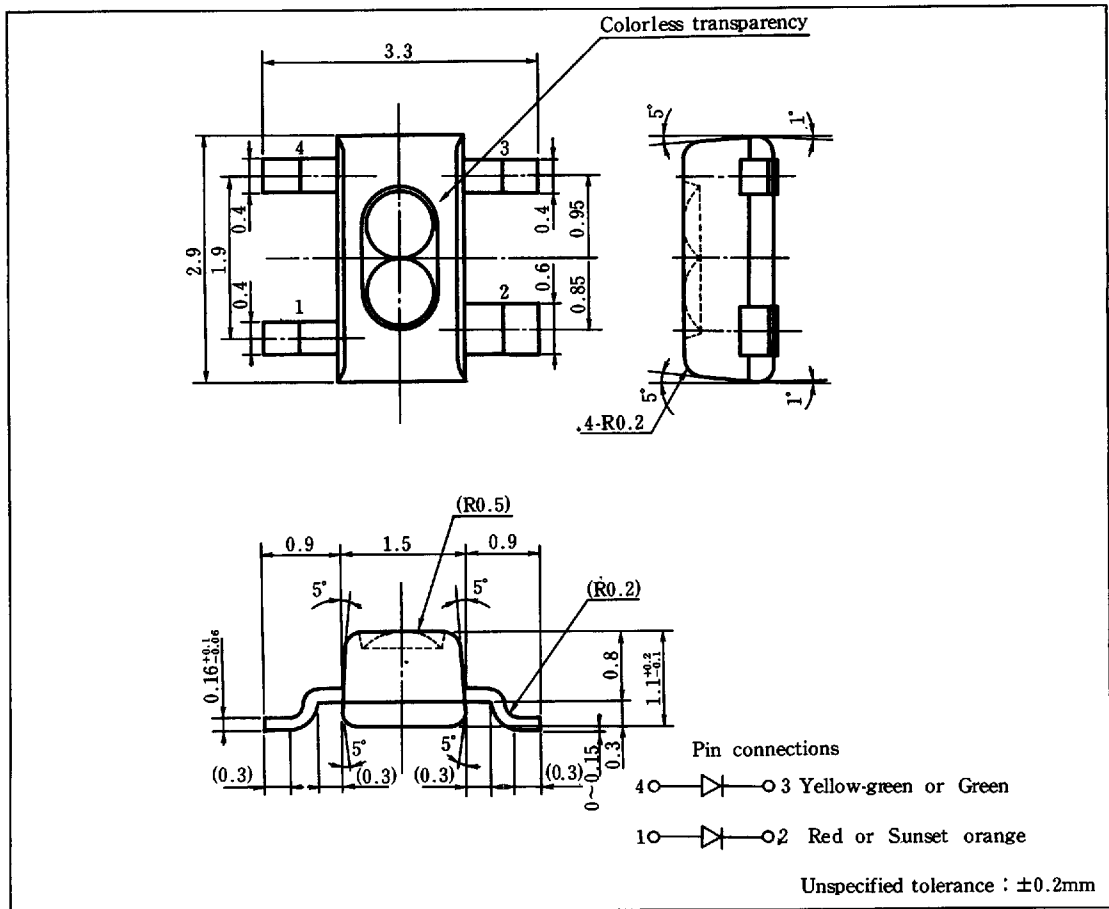
GL1EL82	Yellow-green	GaP
	Red (High-luminosity)	GaAlAs/GaAs
GL1ET82	Yellow-green	GaP
	Red (High-luminosity)	GaAlAs/GaAs
GL1KS82	Green	GaP
	Sunset orange	GaAsP/GaP

### Features

1. Inner-lens type
2. Radiation size 1.5 × 2.9mm
3. Colorless transparency lens type

### Outline Dimensions

(Unit: mm)



## ■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	GL1EL82		GL1ET82		Unit
		Yellow-green	Red	Yellow-green	Red	
*1 Power dissipation	P	50	110	50	66	mW
Continuous forward current	I <sub>F</sub>	20	50	20	30	mA
*2 Peak forward current	I <sub>FM</sub>	50	200	50	50	mA
Derating factor	DC	—	0.27	0.27	0.40	mA/°C
	Pulse	—	0.67	2.67	0.67	mA/°C
Reverse voltage	V <sub>R</sub>	5		5		V
Operating temperature	T <sub>opr</sub>	-25 to +85				°C
Storage temperature	T <sub>stg</sub>	-25 to +100				°C

(Ta = 25°C)

Parameter	Symbol	GL1KS82				Unit
		Green	Sunset orange			
*1 Power dissipation	P	50	84			mW
Continuous forward current	I <sub>F</sub>	20	30			mA
*2 Peak forward current	I <sub>FM</sub>	50	50			mA
Derating factor	DC	—	0.27	0.40		mA/°C
	Pulse	—	0.67	0.67		mA/°C
Reverse voltage	V <sub>R</sub>	5				V
Operating temperature	T <sub>opr</sub>	-25 to +85				°C
Storage temperature	T <sub>stg</sub>	-25 to +100				°C

\*1 The value of power dissipation is specified under the condition that either yellow-green or red/green or sunset orange is lightened separately. When the both diodes of yellow-green and red/green and sunset orange are lightened simultaneously, the power dissipation of each diode should be less than the half of the value specified in this table.

\*2 Duty ratio = 1/10, Pulse width = 0.1ms

GL1EL82 (Yellow-green/Red)

■ Electro-optical Characteristics

(Ta = 25°C)

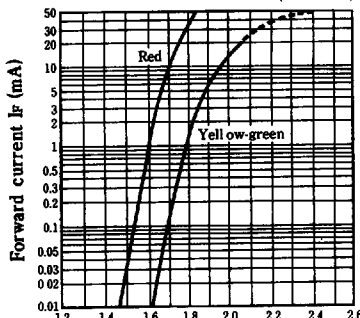
Parameter	Symbol	Radiation color	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	Yellow-green	I <sub>F</sub> = 10mA	—	1.95	2.5	V
		Red	I <sub>F</sub> = 20mA	—	1.75	2.2	
*3 Luminous intensity	I <sub>v</sub>	Yellow-green	I <sub>F</sub> = 10mA	2.7	7.0	—	mcd
		Red	I <sub>F</sub> = 20mA	8.2	21.8	—	
Peak emission wavelength	λ <sub>p</sub>	Yellow-green	I <sub>F</sub> = 10mA	—	565	—	nm
		Red	I <sub>F</sub> = 20mA	—	660	—	
Spectrum radiation bandwidth	Δλ	Yellow-green	I <sub>F</sub> = 10mA	—	30	—	nm
		Red	I <sub>F</sub> = 20mA	—	20	—	
Reverse current	I <sub>R</sub>	Yellow-green	V <sub>R</sub> = 4V	—	—	10	μA
		Red	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	Yellow-green	V = 0V f = 1MHz	—	35	—	pF
		Red	V = 0V f = 1MHz	—	30	—	
Response frequency	f <sub>c</sub>	Yellow-green	—	—	4	—	MHz
		Red	—	—	8	—	

\*3 Tolerance: ±30%

■ Characteristics Diagrams

Forward Current vs. Forward Voltage

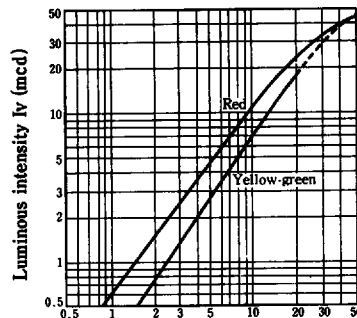
(Ta = 25°C)



Forward voltage V<sub>F</sub> (V)

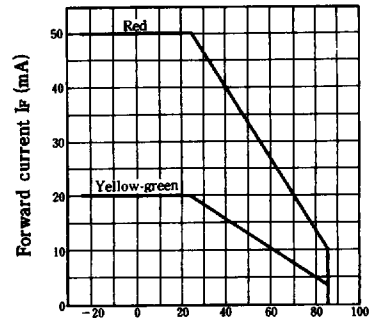
Luminous Intensity vs. Forward Current

(Ta = 25°C)



Forward current I<sub>F</sub> (mA)

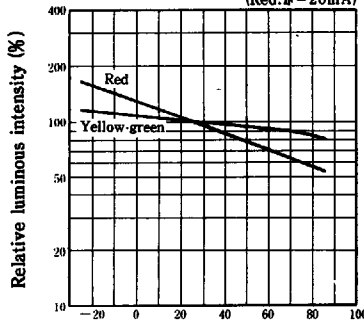
Forward Current Derating Curve



Ambient temperature T<sub>a</sub> (°C)

Relative Luminous Intensity vs. Ambient Temperature

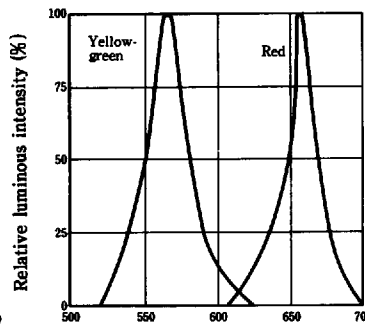
(Y-g: I<sub>F</sub> = 10mA)  
(Red: I<sub>F</sub> = 20mA)



Ambient temperature T<sub>a</sub> (°C)

Spectrum Distribution

(Ta = 25°C)



Wavelength λ (nm)

**GL1ET82 (Yellow-green/Red)**

**■ Electro-optical Characteristics**

(Ta = 25°C)

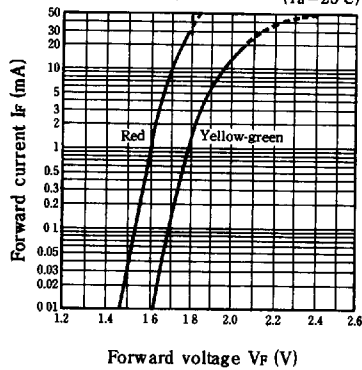
Parameter	Symbol	Radiation color	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	Yellow-green	I <sub>F</sub> = 10mA	—	1.95	2.5	V
		Red	I <sub>F</sub> = 20mA	—	1.75	2.2	
*3 Luminous intensity	I <sub>v</sub>	Yellow-green	I <sub>F</sub> = 10mA	2.7	7.0	—	mcd
		Red	I <sub>F</sub> = 20mA	4.8	11.8	—	
Peak emission wavelength	λ <sub>p</sub>	Yellow-green	I <sub>F</sub> = 10mA	—	565	—	nm
		Red	I <sub>F</sub> = 20mA	—	660	—	
Spectrum radiation bandwidth	Δλ	Yellow-green	I <sub>F</sub> = 10mA	—	30	—	nm
		Red	I <sub>F</sub> = 20mA	—	20	—	
Reverse current	I <sub>R</sub>	Yellow-green	V <sub>R</sub> = 4V	—	—	10	μA
		Red	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	Yellow-green	V = 0V f = 1MHz	—	35	—	pF
		Red	V = 0V f = 1MHz	—	30	—	
Response frequency	f <sub>c</sub>	Yellow-green	—	—	4	—	MHz
		Red	—	—	8	—	

\*3 Tolerance: ±30%

**■ Characteristics Diagrams**

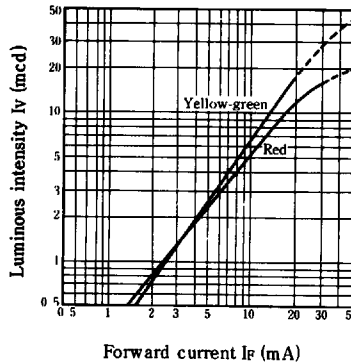
**Forward Current vs. Forward Voltage**

(Ta = 25°C)

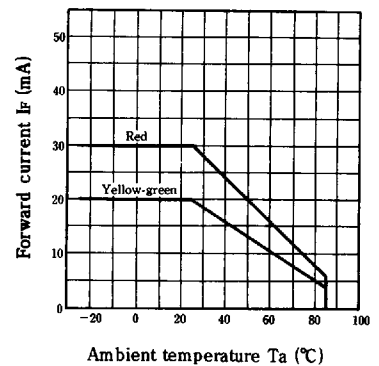


**Luminous Intensity vs. Forward Current**

(Ta = 25°C)

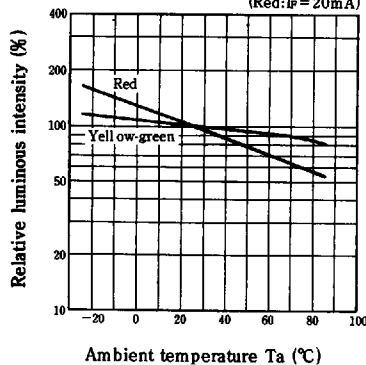


**Forward Current Derating Curve**



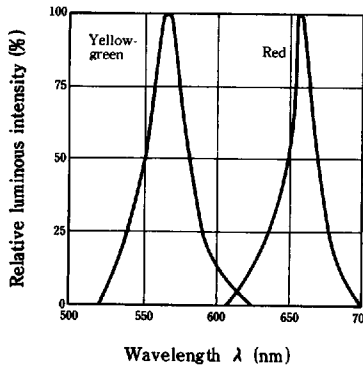
**Relative Luminous Intensity vs. Ambient Temperature**

(Y-g: I<sub>F</sub> = 10mA)  
(Red: I<sub>F</sub> = 20mA)



**Spectrum Distribution**

(Ta = 25°C)



3

**GL1KS82 (Green/Sunset orange)**

**Electro-optical Characteristics**

(Ta = 25°C)

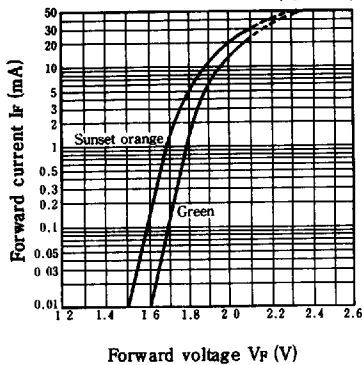
Parameter	Symbol	Radiation color	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	Green	I <sub>F</sub> = 10mA	—	1.95	2.5	V
		Sunset orange	I <sub>F</sub> = 20mA	—	2.0	2.8	
※3 Luminous intensity	I <sub>v</sub>	Green	I <sub>F</sub> = 10mA	0.8	2.4	—	mcd
		Sunset orange	I <sub>F</sub> = 20mA	4.0	10.5	—	
Peak emission wavelength	λ <sub>p</sub>	Green	I <sub>F</sub> = 10mA	—	555	—	nm
		Sunset orange	I <sub>F</sub> = 20mA	—	610	—	
Spectrum radiation bandwidth	Δλ	Green	I <sub>F</sub> = 10mA	—	25	—	nm
		Sunset orange	I <sub>F</sub> = 20mA	—	35	—	
Reverse current	I <sub>R</sub>	Green	V <sub>R</sub> = 4V	—	—	10	μA
		Sunset orange	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	Green	V = 0V f = 1MHz	—	40	—	pF
		Sunset orange	V = 0V f = 1MHz	—	15	—	
Response frequency	f <sub>c</sub>	Green	—	—	4	—	MHz
		Sunset orange	—	—	4	—	

※3 Tolerance: ±30%

**Characteristics Diagrams**

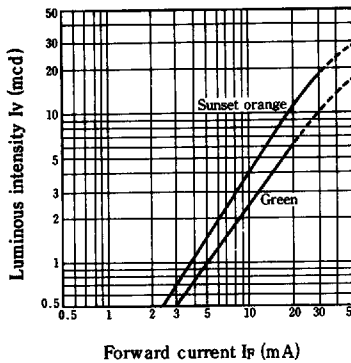
**Forward Current vs. Forward Voltage**

(Ta = 25°C)

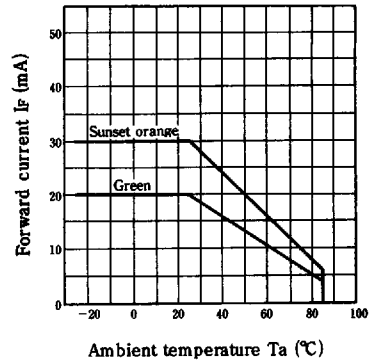


**Luminous Intensity vs. Forward Current**

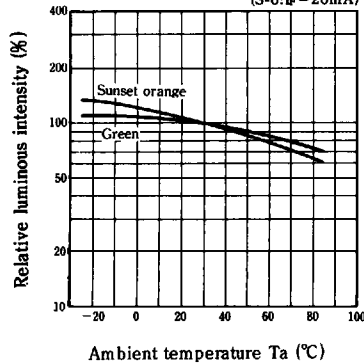
(Ta = 25°C)



**Forward Current Derating Curve**

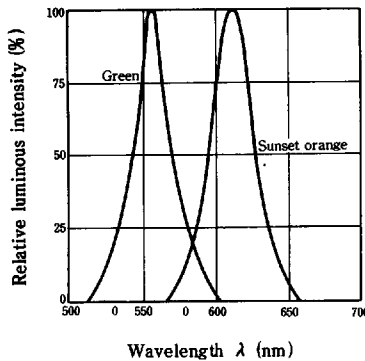


**Relative Luminous Intensity vs. Ambient Temperature**  
(G.: I<sub>F</sub> = 10mA)  
(S-o.: I<sub>F</sub> = 20mA)



**Spectrum Distribution**

(Ta = 25°C)



**Packing Specifications for LED Chips**

T-90-20

1. Chip Packing

The chips are pasted up on the center of an adhesive sheet, then covered with a protective sheet.

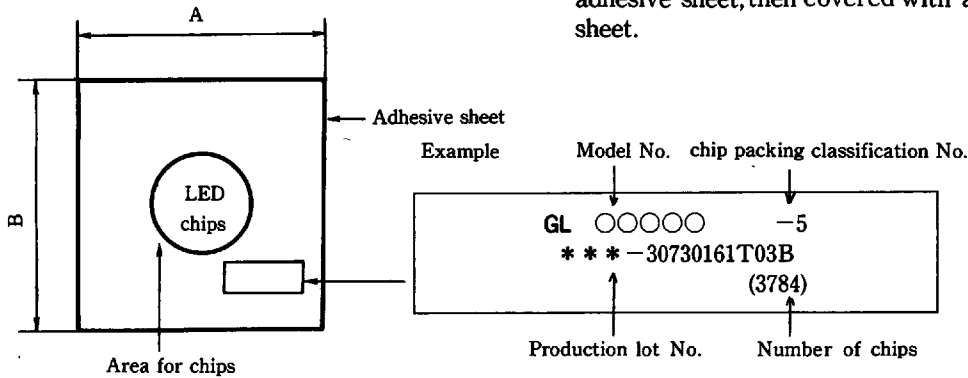


Fig. 1

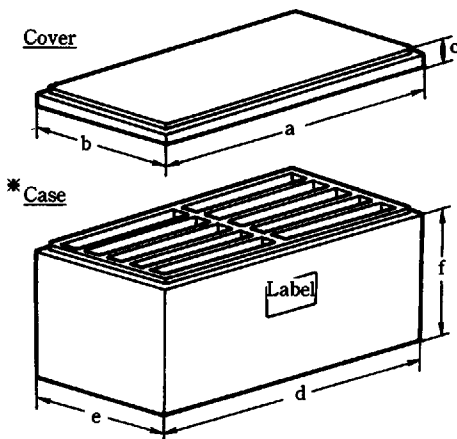
2. Sheet Packing

PART No.	
QUANTITY	00 pcs. ( UNITS)
ID No.	
SHARP CORPORATION	

Put the chip-pasted sheet into a dedicated styrol case, then paste up a label shown in Fig. 2 on its side.

Fig. 2

3. Styrol Case



\*Divided into 10 divisions

Fig. 3

T-90-20

Adhesive sheet size A × B	Cover			Case			1 division		
	a	b	c	d	e	f	Length	Width	Depth
110×110	265	170	22.5	265	170	125	115	22.5	115
150×150	350	170	22.5	350	170	165	155	22.5	155
180×180	465	200	22.5	465	200	220	205	25	205
200×200	465	200	22.5	465	200	220	205	25	205

As to details such as materials, colors and paste intensity of chip-pasted sheets, etc., please contact our sales department.