




# SML-Z1 series

Actual size  
 3528(1411)  
 3.5×2.8mm(t=1.9mm)

### Features

- High brightness
- 20/50mA guaranteed specifications
- PLCC2 package

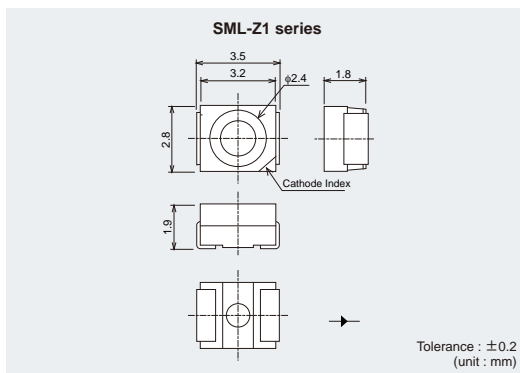


### Specifications

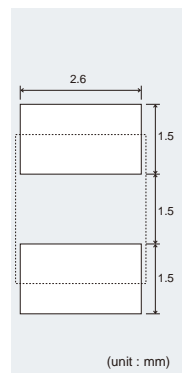
Part No.	Chip Structure	Emitting Color	Absolute Maximum Ratings (Ta=25°C)					Electrical and Optical Characteristics (Ta=25°C)											
			Power Dissipation Pd (mW)	Forward Current If (mA)	Peak Forward Current I <sub>FP</sub> (mA)	Reverse Voltage Vr (V)	Operating Temperature Topr (°C)	Storage Temperature Tsig (°C)	Forward Voltage V <sub>F</sub> Typ. (V)	Forward Current I <sub>F</sub> (mA)	Reverse Current I <sub>R</sub> Max. (μA)	Reverse Voltage Vr (V)	Dominant Wavelength λ <sub>D</sub> Min. <sup>*2</sup> (nm)	Typ. (nm)	Max. <sup>*2</sup> (nm)	Luminous Intensity I <sub>v</sub> (mA)	Min. (mcd)	Typ. (mcd)	I <sub>v</sub> (mA)
■ SML-Z14VT(A)	AlGaInP	Red	168	70	200 <sup>*1</sup>	12	-40 to +100	-40 to +100	1.9				625	630	635		56	112	
■ SML-Z14UT(A)													615	620	625		112	224	
■ SML-Z14DT(A)		Orange	175	70	200 <sup>*1</sup>	12	-40 to +100	-40 to +100	2.0				602	605	608	20	140	280	20
■ SML-Z14YT(A)													586	589	592		45	90	
■ SML-Z14MT(A)		Yellowish Green	175	70	200 <sup>*1</sup>	12	-40 to +100	-40 to +100	2.0				568	571	574	20	22.4	45	
■ SML-Z14FT(A)													561.5	564	566.5		11.2	22.4	
■ SML-Z14PT(A)		Green	175	70	200 <sup>*1</sup>	12	-40 to +100	-40 to +100	2.0				557	560	563	20	140	280	
■ SML-Z14V4T													615	620	625		280	560	
■ SML-Z14U4T		Orange	189	70	200 <sup>*1</sup>	12	-40 to +100	-40 to +100	2.1				602	605	608	50	355	710	50
■ SML-Z14D4T													587	590	593		112	224	
■ SML-Z14Y4T	Yellowish Green	189	70	200 <sup>*1</sup>	12	-40 to +100	-40 to +100	2.1				569	572	575	20	71	120		
■ SML-Z14M4T												562	565	568		22.4	56		
■ SML-Z14F4T	Green	189	70	200 <sup>*1</sup>	12	-40 to +100	-40 to +100	2.1				558	561	564	20	22.4	56		
■ SML-Z14P4T												519	528	536		710	1,100		
■ SMLZ14EGT(A)	InGaN	Bluish Green	120	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	3.3	20	10	5	464	470	476	20	140	280	20
■ SMLZ14BGT(A)		Blue	120	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	3.2	20	10	5	464	470	476	20	140	280	20
□ SMLZ14WBGAW(A)	InGaN	White	114	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	3.3	20	100	5	(x, y) (0.36, 0.36)	20	900	1,400	20		
□ SMLZ14WBGBW(A)													(x, y) (0.44, 0.40)						
□ SMLZ14WBGCW(A)													(x, y) (0.30, 0.28)		1,400	2,200			
□ SMLZ14WBGDW(A)													(x, y) (0.34, 0.34)						

\* 1:Duty1/10, 1kHz \* 2:Duty1/5, 200Hz \* 3:Reference

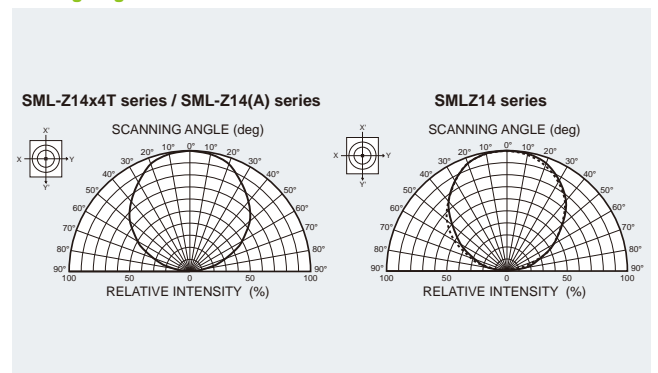
### Dimensions



### Recommended Solder Pattern

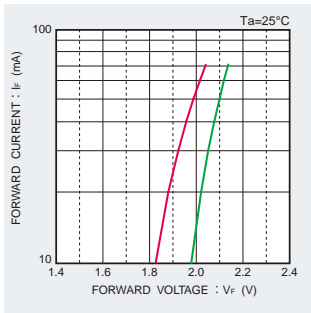


### Viewing Angle

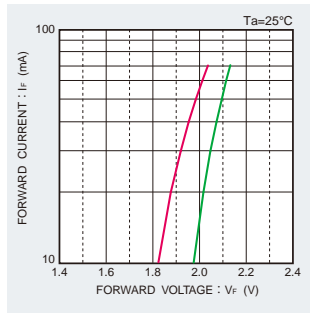


## Electrical Characteristics Curves

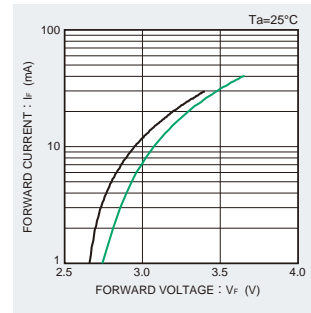
### Forward Current-Forward Voltage



- SML-Z14VT(A)
- SML-Z14UT(A)
- SML-Z14DT(A)
- SML-Z14YT(A)
- SML-Z14MT(A)
- SML-Z14FT(A)
- SML-Z14PT(A)

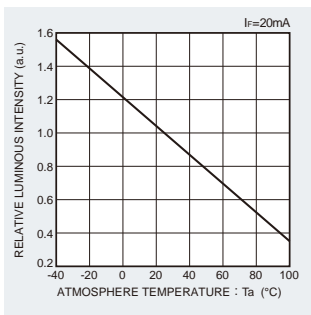


- SML-Z14V4T
- SML-Z14U4T
- SML-Z14D4T
- SML-Z14Y4T
- SML-Z14M4T
- SML-Z14F4T
- SML-Z14P4T

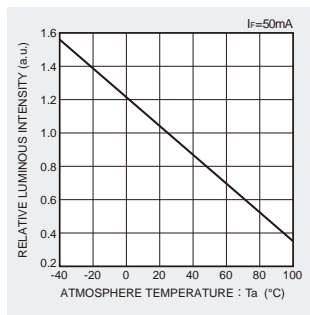


- SMLZ14EGT(A)
- SMLZ14BGT(A)
- SMLZ14WBGAW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)

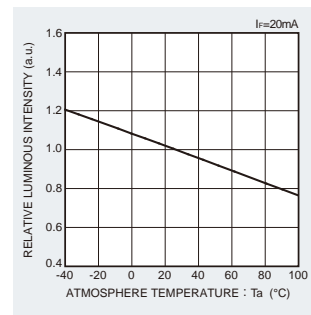
### Luminous Intensity-Atmosphere Temperature



- SML-Z14VT(A)
- SML-Z14UT(A)
- SML-Z14DT(A)
- SML-Z14YT(A)
- SML-Z14MT(A)
- SML-Z14FT(A)
- SML-Z14PT(A)

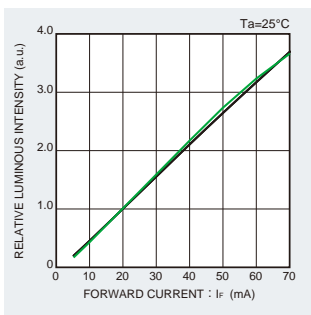


- SML-Z14V4T
- SML-Z14U4T
- SML-Z14D4T
- SML-Z14Y4T
- SML-Z14M4T
- SML-Z14F4T
- SML-Z14P4T

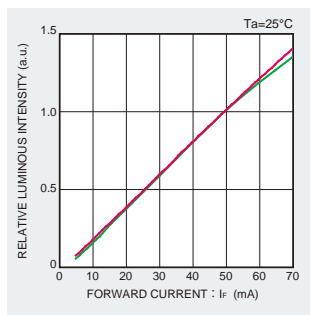


- SMLZ14EGT(A)
- SMLZ14BGT(A)
- SMLZ14WBGAW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)

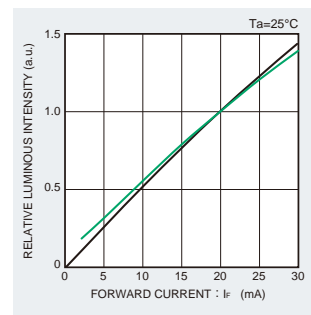
### Luminous Intensity-Forward Current



- SML-Z14VT(A)
- SML-Z14UT(A)
- SML-Z14DT(A)
- SML-Z14YT(A)
- SML-Z14MT(A)
- SML-Z14FT(A)
- SML-Z14PT(A)

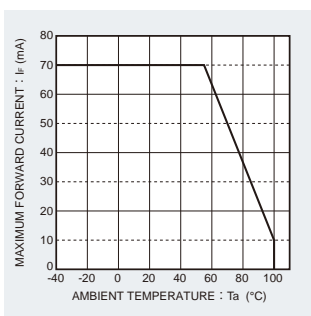


- SML-Z14V4T
- SML-Z14U4T
- SML-Z14D4T
- SML-Z14Y4T
- SML-Z14M4T
- SML-Z14F4T
- SML-Z14P4T

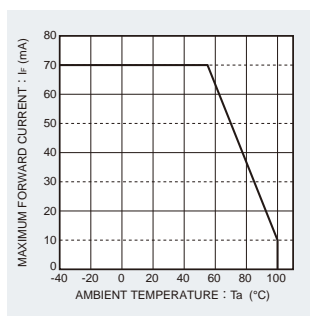


- SMLZ14EGT(A)
- SMLZ14BGT(A)
- SMLZ14WBGAW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)

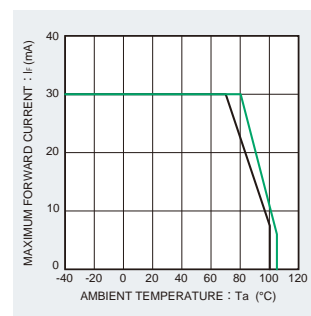
### Derating



- SML-Z14VT(A)
- SML-Z14UT(A)
- SML-Z14DT(A)
- SML-Z14YT(A)
- SML-Z14MT(A)
- SML-Z14FT(A)
- SML-Z14PT(A)



- SML-Z14V4T
- SML-Z14U4T
- SML-Z14D4T
- SML-Z14Y4T
- SML-Z14M4T
- SML-Z14F4T
- SML-Z14P4T



- SMLZ14EGT(A)
- SMLZ14BGT(A)
- SMLZ14WBGAW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)
- SMLZ14WBGW(A)

# SML-Z1 Series

## Rank Reference of Brightness

### Red (V, U)

Package structure	Package size	Height (mm)	Luminous Intensity (mcd) I <sub>F</sub> (mA)	AM	AN	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE
				28 to 35.5	35.5 to 45	45 to 56	56 to 71	71 to 90	90 to 112	112 to 140	140 to 180	180 to 224	224 to 280	280 to 355	355 to 450	450 to 560	560 to 710	710 to 900	900 to 1120	1120 to 1400	1400 to 1800
PLCC2	3528	1.9	20	SML-Z14VT(A)				SML-Z14V4T				SML-Z14UT(A)				SML-Z14U4T					
			50																		

### Orange (D)

Package structure	Package size	Height (mm)	Luminous Intensity (mcd) I <sub>F</sub> (mA)	AM	AN	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE
				28 to 35.5	35.5 to 45	45 to 56	56 to 71	71 to 90	90 to 112	112 to 140	140 to 180	180 to 224	224 to 280	280 to 355	355 to 450	450 to 560	560 to 710	710 to 900	900 to 1120	1120 to 1400	1400 to 1800
PLCC2	3528	1.9	20					SML-Z14DT(A)				SML-Z14D4T									
			50																		

### Yellow (Y)

Package structure	Package size	Height (mm)	Luminous Intensity (mcd) I <sub>F</sub> (mA)	AM	AN	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE
				28 to 35.5	35.5 to 45	45 to 56	56 to 71	71 to 90	90 to 112	112 to 140	140 to 180	180 to 224	224 to 280	280 to 355	355 to 450	450 to 560	560 to 710	710 to 900	900 to 1120	1120 to 1400	1400 to 1800
PLCC2	3528	1.9	20					SML-Z14YT(A)				SML-Z14Y4T									
			50																		

### Green (M, P, F)

Package structure	Package size	Height (mm)	Luminous Intensity (mcd) I <sub>F</sub> (mA)	AG	AH	AJ	AK	AL	AM	AN	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
				9 to 11.2	11.2 to 14	14 to 18	18 to 22.4	22.4 to 28	28 to 35.5	35.5 to 45	45 to 56	56 to 71	71 to 90	90 to 112	112 to 140	140 to 180	180 to 224	224 to 280	280 to 355	355 to 450	450 to 560
PLCC2	3528	1.9	20	SML-Z14PT(A)				SML-Z14MT(A)				SML-Z14FT(A)				SML-Z14M4T					
			50					SML-Z14P4T				SML-Z14F4T									

### Bluish-Green (E)

Package structure	Package size	Height (mm)	Luminous Intensity (mcd) I <sub>F</sub> (mA)	S1	S2	T1	T2	U1	U2	V1	V2	W1	W2	X1	X2	Y1	Y2	Z1	Z2
				90 to 110	110 to 140	140 to 180	180 to 220	220 to 280	280 to 360	360 to 450	450 to 560	560 to 710	710 to 900	900 to 1100	1100 to 1400	1400 to 1800	1800 to 2200	2200 to 2800	2800 to 3600
PLCC2	3528	1.9	20	SMLZ14EGT(A)															

### Blue (B)

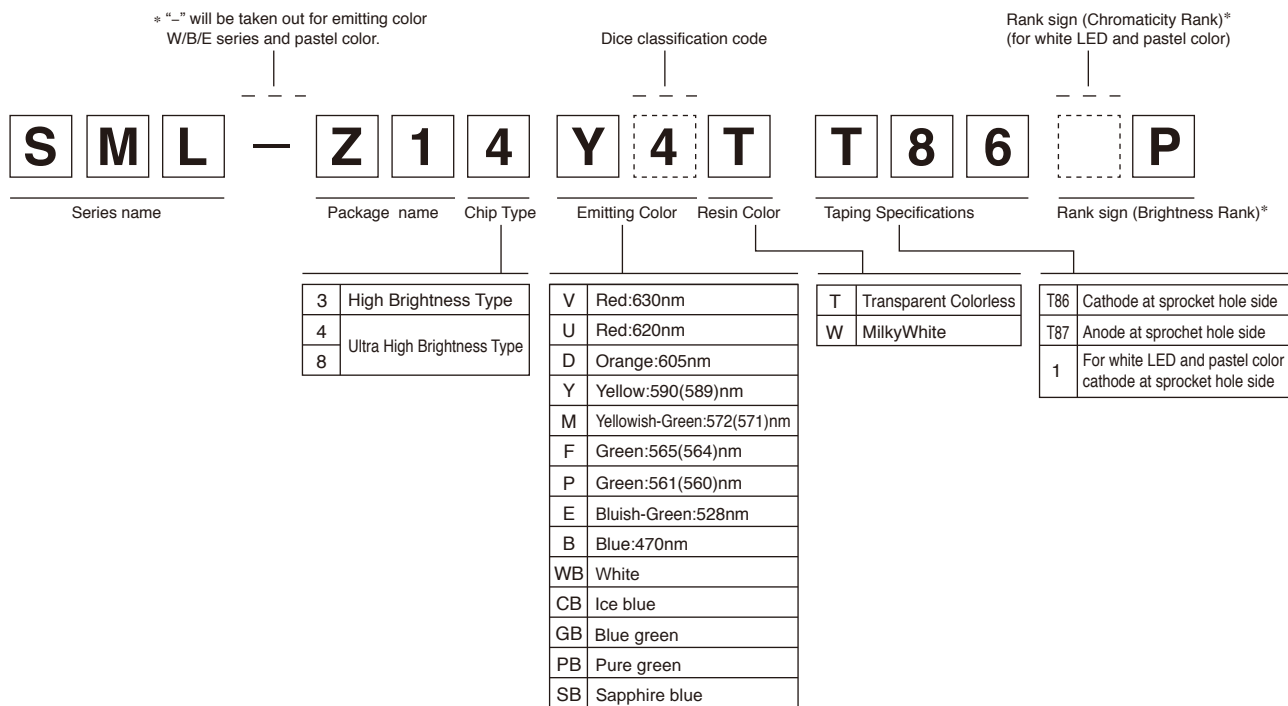
Package structure	Package size	Height (mm)	Luminous Intensity (mcd) I <sub>F</sub> (mA)	S1	S2	T1	T2	U1	U2	V1	V2	W1	W2	X1	X2	Y1	Y2	Z1	Z2
				90 to 110	110 to 140	140 to 180	180 to 220	220 to 280	280 to 360	360 to 450	450 to 560	560 to 710	710 to 900	900 to 1100	1100 to 1400	1400 to 1800	1800 to 2200	2200 to 2800	2800 to 3600
PLCC2	3528	1.9	20	SMLZ14BGT(A)															

### White (WB)

Package structure	Package size	Height (mm)	Luminous Intensity (mcd) I <sub>F</sub> (mA)	S1	S2	T1	T2	U1	U2	V1	V2	W1	W2	X1	X2	Y1	Y2	Z1	Z2
				90 to 110	110 to 140	140 to 180	180 to 220	220 to 280	280 to 360	360 to 450	450 to 560	560 to 710	710 to 900	900 to 1100	1100 to 1400	1400 to 1800	1800 to 2200	2200 to 2800	2800 to 3600
PLCC2	3528	1.9	20	SMLZ14WBGAW(A)															
				SMLZ14WBGBW(A)															
				SMLZ14WBGCW(A)															
				SMLZ14WBGDW(A)															

\* Please note that the brightness of some products may fall between ranks (half rank).

## Part No. Construction



- \* Concerning the rank sign.
  - Please refer to the rank chart above for luminous intensity classification.
  - Please refer to specification sheet for color 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.

## 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.
- 6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.
- 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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