

# 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)

Color Type	V	U	D	Y
	M	P	B	WB
				HB

\* 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 P <sub>D</sub> (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)	Luminous Intensity I <sub>v</sub> (mcd)	Luminous Intensity I <sub>v</sub> (mcd)	Luminous Intensity I <sub>v</sub> (mcd)	Luminous Intensity I <sub>v</sub> (mcd)	Luminous Intensity I <sub>v</sub> (mcd)
■ SML-P11VT	AlGaInP on GaAs	Red	50	20	100*1	5	-40 to +85	-40 to +100	1.8		621	626	631	1	3.6	
■ SML-P11UT											616	621	626	1.6	5.5	
■ SML-P11DT		Orange	52	20	100*1	5	-40 to +85	-40 to +100	1.9	10	602	605	608	2.5	7.3	1
■ SML-P11YT		Yellow									583	586	589	7.6		
■ SML-P11MT		Yellowish Green	54								566	569	572	0.63	2.1	

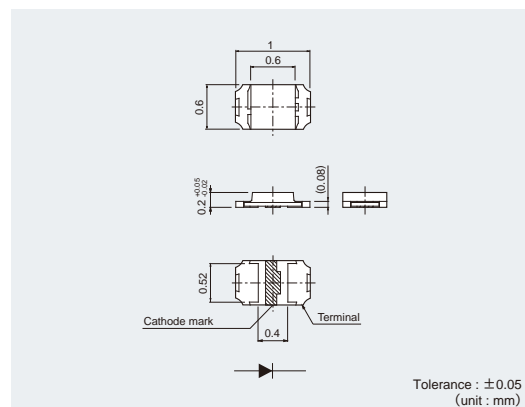
\* 1:Duty 1/10, 1kHz \* 2:Reference

#### PICOLED™

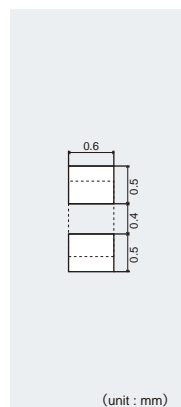
Part No.	Chip Structure	Emitting Color	Absolute Maximum Ratings (Ta=25°C)						Electrical and Optical Characteristics (Ta=25°C)							
			Power Dissipation P <sub>D</sub> (mW)	Forward Current I <sub>F</sub> (mA)	Peak Forward Current I <sub>FP</sub> (mA)	Reverse Voltage V <sub>R</sub> (V)	Operating Temperature 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)	Luminous Intensity I <sub>v</sub> (mcd)	Luminous Intensity I <sub>v</sub> (mcd)	Luminous Intensity I <sub>v</sub> (mcd)	Luminous Intensity I <sub>v</sub> (mcd)	Luminous Intensity I <sub>v</sub> (mcd)
■ SML-P12VT	AlGaInP on GaAs	Red	50	20	100*1	5	-40 to +85	-40 to +100	2.0		625	630	635	25	60	
■ SML-P12UT											615	620	625	85		
■ SML-P12DT		Orange	52	20	100*1	5	-40 to +85	-40 to +100	2.1	20	602	605	608	100	20	
■ SML-P12YT		Yellow								100	587	590	593	130		
■ SML-P12MT		Yellowish Green	54	20	100*1	5	-40 to +85	-40 to +100	2.2		569	572	575	10	35	
■ SML-P12PT		Green									557	560	563	4.0	13	
■ SMLP12BC7T	InGaN	Blue	66	20	100*1	5	-40 to +85	-40 to +100	2.9	5	465	470	475	5.6	17	
□ SMLP12WBC7W		White									(x, y) (0.30, 0.30)	5	36	71	5	
■ SMLP12HBC7W		Pink									(x, y) (0.23, 0.10)	14	22			

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

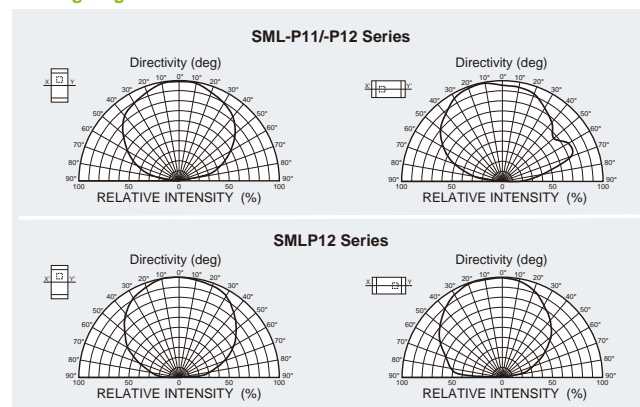
### Dimensions



### Recommended Solder Pattern



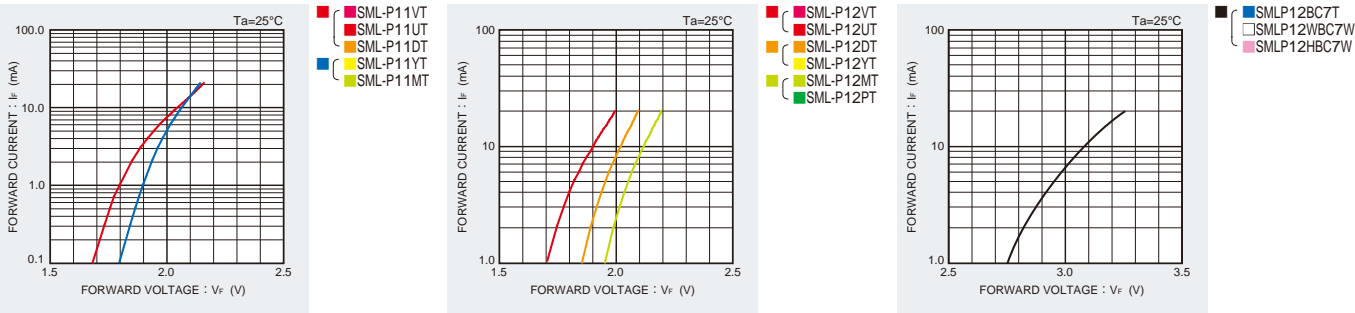
### Viewing Angle



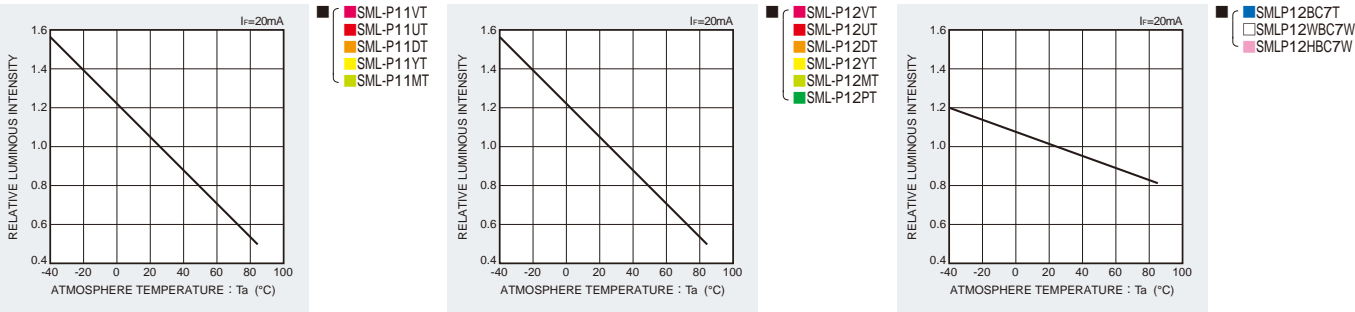
\* PICOLED™ is ROHM's pending trademark.

Electrical Characteristics Curves

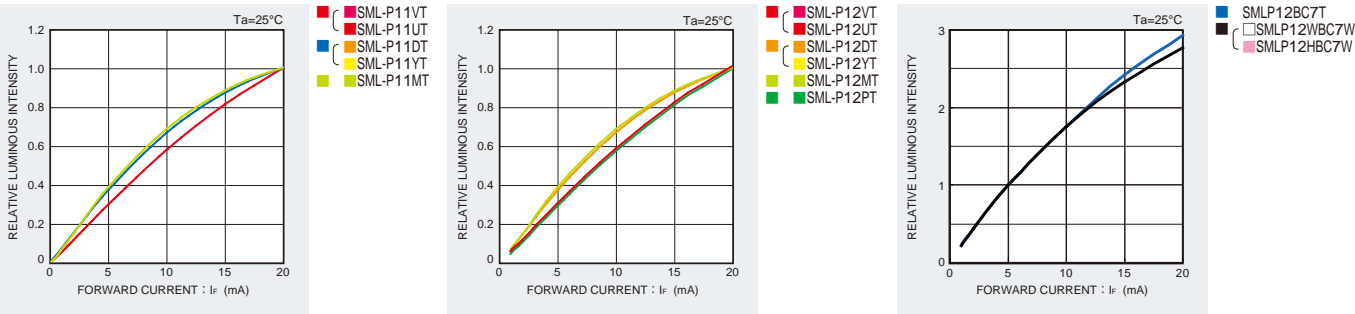
Forward Current-Forward Voltage



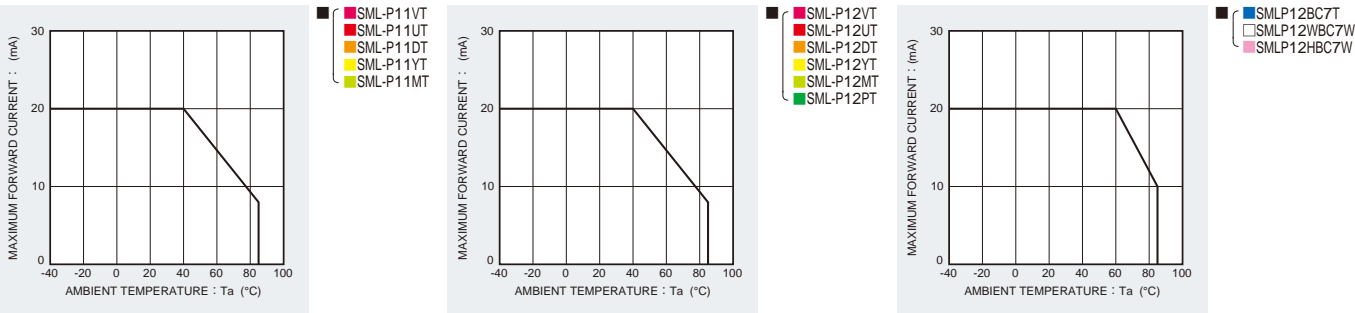
Luminous Intensity-Atmosphere Temperature



Luminous Intensity-Forward Current



Derating



## SML-P1 series

### Rank Reference of Brightness

#### ■ Red (V, U)

(Ta=25°C, If=20mA)

	Package size(mm)	Luminous Intensity (mcd)	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
		Height(mm)	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)	Luminous Intensity (mcd)	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
		Height(mm)	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)	Luminous Intensity (mcd)	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
		Height(mm)	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)	Luminous Intensity (mcd)	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
		Height(mm)	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)	Luminous Intensity (mcd)	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
		Height(mm)	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)	Luminous Intensity (mcd)	N	P	Q	R	S	T	U	V	W
		Height(mm)	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								

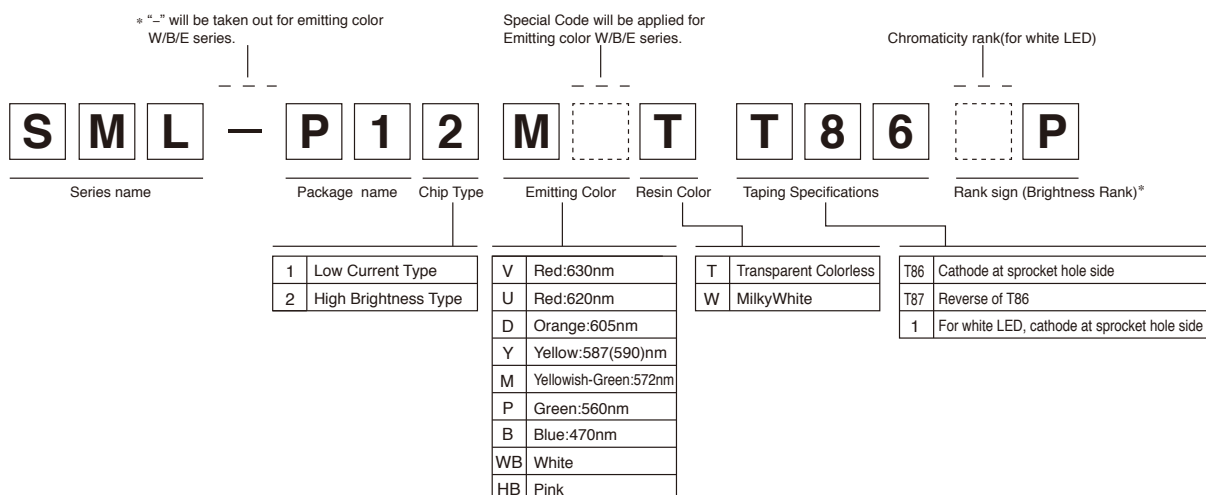
#### ■ Pink (HB)

(Ta=25°C, If=5mA)

	Package size (mm)	Luminous Intensity (mcd)	N	P	Q	R	S	T	U	V	W
		Height(mm)	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.

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