

SANKEN

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LIGHT EMITTING DIODES

T-1 Standard Type (Non-Diffused)

SEL 2110 S
SEL 2310 E

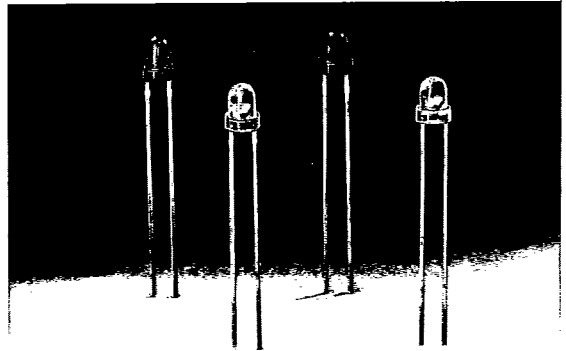
SEL 2510 C
SEL 2710 K

FEATURES

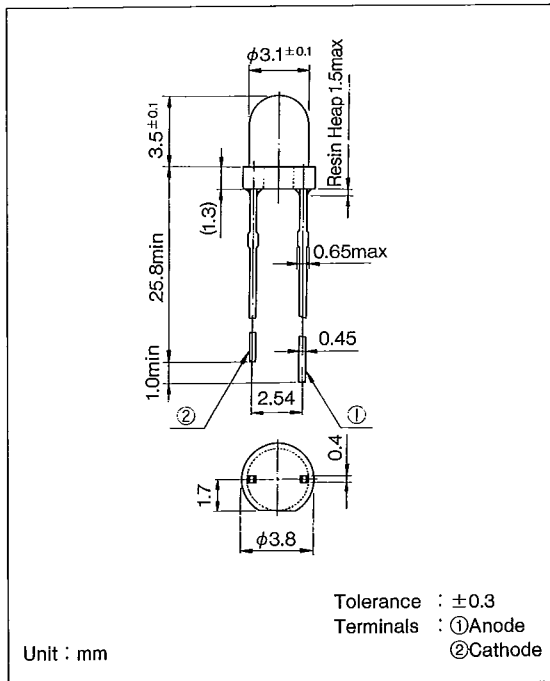
- Mounting Requires Only a Small Space
- Long-life/High Reliability
- Narrow Viewing Angle/Non-Diffused type
- Selection of 4 Colors/Intensities
- Pulse-Drivable
- CMOS/MOS, TTL Compatible

APPLICATIONS

- Low Power Circuit
- Portable Device
- For PCB Checking
- Display of Battery and Communication Devices



Package Dimensions



Intensity Ranks

Type No.	Intensity Min. (mcd)	Condition I _F (mA)	Color	
			Lens	Chip
SEL 2110 S	A 0.8	10	R	R
	B 1.3			
	C 1.7			
	D 2.5			
SEL 2310 E	A 1.4	10	G	G
	B 2.5			
	C 4.5			
	D 8.8			
SEL 2510 C	A 10.0	20	C	PG
	B 16.0			
	C 24.0			
	D 32.0			
SEL 2710 K	A 6.0	10	Y	Y
	B 9.8			
	C 14.0			
	D 19.0			

R=Red G=Green PG=Pure Green Y=Yellow C=Colorless Transparent

Individual Specifications

Electro-Optical Characteristics (Ta = 25°C)							
Symbol	Description	Type No.	Min.	Typ.	Max.	Unit	Test Condition
I_v	Intensity	SEL 2110 S SEL 2310 E SEL 2510 C* SEL 2710 K	0.8 1.4 10.0 6.0	2.5 8.8 32.0 19.0		mcd	$I_F=10$ (mA) * SEL 2510 C Only $I_F=20$ (mA)
$2\theta_{1/2}$	Including Angle Between Half Intensity Points	SEL 2110 S SEL 2310 E SEL 2510 C SEL 2710 K		40°		Deg	$I_F=10$ (mA) See Note 1
λ_p	Peak Wavelength	SEL 2110 S SEL 2310 E SEL 2510 C SEL 2710 K		700 560 555 570		nm	$I_F=10$ (mA)
$\Delta\lambda$	Spectral Line Halfwidth	SEL 2110 S SEL 2310 E SEL 2510 C SEL 2710 K		100 28 20 40		nm	
λ_d	Dominant Wavelength	SEL 2110 S SEL 2310 E SEL 2510 C SEL 2710 K		650 562 555 566		nm	See Note 2
C	Capacitance	SEL 2110 S SEL 2310 E SEL 2510 C SEL 2710 K		38 15 42 15		pF	$V_F=0$ $f=1$ (MHz)
V_F	DC Forward Voltage	SEL 2110 S SEL 2310 E SEL 2510 C SEL 2710 K	1.5	2.0	3.0	V	$I_F=10$ (mA)
V_R	DC Reverse Voltage	SEL 2110 S SEL 2310 E SEL 2510 C SEL 2710 K	5.0			V	$I_R=100$ (μA)

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 4.0 mm 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

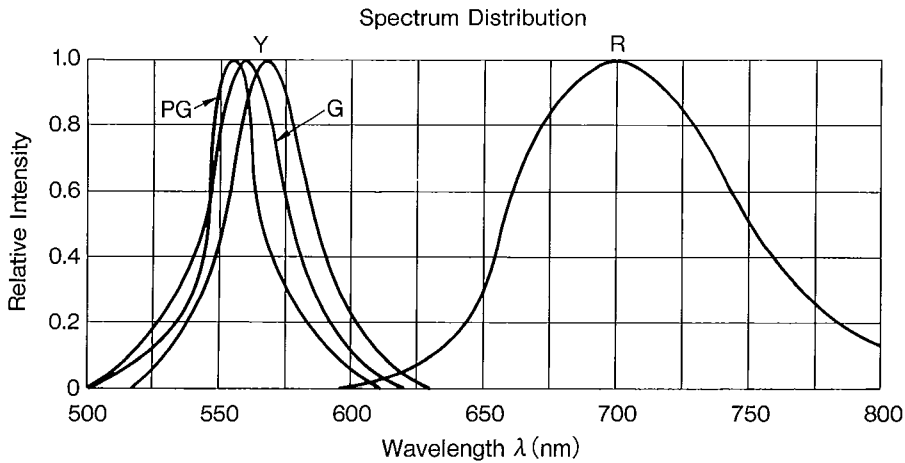


Fig. 1 : Relative Intensity vs. Wavelength

Individual Specifications

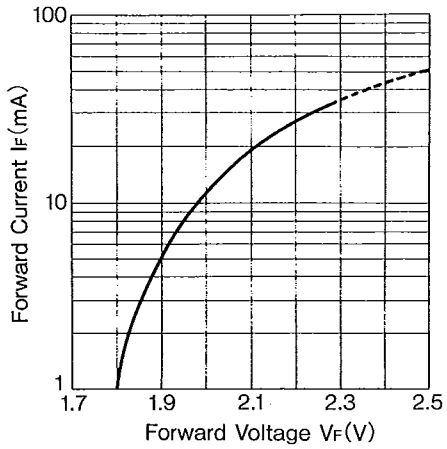


Fig.2 : Forward Current vs. Forward Voltage

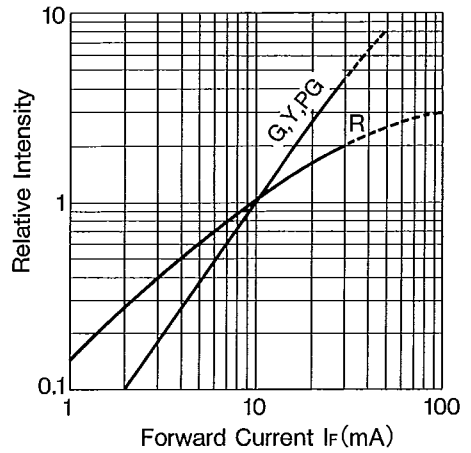


Fig.3 : Relative Intensity vs. Forward Current

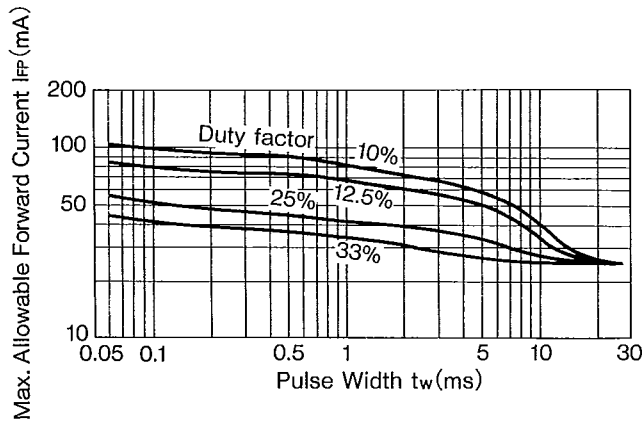


Fig.4 : Max. Allowable Forward Current vs. Pulse Width

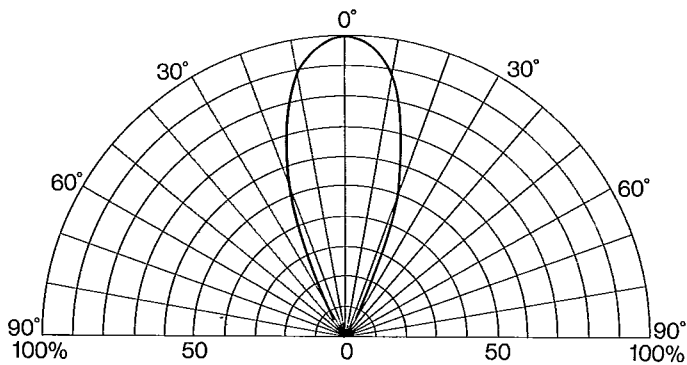


Fig.5 : Viewing Angle