

SMLP36 series

PICOLED™-RGB

SMLP36RGB1W

6pin type
1510(0604)
1.5 × 1.0mm(t=0.2mm)

Features

- The smallest 3 color type LED in the world* PICOLED™-RGB
- 6pin type
- Low height contributes to the improvement of color mixture



* Investigated Aug. 2010

Specifications

Part No.	Chip Structure	Emitting Color	Absolute Maximum Ratings (Ta=25°C)					Electrical and Optical Characteristics (Ta=25°C)										
			Power*1 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		Reverse Current IR		Dominant Wavelength λD			Luminous Intensity Iv		
								Typ.(V)	IF(mA)	Max. (μA)	VR(V)	Min.**4 (nm)	Typ. (nm)	Max.**4 (nm)	IF(mA)	Min. (mcd)	Typ. (mcd)	IF(mA)
SMLP36RGB1W	InGaN	Blue						3.0				465	470	475		9	18	
		Green	35	10	50	5	-30 to +85	-40 to +100	3.1	5	100	5	520	527	535	5	22	45
	AlGaN on GaAs	Red						2.1				620	624	629		14	28	
SMLP36RGB2W	AlGaN P	Red						2.2				619	624	629		14	35	
	InGaN	Green	35	10	50	5	-40 to +85	-40 to +100	3.3	5	10	5	520	527	535	5	56	110
		Blue						3.2				465	470	475		28	45	

* 1: Total power dissipation in case of lighting several colors.

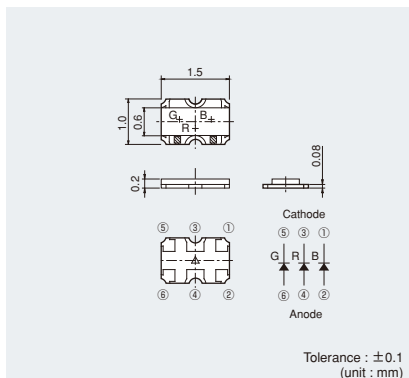
* 2: The above absolute maximum ratings are valid for the case of lighting a single color.

When lighting two colors at the same time, each of the figures in the absolute maximum ratings should be reduced down to 50% of it.
When lighting three colors, it will be reduced down to 30% of it.

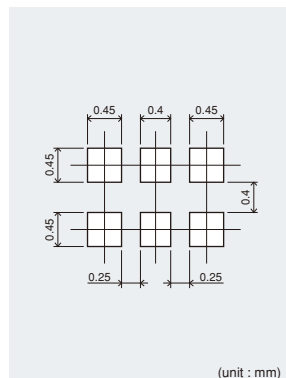
* 3: Duty ≤ 1/20, 1kHz

* 4: Reference

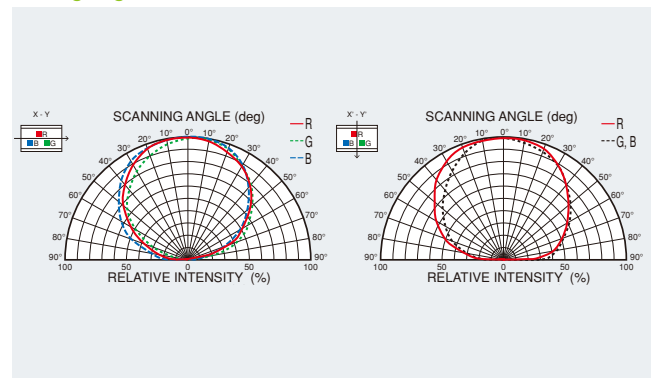
Dimensions



Recommended Solder Pattern



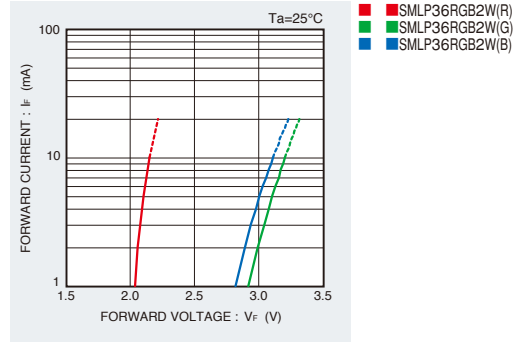
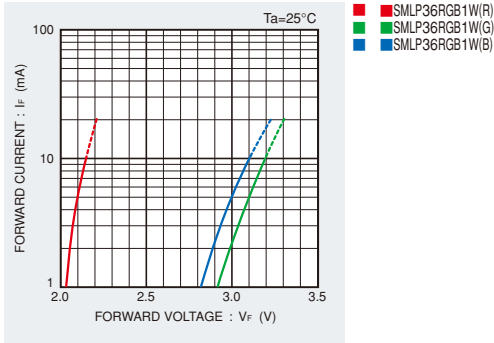
Viewing Angle



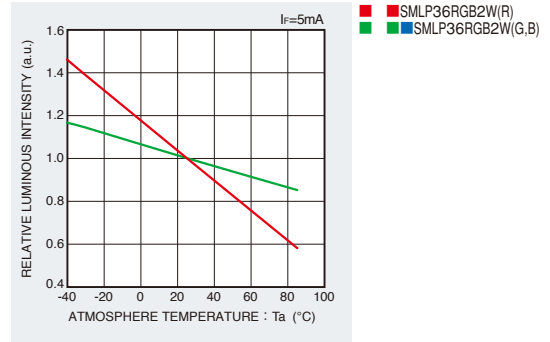
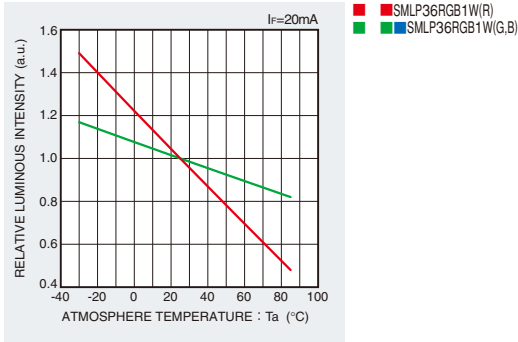
* PICOLED™ is ROHM's pending trademark.

Electrical Characteristics Curves

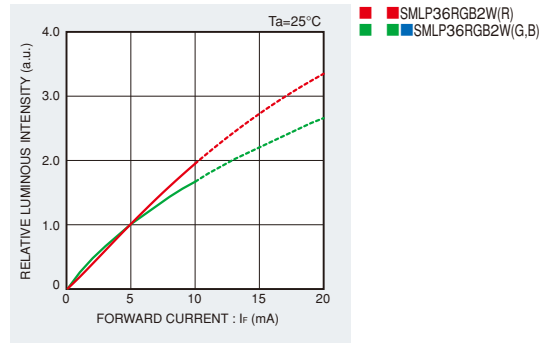
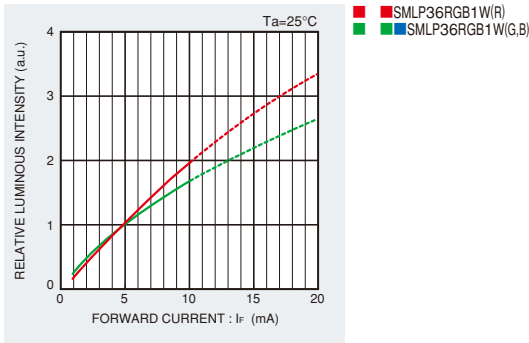
Forward Current-Forward Voltage



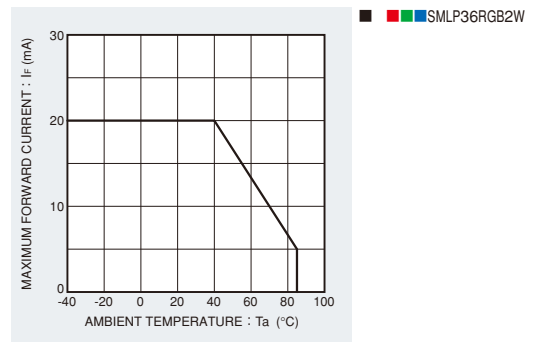
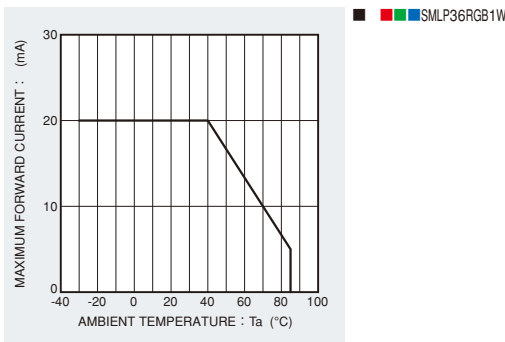
Luminous Intensity-Atmosphere Temperature



Luminous Intensity-Forward Current



Derating



SMLP36 series

Rank Reference of Brightness

SMLP36RGB1W

(Ta=25°C, If=5mA)

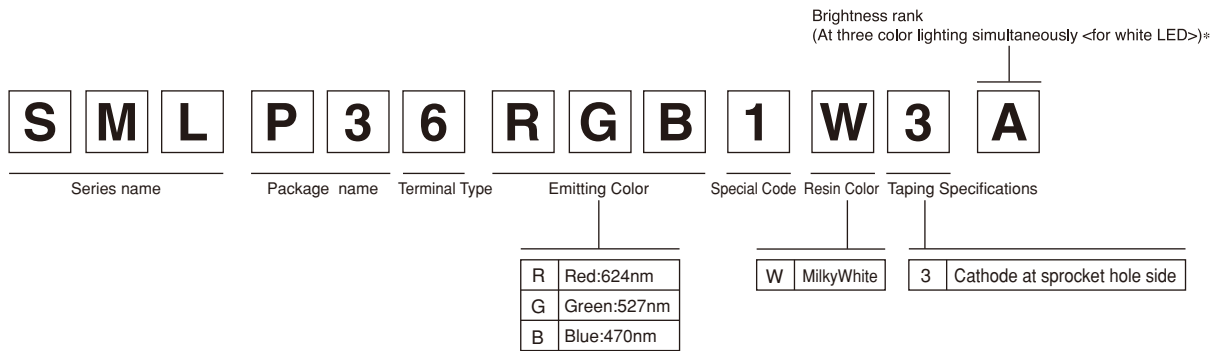
Mini-mold Chip LEDs	Package size (mm)	Height (mm)	Luminous Intensity (mcd)	Rank												
				A	B	C	D	E	F	G	H	J	K	L	M	
	1010	0.2	Blue	9 to 18	18 to 36	9 to 18	18 to 36	9 to 18	18 to 36	9 to 18	18 to 36	9 to 18	18 to 36	9 to 18	18 to 36	
			Green	22 to 36		36 to 56		56 to 90		22 to 36		36 to 56		56 to 90		
			Red	14 to 28						28 to 56						

SMLP36RGB2W

(Ta=25°C, If=5mA)

Mini-mold Chip LEDs	Package size (mm)	Height (mm)	Luminous Intensity (mcd)	Rank												
				A	B	C	D	E	F	G	H	J	K	L	M	
	1010	0.2	Blue	28 to 56	56 to 110	28 to 56	56 to 110	28 to 56	56 to 110	28 to 56	56 to 110	28 to 56	56 to 110	28 to 56	56 to 110	
			Green	56 to 90		90 to 140		140 to 220		56 to 90		90 to 140		140 to 220		
			Red	14 to 28						28 to 56						

Part No. Explanation



- * 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

- 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.
- 9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.
- 10) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.
- 11) ROHM has used reasonable care to ensure the accuracy of the information contained in this document. However, ROHM does not warrant that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.
- 12) Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting from non-compliance with any applicable laws or regulations.
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