

# SML-P1 Series

## PICOLED™-eco/PICOLED™

1006 (0402)  
1.0×0.6mm (t=0.2mm)

### Features

- Ultra compact, thin size 1.0×0.6mm
- Thinnest size in the world\* t=0.2mm
- Original device technology enables high brightness and high reliability
- Accomplishes low power consuming application
- Specification assured at I<sub>F</sub>=1mA (PICOLED™-eco)



\* Investigated Aug. 2009

### Specifications

#### PICOLED™-eco

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 I <sub>F</sub> (mA)	Peak Forward Current I <sub>FP</sub> (mA)	Reverse Voltage V <sub>R</sub> (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V <sub>F</sub> (V)	Reverse Current I <sub>R</sub> (μA)	Dominant Wavelength λ <sub>D</sub> (nm)	Viewing Angle 2θ (°)	Luminous Intensity I <sub>v</sub> (mcd)	Typ. I <sub>F</sub> (mA)			
<b>SML-P11VT</b>	AlGaInP on GaAs	Red	50	20	100 <sup>*1</sup>	5	-40 to +85	-40 to +100	1.8	10	4	621	626	631	1	1	3.6
<b>SML-P11UT</b>												616	621	626		1.6	5.5
<b>SML-P11DT</b>	AlGaInP on GaAs	Orange	52	20	100 <sup>*1</sup>	5	-40 to +85	-40 to +100	1.9	10	4	602	605	608	1	2.5	7.3
<b>SML-P11YT</b>		Yellow										583	586	589		7.6	
<b>SML-P11MT</b>		Yellowish Green										566	569	572		0.63	2.1

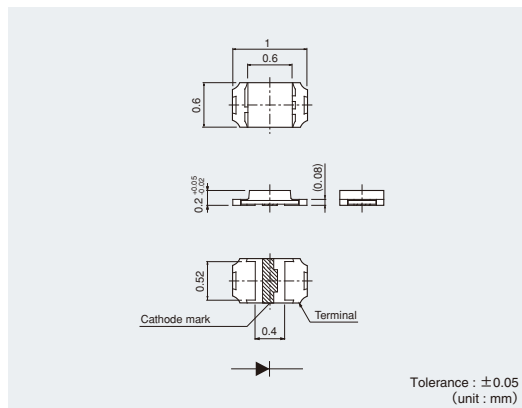
\* 1:Duty 1/10, 1kHz \* 2:Reference

#### PICOLED™

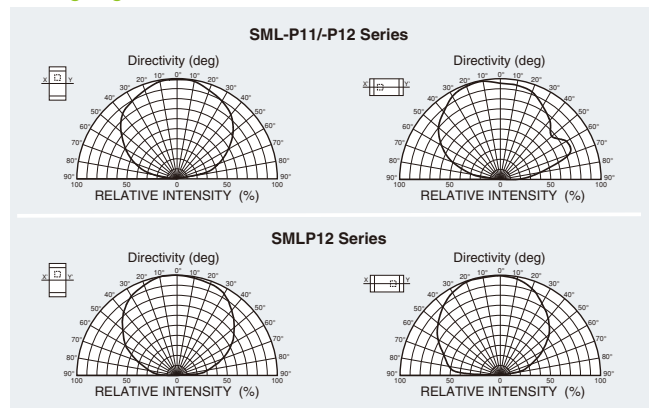
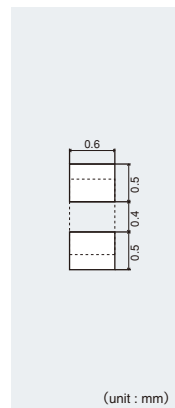
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			Power Dissipation Pd (mW)	Forward Current I <sub>F</sub> (mA)	Peak Forward Current I <sub>FP</sub> (mA)	Reverse Voltage V <sub>R</sub> (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V <sub>F</sub> (V)	Reverse Current I <sub>R</sub> (μA)	Dominant Wavelength λ <sub>D</sub> (nm)	Viewing Angle 2θ (°)	Luminous Intensity I <sub>v</sub> (mcd)	Typ. I <sub>F</sub> (mA)			
<b>SML-P12VT</b>	AlGaInP on GaAs	Red	50	20	100 <sup>*1</sup>	5	-40 to +85	-40 to +100	2.0	20	4	625	630	635	20	25	60
<b>SML-P12UT</b>												615	620	625		85	
<b>SML-P12DT</b>	AlGaInP on GaAs	Orange	52	20	100 <sup>*1</sup>	5	-40 to +85	-40 to +100	2.1	20	100	602	605	608	20	40	100
<b>SML-P12YT</b>		Yellow										587	590	593		130	
<b>SML-P12MT</b>		Yellowish Green										569	572	575		10	35
<b>SML-P12PT</b>	InGaIn	Green	66	20	100 <sup>*1</sup>	5	-40 to +85	-40 to +100	2.2	5	5	557	560	563	5	4.0	13
<b>SMLP12BC7T</b>		Blue										465	470	475		5.6	17
<b>SMLP12WBC7W</b>		White										2.9	5	5		(x, y) (0.30, 0.30)	5
<b>SMLP12HBC7W</b>	InGaIn	Pink	74	20	100 <sup>*1</sup>	5	-40 to +85	-40 to +100	2.9	5	10	(x, y) (0.23, 0.10)	5	14	22		

\* 1:Duty 1/10, 1kHz \* 2:Reference

### Dimensions



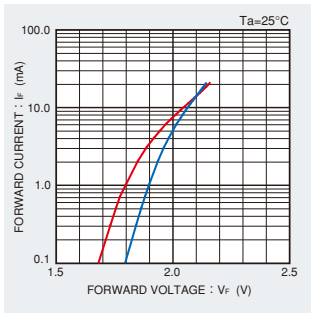
### Recommended Solder Pattern Viewing Angle



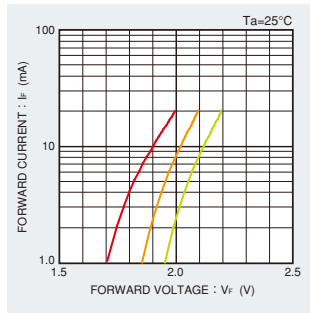
\* PICOLED™ is ROHM's pending trademark.

Electrical Characteristics Curves

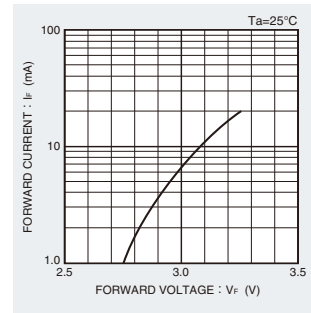
Forward Current-Forward Voltage



- SML-P11VT
- SML-P11UT
- SML-P11DT
- SML-P11YT
- SML-P11MT

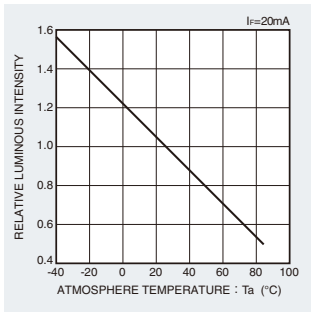


- SML-P12VT
- SML-P12UT
- SML-P12DT
- SML-P12YT
- SML-P12MT
- SML-P12PT

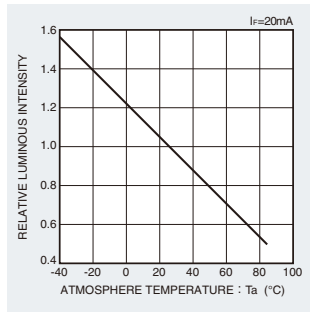


- SMLP12BC7T
- SMLP12WBC7W
- SMLP12HBC7W

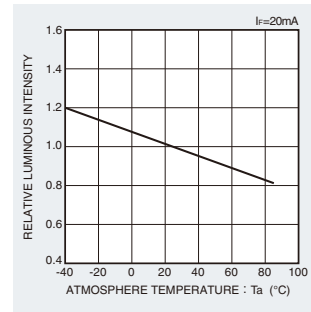
Luminous Intensity-Atmosphere Temperature



- SML-P11VT
- SML-P11UT
- SML-P11DT
- SML-P11YT
- SML-P11MT

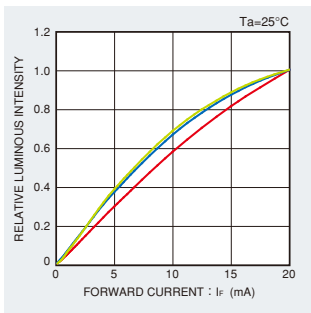


- SML-P12VT
- SML-P12UT
- SML-P12DT
- SML-P12YT
- SML-P12MT
- SML-P12PT

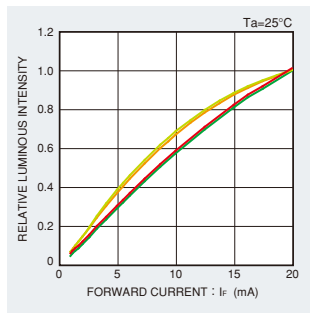


- SMLP12BC7T
- SMLP12WBC7W
- SMLP12HBC7W

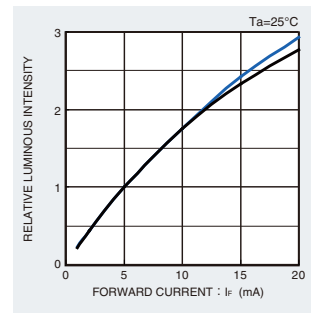
Luminous Intensity-Forward Current



- SML-P11VT
- SML-P11UT
- SML-P11DT
- SML-P11YT
- SML-P11MT

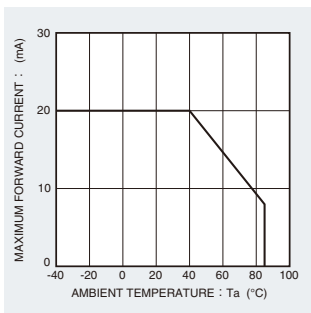


- SML-P12VT
- SML-P12UT
- SML-P12DT
- SML-P12YT
- SML-P12MT
- SML-P12PT

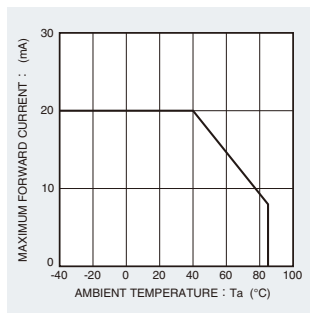


- SMLP12BC7T
- SMLP12WBC7W
- SMLP12HBC7W

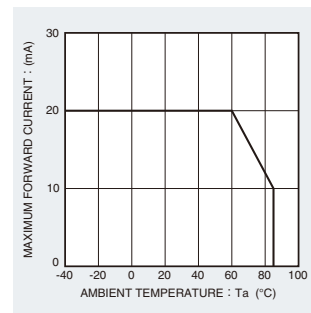
Derating



- SML-P11VT
- SML-P11UT
- SML-P11DT
- SML-P11YT
- SML-P11MT



- SML-P12VT
- SML-P12UT
- SML-P12DT
- SML-P12YT
- SML-P12MT
- SML-P12PT



- SMLP12BC7T
- SMLP12WBC7W
- SMLP12HBC7W

# SML-P1 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	1006	0.2	SML-P11VT*					SML-P12VT												
			SML-P11UT*					SML-P12UT												

### Orange (D)

(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	1006	0.2	SML-P11DT*					SML-P12DT												

### Yellow (Y)

(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	1006	0.2	SML-P11YT*					SML-P12YT												

### Green (M, P)

(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	1006	0.2	SML-P11MT*					SML-P12MT												
			SML-P12PT																	

### Blue (B)

(Ta=25°C, If=5mA)

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	1006	0.2	SMLP12BC7T														

### White (WB)

(Ta=25°C, If=5mA)

Package size(mm)	Height(mm)	Luminous Intensity (mcd)	N	P	Q	R	S	T	U	V	W		
			14 to 25	25 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	1006	0.2	SMLP12WBC7W										

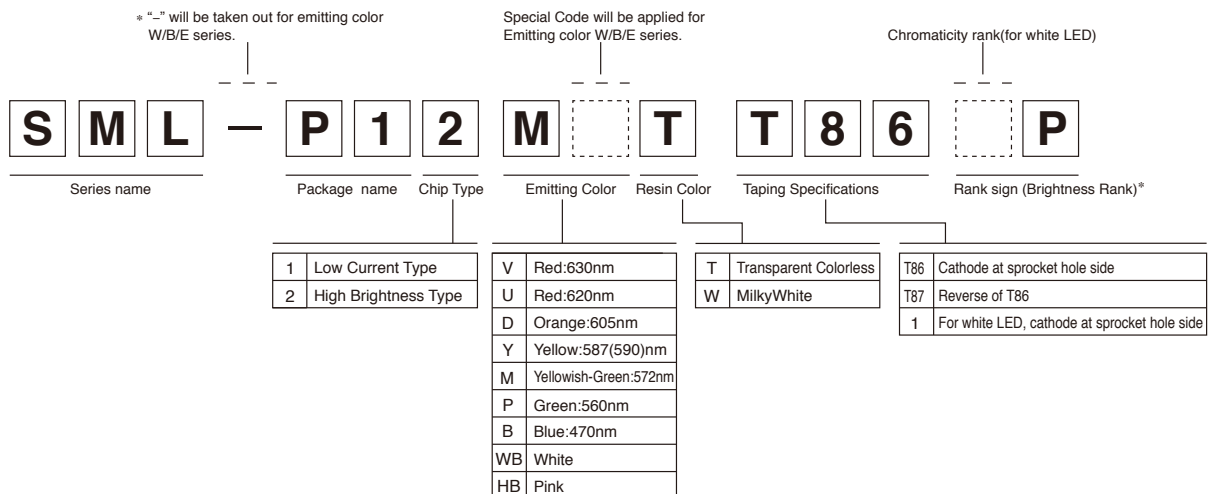
### Pink (HB)

(Ta=25°C, If=5mA)

Package size(mm)	Height(mm)	Luminous Intensity (mcd)	N	P	Q	R	S	T	U	V	W		
			14 to 25	25 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	1006	0.2	SMLP12HBC7W										

※:If=1mA

## 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.

## Notes

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