

SANKEN

SANKEN
LIGHT EMITTING DIODES

Chip LED(For Surface Mount)

SEC1001 Series(1-Color)

SEC1101C SEC1501C SEC1901C
SEC1201C SEC1601C
SEC1401C SEC1801C

SEC2002 Series(2-Color)

SEC2422C
SEC2462C
SEC2492C

FEATURES

- Surface Mount Device(SMD)
- 2 times Reflow Soldering(EIAJ Specification: EDX:4701,5-3-2)Guaranteed
- Superb Anti-heat Shock Characteristics
- High Intensity,Long Life
- Wide Range Variation

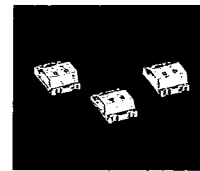
APPLICATIONS

- Car Audio Set,Telephone Set
- General Use
- Communication Devices

SEC1001 Series

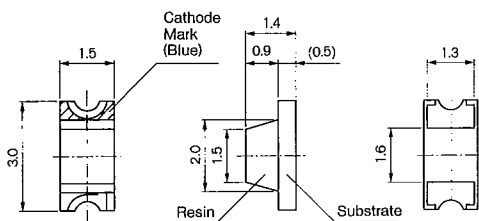


SEC2002 Series

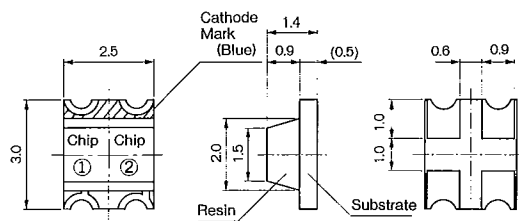


Package Dimensions

SEC1001 Series



SEC2002 Series



Unit : mm Tolerance : ±0.2

Individual Specifications

Intensity Ranks

(SEC1001 Series)

Type No.	Intensity Iv (mcd)	Condition I _F (mA)	Color	
			Lens	Chip
SEC1101C B C D	0.6 to 1.2 0.8 to 1.6 1.0 to 2.0	20	c	R
SEC1201C B C D	3.4 to 6.7 5.0 to 10.0 7.5 to 15.0	20	c	HIR
SEC1401C B C D	7.5 to 15.0 11.0 to 22.0 16.5 to 33.0	20	c	G
SEC1501C B C D	3.2 to 6.4 4.2 to 8.4 5.6 to 11.2	20	c	PG
SEC1601C B C D	30.0 to 60.0 45.0 to 90.0 67.5 to 135.0	20	c	UHIR
SEC1801C B C D	7.2 to 14.4 9.6 to 19.2 12.8 to 25.6	20	c	A
SEC1901C B C D	4.9 to 9.8 6.5 to 13.0 8.7 to 17.4	20	c	O

A=Amber C=Colorless Transparent
G=Green HIR=High Intensity Red
O=Orange PG=Pure Green R=Red
UHIR=Ultra High Intensity Red

Intensity Ranks

(SEC2002 Series)
(1F=20mA, Lens Color=C)

(SEC2422C)

unit : mcd

7.0 to 15.4	7.9 to 17.4	C1	D2
		D1	
4.8 to 10.5		B	C2
Red Green		7.5 to 16.4	12.4 to 27.3
		11.0 to 24.2	

(SEC2462C)

unit : mcd

9.9 to 21.8	11.7 to 25.7	C1	D2
		D1	
6.5 to 14.5		B	C2
Red Green		7.5 to 16.4	12.4 to 27.3
		11.0 to 24.2	

(SEC2492C)

unit : mcd

7.6 to 17.3	C1	D
3.5 to 10.4	B	C2
Orange Green	7.5 to 19.1	14.1 to 31.7

(SEC1001 Series)

Electro-Optical Characteristics (Ta = 25°C)							
Symbol	Description	Type No.	Min.	Typ.	Max.	Unit	Test Condition
V _F	DC Forward Voltage	SEC1101 C		2.0	2.5	V	I _F =10 (mA)
		SEC1201 C		1.9	2.5		
		SEC1401 C		2.0	2.5		
		SEC1501 C		2.0	2.5		
		SEC1601 C		1.7	2.2		
		SEC1801 C		1.9	2.5		
		SEC1901 C		1.9	2.5		
I _R	DC Reverse Current	SEC1101 C			100	μA	V _R =4V
		SEC1201 C			100		
		SEC1401 C			100		
		SEC1501 C			100		
		SEC1601 C			100		
		SEC1801 C			100		
		SEC1901 C			100		
λ _p	Peak Wavelength	SEC1101 C		700		nm	
		SEC1201 C		630			
		SEC1401 C		560			
		SEC1501 C		555			
		SEC1601 C		660			
		SEC1801 C		610			
		SEC1901 C		587			
Δλ	Spectrum Half Value Width	SEC1101 C		100		nm	
		SEC1201 C		35			
		SEC1401 C		20			
		SEC1501 C		20			
		SEC1601 C		30			
		SEC1801 C		35			
		SEC1901 C		35			
λ _d	Dominant Wavelength	SEC1101 C		650		nm	See Note 1
		SEC1201 C		626			
		SEC1401 C		562			
		SEC1501 C		555			
		SEC1601 C		655			
		SEC1801 C		608			
		SEC1901 C		585			

(SEC2002 Series)

Electro-Optical Characteristics (Ta = 25°C)										
Symbol	Description	Type No.	Green chip①			Red chip② (SEC2492C=Orange)			Unit	Test Condition
			Min.	Typ.	Max.	Min.	Typ.	Max.		
V _F	DC Forward Voltage	SEC2422 C		2.0	2.5		1.9	2.5	V	I _F =10 (mA)
		SEC2462 C		2.0	2.5		1.7	2.5		
		SEC2492 C		2.0	2.5		1.9	2.5		
I _R	DC Reverse Current	SEC2422 C			100			100	μA	V _R =4V
		SEC2462 C			100			100		
		SEC2492 C			100			100		
λ _p	Peak Wavelength	SEC2422 C		560			630		nm	
		SEC2462 C		560			660			
		SEC2492 C		560			587			
Δλ	Spectrum Half Value Width	SEC2422 C		20			35		nm	
		SEC2462 C		20			30			
		SEC2492 C		20			33			
λ _d	Dominant Wavelength	SEC2422 C		562			626		nm	See Note 1
		SEC2462 C		562			655			
		SEC2492 C		562			585			

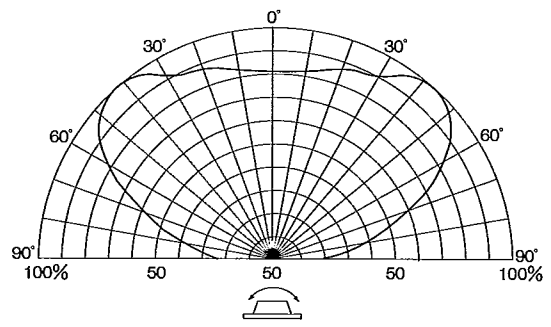
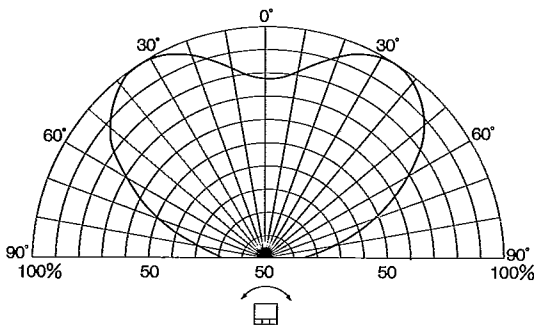
Notes : 1. The dominant wavelength, λ_d, is derived from the CIE chromaticity diagram and it represents the single wavelength which defines the color of the device

Absolute Maximum Ratings (Ta = 25°C)

(SEC1001 Series)

Symbol	Description	Ratings	Unit
P _d	Power Dissipation	75	mW
I _F	Max. DC Forward Current *1	30	mA
V _R	DC Reverse Voltage	4	V
I _{FP}	Transient Max. Peak Forward Current (100 μsec Pulse)	70	mA
T _{op}	Operating Temp. Range	-30 to +85	°C
T _{stg}	Storage Temp. Range	-30 to +90	

Notes : 1. 0.46 mA/°C



Viewing Angle (SEC1001 Series)

(SEC2002 Series)

Symbol	Description	Ratings*3	Unit
P _d	Power Dissipation*1	75	mW
I _F	Max. DC Forward Current *2	30	mA
V _R	DC Reverse Voltage	4	V
I _{FP}	Transient Max. Peak Forward Current*3 (100 μsec Pulse)	70	mA
T _{op}	Operating Temp. Range	-30 to +85	°C
T _{stg}	Storage Temp. Range	-30 to +90	

Notes : *1. Rating when LED emits either green, orange or red color. When LED emits both colors at the same time, the maximum power dissipation should be the sum of 1/2 of the power dissipated by each color.

*2. 0.46mA/°C

*3. Rating each of Green, Red and Orange.