



# 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

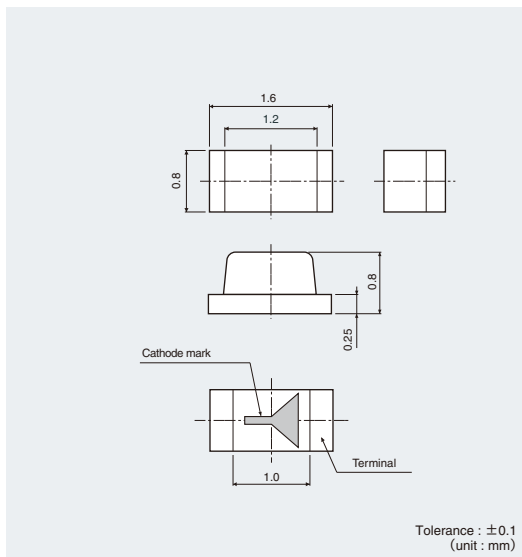


### Product Specifications

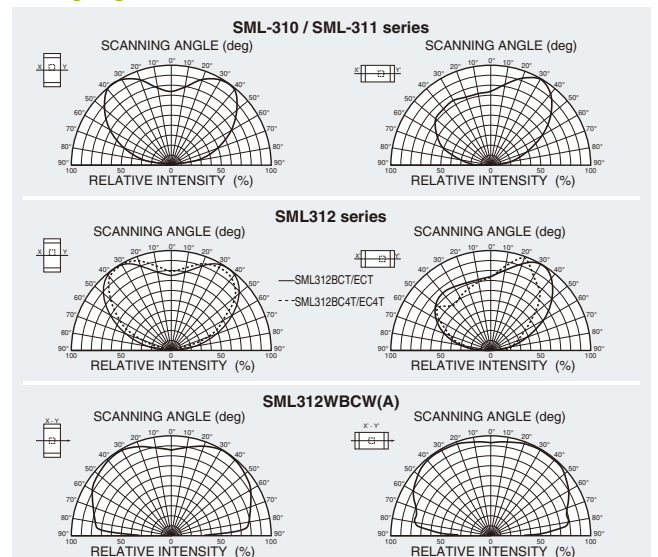
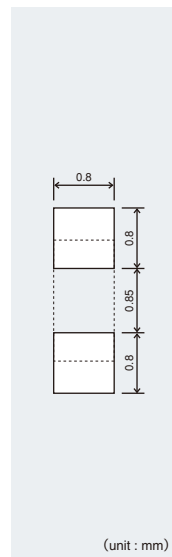
Part No.	LED chip	Emitting color	Absolute maximum ratings (Ta=25°C)					Electrical and optical characteristics (Ta=25°C)											
			Power dissipation PD (mW)	Forward current IF (mA)	Peak forward current I <sub>FP</sub> (mA)	Reverse voltage VR (V)	Operating temperature Topr (°C)	Storage temperature Tsig (°C)	Forward voltage VF (V)		Reverse current IR (μA)		Dominant wavelength λD (nm)			Luminous intensity Iv (mcd)			
								Typ.	Max.	Max.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
■ SML-310VT	GaAsP on GaP	Red	55					2	20			625	630	635	20	1.4	4	20	
■ SML-311UT	AlGaInP on GaAs			44					1.8	2			615	620	625	2	0.9	2.5	2
■ SML-311DT			Orange																
■ SML-310DT	GaAsP on GaP			55					2	20			602	605	608	20	2.2	6.3	20
■ SML-311WT	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
■ SML-311YT																			
■ SML-310YT	GaAsP on GaP			20			-30 to +85	2.1		100		584	587	590		2.2	6.3		
■ SML-310MT	GaP	Yellowish Green	55					2.2				567	570	573		3.6	16		
■ SML-310PT		Green											557	560	563		1.4	4	
■ SML312ECT	InGaN	Bluish Green						3.3	20			520	527	535	20	90	200	20	
■ SML312EC4T								3.2					525				36	90	
■ SML312BCT		Blue		84		100 <sub>±2</sub>	5		3.3		5		464	470	476		22	63	
■ SML312BC4T								3.2										46	
□ SML312WBCW(A)		White	108	30	100 <sub>±2</sub>		-40 to +100	3.0	5			(x, y) (0.30, 0.29)		5	45	71	5		

※1:Duty 1/5, 200Hz / ※2:Duty 1/10, 1kHz

### Dimensions

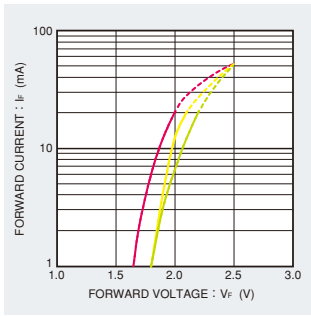


### Recommended Solder Pattern Viewing Angle

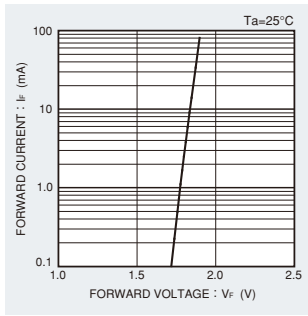


## Electrical Characteristics Curves

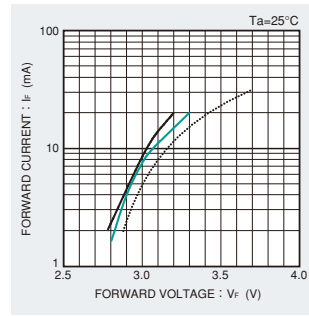
### Forward Current-Forward Voltage



- SML-310VT
- SML-310DT
- SML-310YT
- SML-310MT
- SML-310PT

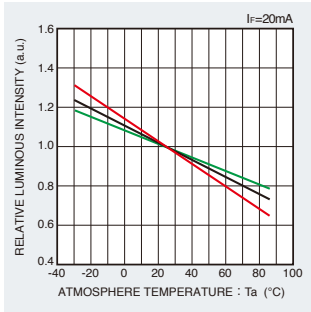


- SML-311UT
- SML-311DT
- SML-311WT
- SML-311YT

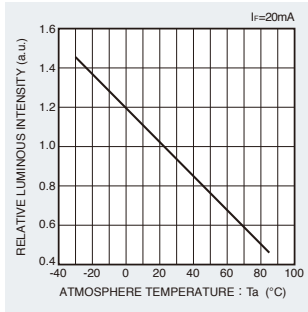


- SML312BC4T
- SML312EC4T
- SML312BCT
- SML312ECT
- SML312WBCW(A)

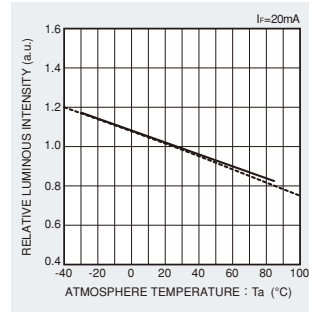
### Luminous Intensity-Atmosphere Temperature



- SML-310VT
- SML-310DT
- SML-310YT
- SML-310MT
- SML-310PT

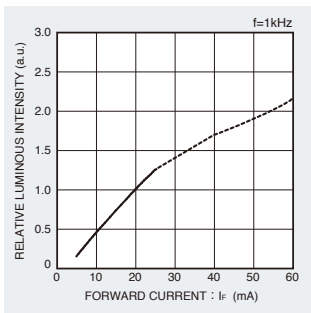


- SML-311UT
- SML-311DT
- SML-311WT
- SML-311YT

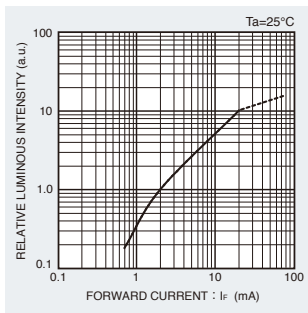


- SML312BC4T
- SML312EC4T
- SML312BCT
- SML312ECT
- SML312WBCW(A)

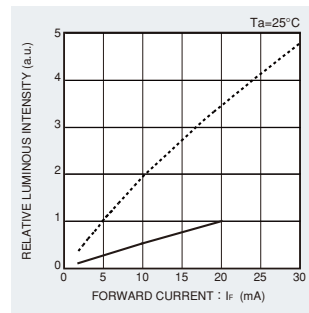
### Luminous Intensity-Forward Current



- SML-310VT
- SML-310DT
- SML-310YT
- SML-310MT
- SML-310PT

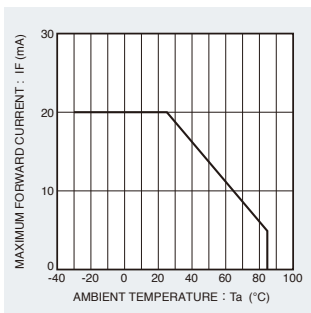


- SML-311UT
- SML-311DT
- SML-311WT
- SML-311YT

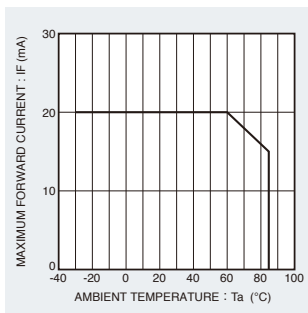


- SML312BC4T
- SML312EC4T
- SML312BCT
- SML312ECT
- SML312WBCW(A)

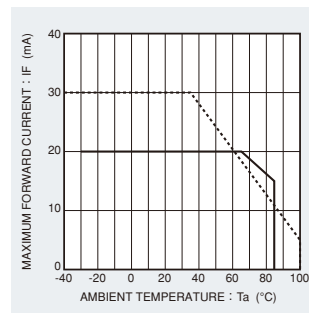
### Deratings



- SML-310VT
- SML-310DT
- SML-310YT
- SML-310MT
- SML-310PT



- SML-311UT
- SML-311DT
- SML-311WT
- SML-311YT



- SML312BC4T
- SML312EC4T
- SML312BCT
- SML312ECT
- SML312WBCW(A)

# 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 1800
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						

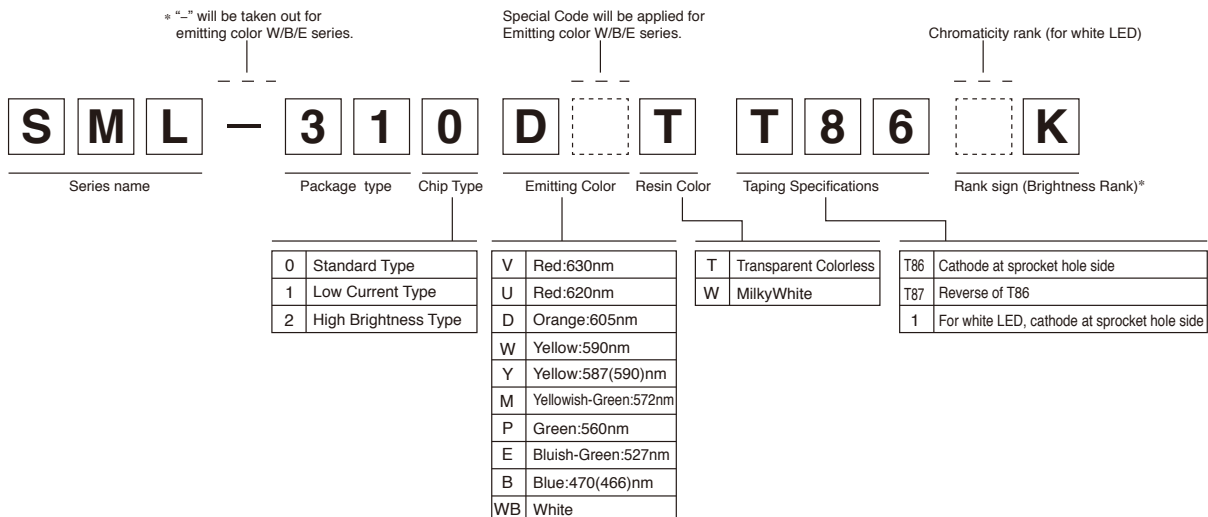
### White (WB)

(Ta=25°C, If=5mA)

Package size(mm)	Height(mm)	Luminous Intensity (mcd)	P	Q	R	S	T	U	V	W	X1	X2	Y1	Y2	Z1	
			25 to 36	36 to 56	56 to 90	90 to 140	140 to 220	220 to 360	360 to 560	560 to 900	900 to 1100	1100 to 1400	1400 to 1800	1800 to 2200	2200 to 2800	
Mini-mold Chip LEDs	1608	0.8	SML312WBCW(A)													

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

## Part No. Construction



- 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.
- General products are free of ranks. Please contact sales if rank appointment is needed.

## 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.

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