



# SML-31 series

1608(0603)  
1.6 × 0.8mm(t=0.8mm)

### Features

- 1608 standard size(1.6 × 0.8mm, t=0.8mm)
- Abundant color variations with diverse luminous intensity types

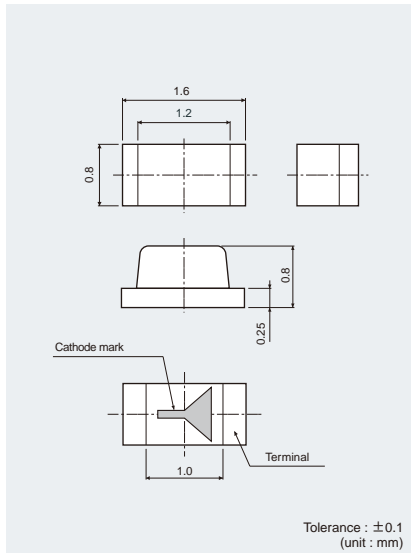


### Product Specifications

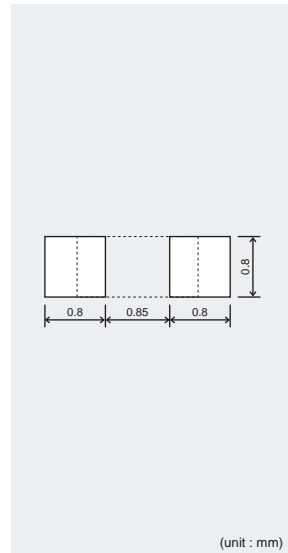
Part No.	LED chip	Emitting color	Absolute maximum ratings (Ta=25°C)					Electrical and optical characteristics (Ta=25°C)												
			Power dissipation PD(mW)	Forward current IF(mA)	Peak forward current IFP(mA)	Reverse voltage VR(V)	Operating temperature Topr(°C)	Storage temperature Tstg(°C)	Forward voltage VF (V)		Reverse current IR (μA)		Dominant wavelength λD (nm)			Luminous intensity Iv (mcd)				
<b>SML-310VT</b>	GaAsP on GaP	Red	55						2	20			625	630	635	20	1.4	4	20	
<b>SML-311UT</b>	AlGaInP on GaAs			44					1.8	2			615	620	625	2	0.9	2.5	2	
<b>SML-311DT</b>			Orange										602	605	608		1.6	3.15		
<b>SML-310DT</b>	GaAsP on GaP			55					2	20						20	2.2	6.3	20	
<b>SML-311WT</b>	AlGaInP on GaAs	Yellow	44		60 <sub>±1</sub>	4		-40 to +85	1.8	2		4	587	590	593	2	0.9	2.5	2	
<b>SML-311YT</b>														584	587	590		2.2	6.3	
<b>SML-310YT</b>	GaAsP on GaP			20			-30 to +85	2.1		100										
<b>SML-310MT</b>	GaP	Yellowish Green	55										567	570	573		3.6	16		
<b>SML-310PT</b>		Green							2.2					557	560	563		1.4	4	
<b>SML312ECT</b>	InGaN	Bluish Green							3.3	20			520	527	535	20	90	200	20	
<b>SML312EC4T</b>									3.2					525				36	90	
<b>SML312BCT</b>		Blue		84		100 <sub>±2</sub>	5		-40 to +100	3.3		5								63
<b>SML312BC4T</b>										3.2				464	470	476		22		46

※1:Duty1/5, 200Hz / ※2:Duty1/10, 1kHz

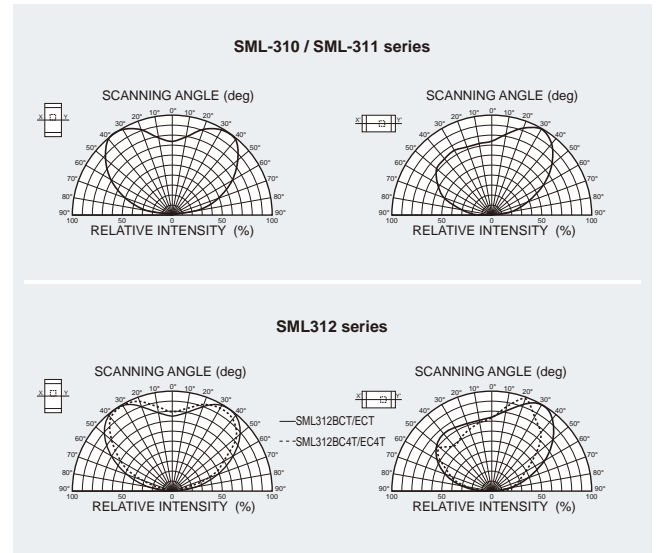
### Dimensions



### Recommended Solder Pattern

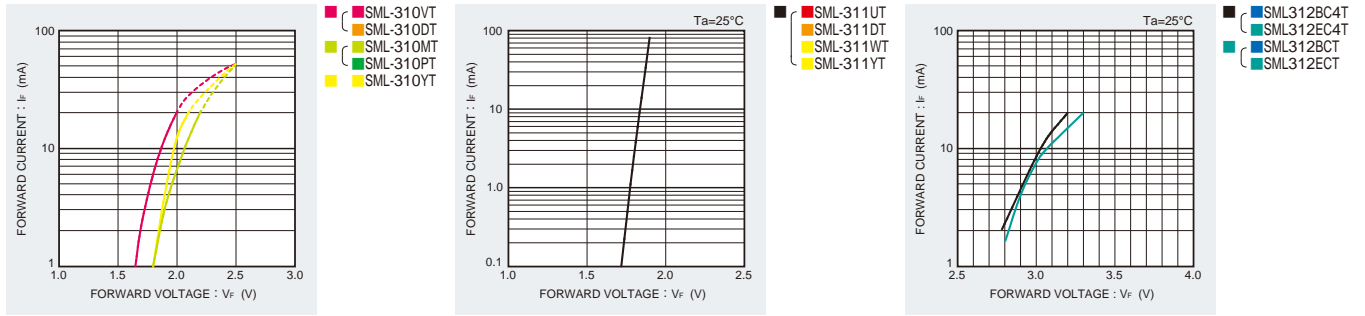


### Viewing Angle

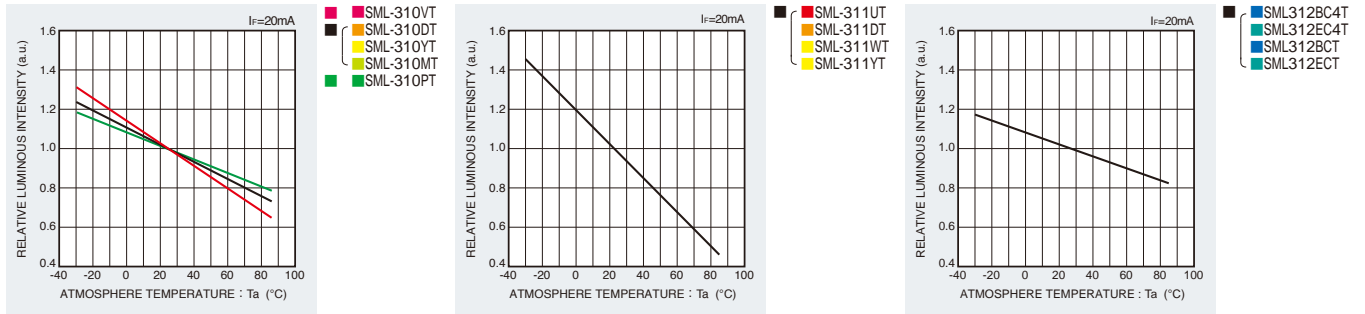


## Electrical Characteristics Curves

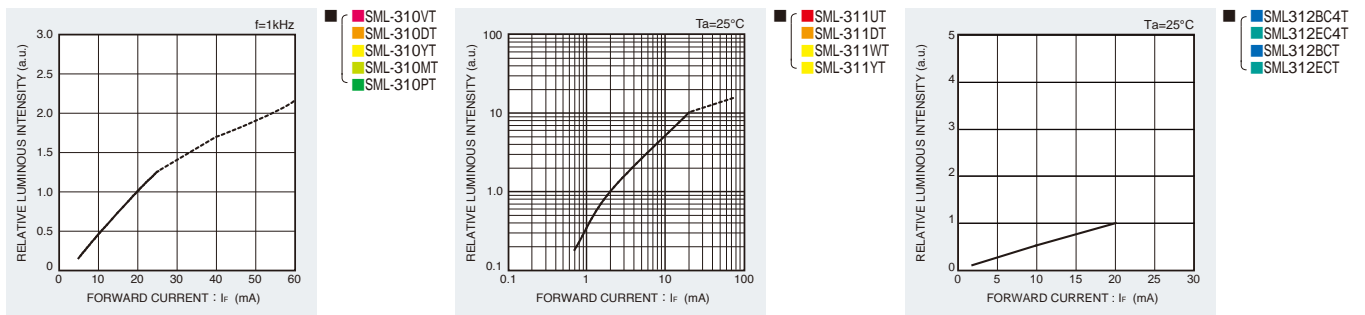
### Forward Current-Forward Voltage



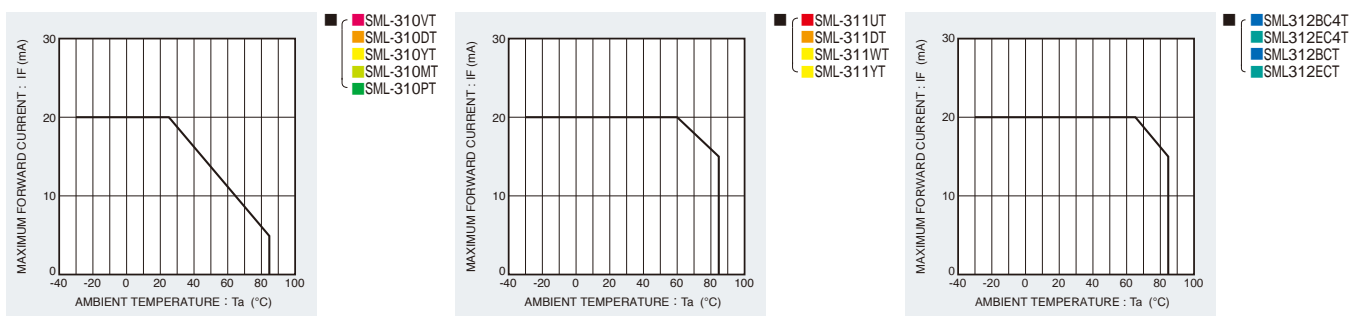
### Luminous Intensity-Atmosphere Temperature



### Luminous Intensity-Forward Current



### Deratings



# SML-31 series

## Rank Reference of Brightness

### Red (V, U)

(Ta=25°C, If=20mA)

Package size(mm)	Height(mm)	Luminous Intensity (mcd)	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X		
			1.0 to 1.6	1.6 to 2.5	2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250	250 to 400	400 to 630	630 to 1000	1000 to 1600		
Mini-mold Chip LEDs	1608	0.8	SML-311UT <sup>※1</sup>																	
			SML-310VT <sup>※</sup>																	

### Orange (D)

(Ta=25°C, If=2mA)

Package size(mm)	Height(mm)	Luminous Intensity (mcd)	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	
			1.0 to 1.6	1.6 to 2.5	2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250	250 to 400	400 to 630	630 to 1000	1000 to 1600	
Mini-mold Chip LEDs	1608	0.8	SML-311DT																

### Yellow (Y, W)

(Ta=25°C, If=20mA)

Package size(mm)	Height(mm)	Luminous Intensity (mcd)	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	
			1.0 to 1.6	1.6 to 2.5	2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250	250 to 400	400 to 630	630 to 1000	1000 to 1600	
Mini-mold Chip LEDs	1608	0.8	SML-311YT <sup>※1</sup>																
			SML-311WT <sup>※1</sup>																
			SML-310YT <sup>※</sup>																

### Green (M, P, E)

(Ta=25°C, If=20mA)

Package size(mm)	Height(mm)	Luminous Intensity (mcd)	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
			0.63 to 1.0	1.0 to 1.6	1.6 to 2.5	2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250	250 to 400	400 to 630	630 to 1000	1000 to 1600
Mini-mold Chip LEDs	1608	0.8	SML-310MT <sup>※</sup>												SML312ECT <sup>※</sup>				
			SML-310PT <sup>※</sup>								SML312EC4T <sup>※</sup>								

### Blue (B)

(Ta=25°C, If=20mA)

Package size(mm)	Height(mm)	Luminous Intensity (mcd)	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	
			0.9 to 1.4	1.4 to 2.2	2.2 to 3.6	3.6 to 5.6	5.6 to 9.0	9 to 14	14 to 22	22 to 36	36 to 56	56 to 90	90 to 140	140 to 220	220 to 360	360 to 560	560 to 900	
Mini-mold Chip LEDs	1608	0.8										SML312BC4T						
												SML312BCT						

※Brightness on specification sheet include tolerance of within ±10%. ※1:If=2mA

## Part No. Construction

\* "-" will be taken out for emitting color B/E series.

Special Code will be applied for Emitting color B/E series.



- \* Concerning the Brightness rank
- Please refer to the rank chart above for luminous intensity classification.
- Part name is individual for each rank.
- When shipped as sample, the part name will be a representative part name.

## Packing Specification

ROHM LED products are being shipped with desiccant (silica gel) concluded in moisture-proof bags. Pasting the moisture sensitive label on the outer surface of the moisture-proof bags or enclosing the humidity indication card inside the bag is available upon request. Please contact the nearest sales office or distributor if necessary.

## Notes

- 1) The information contained herein is subject to change without notice.
- 2) Before you use our Products, please contact our sales representative and verify the latest specifications :
- 3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.  
Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by ROHM.
- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
- 5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.
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- 7) The Products specified in this document are not designed to be radiation tolerant.
- 8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.
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<http://www.rohm.com/contact/>

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- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
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- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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