

3-1 Individual Specifications

SANKEN

SANKEN
LIGHT EMITTING DIODES

T-1 3/4 Standard Type (Diffused)

SEL 1110 R
SEL 1110 W

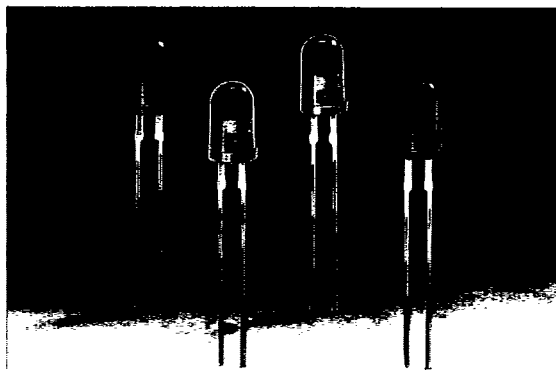
SEL 1310 G
SEL 1710 Y

FEATURES

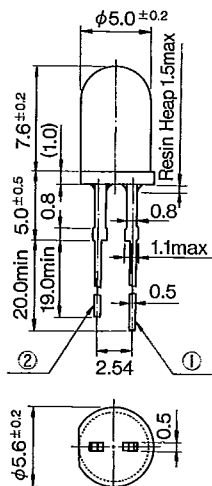
- Wide Application Range
- For Display and Other General Uses
- Long-life/High Reliability
- Wide Viewing Angle/Diffused Type
- Selection of 3 Colors/Intensities
- Pulse-Drivable
- CMOS/MOS, TTL Compatible

APPLICATIONS

- General Use
- Low Power Circuit
- Portable Device
- Display of Battery and Communication Devices



Package Dimensions



Tolerance : ± 0.3
Terminals : ① Anode
② Cathode

Unit : mm

Intensity Ranks

Type No.	Intensity Min. (mcd)	Condition I_F (mA)	Color	
			Lens	Chip
SEL 1110 R A B C D	1.4	10	R	R
	2.0			
	2.9			
	4.5			
SEL 1110 W A B C D	1.4	10	W	R
	2.0			
	2.9			
	4.5			
SEL 1310 G C D1 D2 D3	3.5	10	G	G
	6.5			
	10.0			
	16.0			
SEL 1710 Y A B C D	5.5	10	Y	Y
	8.6			
	13.0			
	19.7			

R=Red G=Green W=Opaline Y=Yellow

Individual Specifications

Electro-Optical Characteristics (Ta = 25°C)							
Symbol	Description	Type No.	Min.	Typ.	Max.	Unit	Test Condition
I_v	Intensity	SEL 1110 R, 1110 W SEL 1310 G SEL 1710 Y	1.4 3.5 5.5	4.5 16.0 19.7		mcd	$I_F=10$ (mA)
$2\theta_{1/2}$	Including Angle Between Half Intensity Points	SEL 1110 R, 1110 W SEL 1310 G SEL 1710 Y		60°		Deg	$I_F=10$ (mA) See Note 1
λ_p	Peak Wavelength	SEL 1110 R, 1110 W SEL 1310 G SEL 1710 Y		700 560 570		nm	$I_F=10$ (mA)
$\Delta\lambda$	Spectral Line Halfwidth	SEL 1110 R, 1110 W SEL 1310 G SEL 1710 Y		100 28 40		nm	
λ_d	Dominant Wavelength	SEL 1110 R, 1110 W SEL 1310 G SEL 1710 Y		650 562 566		nm	See Note 2
C	Capacitance	SEL 1110 R, 1110 W SEL 1310 G SEL 1710 Y		38 15 15		pF	$V_F=0$ $f=1$ (MHz)
V_F	DC Forward Voltage	SEL 1110 R, 1110 W SEL 1310 G SEL 1710 Y	1.5	2.0	3.0	V	$I_F=10$ (mA)
V_R	DC Reverse Voltage	SEL 1110 R, 1110 W SEL 1310 G SEL 1710 Y	5.0			V	$I_R=100$ (μ A)

- Notes : 1. $\theta_{1/2}$ is the off-axis angle at which the intensity is half the axial intensity.
 2. The dominant wavelength, λ_d , is derived from the CIE chromaticity diagram and it represents the single wavelength which defines the color of the device.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Description	Ratings	Unit
I _P	Peak Forward Current* ¹	100	mA
I _F	Max. DC Forward Current* ²	30	mA
V _R	DC Reverse Voltage (I _R =100μA)	5	V
I _{FP}	Transient Max. Peak Forward Current* ³ (10μsec Pulse)	500	mA
T _{op}	Operating Temp. Range	-55 to +100	°C
T _{stg}	Storage Temp. Range	-55 to +100	
T _{slid}	Lead Soldering Temp. (more than 4.0mm from body)	260°C for 5 seconds	

- Notes :
1. See Figure 4
 2. This current derates linearly from 25°C at 0.33 mA/°C
 3. Only for one pulse

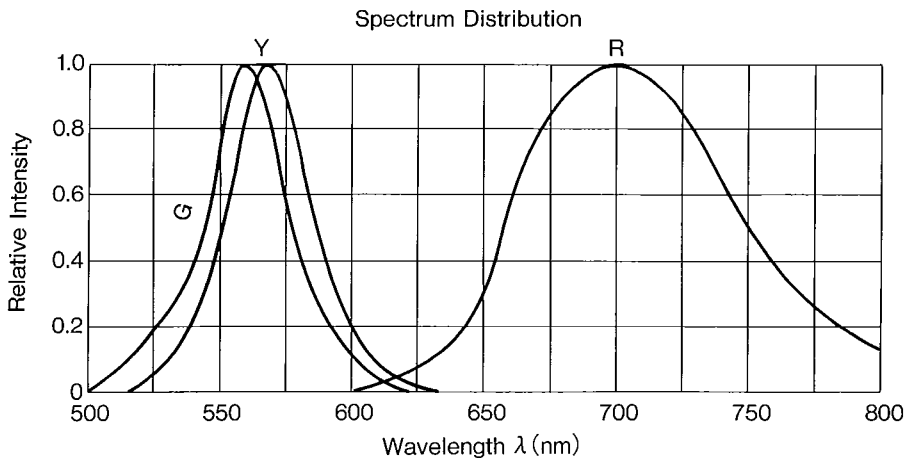


Fig. 1 : Relative Intensity vs. Wavelength

Individual Specifications

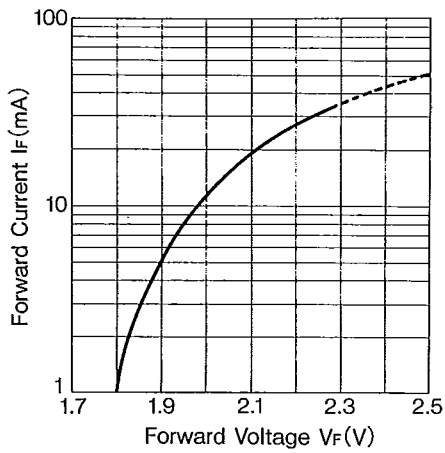


Fig.2 : Forward Current vs. Forward Voltage

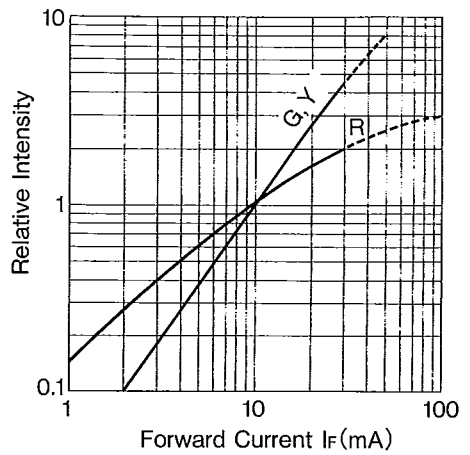


Fig.3 : Relative Intensity vs. Forward Current

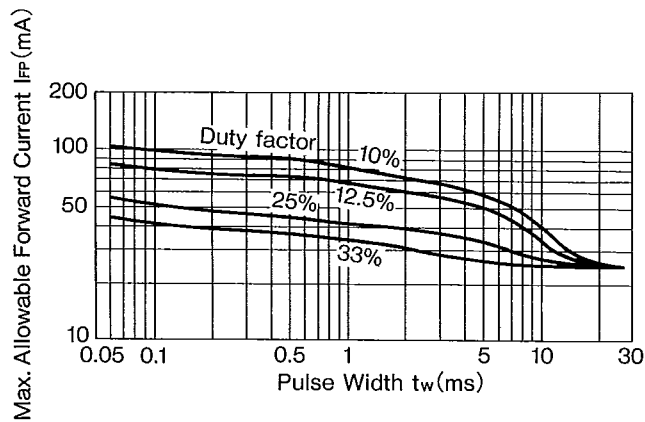


Fig.4 : Max. Allowable Forward Current vs. Pulse Width

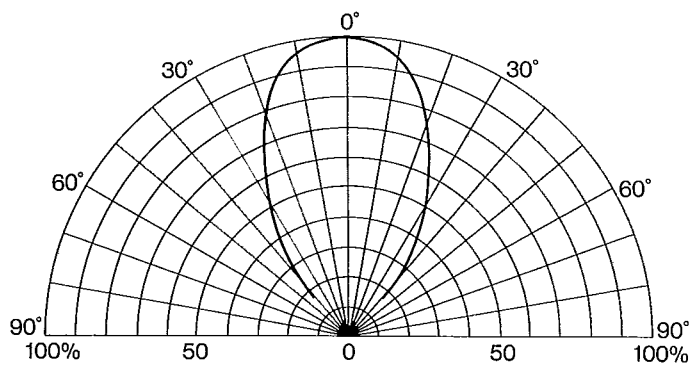


Fig.5 : Viewing Angle