

# SMD LEDs

ROHM's chip LEDs are designed for automatic surface mount processes and are available in a wide variety of package sizes (from 1.0x0.6mm)

## Red (V, U) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	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	1600 to 2500	2500 to 3120			
Mini-mold	1006	0.2	1	SML-P11VT (R)		SML-P11UT (R)																			
				20									SML-P12VT (R)		SML-P12UT (R)		SML-P12U2T (R)								
	1608	0.36	20										SML-E12V8W		SML-E12U8W		*SML-E12UW		SML-D15VW		SML-D14VW (A)*				
														SML-D13VW (A)*		SML-D12V1W		SML-D12V8W							
																				SML-D15UW		SML-D15U2W			
																						SML-D14U2W (A)*			
																						SML-D13UW (A)*		SML-D13U8W	
																						SML-D12U1W		SML-D12U8W	
	20125	0.8	20									SML-H12V8T		SML-H12U8T		SML-M13VT		SML-M13UT							
				3020	1.3	20							SML-010VT		SML-011UT										
10											SML-011VT (A)*		SML-012VT (A)*		SML-012V8T										
	20														SML-012U8T		SML-012UT								
																			SML-013UT		SML-Z14V4T*		SML-Z14U4T*		
PLCC2	3528	1.9	50																						
				20													SML-Z14VT (A)*		SML-Z14UT (A)*						
Side View (mold)	16115	0.55	20								SML-A12V8T		SML-A12U8T		**SML-A12UT (J)										
Reverse Mount	34125	1.1	10							SML-811VT (A)*		SML-811UT (A)*													
Lens	1608	1.24	20													CSL0901VT		CSL0901UT		CSL0902VT					
																		CSL0902UT		CSL0903VT		CSL0903UT			
	3216	1.85																	SML-S13VT		SML-S13UT				

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	4.5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 12	12 to 14	14 to 16	16 to 18	18 to 20	20 to 22	22 to 25			
Lens	2924	3.1	20	CSL0701UT															
PLCC	3528	1.9	140	SML-Y18U2T (C)															

## Orange (D) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	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	1600 to 2800				
Mini-mold	1006	0.2	1							SML-P11DT (R)															
				20											SML-P12DT (R)		*SML-E12DW								
	1608	0.36	20																						
20125	0.8	20																							
			20125	0.8	20																				
Reflector	3020	1.3				20																			
			10																						
				20																					
PLCC2	3528	1.9	50																						
				20																					
Side View (mold)	16115	0.55	20																						
Reverse Mount	34125	1.1	10																						
Lens	1608	1.24	20																						
	3216	1.85																							

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	6 to 7	7 to 8	8 to 9	9 to 10	10 to 12	12 to 14	14 to 16	16 to 18	18 to 20	20 to 22	22 to 24	24 to 27	27 to 30	30 to 33	33 to 36	36 to 40	40 to 45	45 to 56
Lens	2924	3.1	20	CSL0701DT																		

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

\*\* Brightness on specification sheet include tolerance of within ±10%. Note: Please be sure to refer the specifications about the rank.

: Under Development

### Yellow (Y, W) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	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	1600 to 2800						
Mini-mold	1006	0.2	1						SML-P11YT (R)																		
			20													SML-P12YT (R)											
	1608	0.36	20																								
			2																								
		0.55	20																								
20125	0.8	20																									
		20																									
Reflector	3020	1.3	20																								
			10																								
			20																								
			20																								
PLCC2	3528	1.9	50																								
			20																								
Side View (mold)	16115	0.55	20																								
Reverse Mount	34125	1.1	10																								
Lens	1608	1.24	20																								
	3216	1.85																									

### Yellow Green (M), Green (P, F) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	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	1800 to 2800					
Mini-mold	1006	0.2	1																								
			20																								
	1608	0.36	20																								
			2																								
		0.55	20																								
20125	0.8	20																									
		20																									
Reflector	3020	1.3	5																								
			20																								
			20																								
			20																								
PLCC2	3528	1.9	50																								
			20																								
Side View (mold)	16115	0.55	20																								
Reverse Mount	34125	1.1	20																								
Lens	1608	1.24	20																								
	3216	1.85	20																								

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## Green (E)/Blue Green (E2, E3) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	9.0 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	900 to 1400	1400 to 2200	2200 to 3600	3600 to 5600
Mini-mold	1006	0.2	5		SMLP13EC8T													
		0.36			SMLE13EC8T													
	1608	0.55	5		SMLD12EN1W													
		1.24			SMLD12E2N1W SMLD12E3N1W													
Reflector	20125	0.8	5	CSL1001ET														
	3020	1.3	20	SMLM22EN1T (C) SMLMN2ECT (C)														
PLCC2	3528	1.9	20	SML012ECT														
Side View (mold)	16115	0.55	5	SML012EC4T														
Lens	3216	1.85	20	SMLZ24E2N3T SMLZ14EGT (A)*														
	1608	1.24		CSL0901ET														
				CSL0902ET														
				SMLS14EET														

## Blue (B) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	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	900 to 1400
Mini-mold	1006	0.2	5	SMLP13BC8T																
		0.36		SMLEN3BC8T																
	1608	0.55	5	SMLD12BN1W																
		1.24		CSL1001BT																
Reflector	1608	0.55	5	CSL1101SB1W (C)																
				SMLMN2SB1CW (C)																
	20125	0.8	5	SMLM22BN1T (C) SMLMN2BCT (C)																
				SML012BCT																
3020	1.3	20	SML012BC4T																	
			SML013BDT																	
PLCC2	3528	1.9	20	SMLZ14BGT (A)* SMLZ24BN3T SMLZN4BGT (A)*																
				SMLA13BC8T																
				SML812BCT																
Side View (mold)	16115	0.55	5	SMLA13BC8T																
Reverse Mount	34125	1.1	20	SML812BCT																
Lens	3216	1.85	20	SMLS14BET																
	1608	1.24	20	CSL0901BT																
				CSL0902BT																

## White (WB) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I <sub>F</sub> (mA)	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	900 to 1100	1100 to 1400	1400 to 1800	1800 to 2200	2200 to 2800	2800 to 3600	3600 to 7000	7000 to 8500
Mini-mold	1006	0.2	5	SMLP14WBCNIW																		
		0.36		SMLEN3WBC8W																		
Side View (Reflector)	16115	0.55	5	SMLD12WBN1W																		
		2812		0.8	20	SMLA12WBC7W																
Reverse Mount	34125	1.1	5	CSL0406WBCW																		
		1608		0.55	5	SML813WBC8W																
Reflector	20125	0.55	20	CSL1101WBAW (C)																		
				CSL1102WBAW (C)																		
	0.8	5	CSL1103WBAW (C) CSL1104WBAW (C)																			
			SMLM22WBN1CW1T (C) SMLMN2WB1CW (C)																			
3020	1.3	20	SMLMN3WB2CW (C)																			
			SML013WBDW																			
PLCC2	3528	1.9	20	SMLZ14WBGUW (A)*																		
Reflector	4520	0.6	90	SMLK18WBJCW																		
				SMLK18WBJDW																		
				SMLK28WBJCW																		

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

\*\* Brightness on specification sheet include tolerance of within ±10%. Note: Please be sure to refer the specifications about the rank.

: Under Development

## 2 Colors Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	I <sub>F</sub> (mA)	Luminous Intensity (mcd) Emitting Color	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
Mini-mold	1010	0.2	20	Red					SML-P24MUW (R)				
				Yellow Green									
				Blue									
		1315	0.6	5	Red				SML522BU1W				
					Blue								
					Yellow Green								
	20		5	Red				SML-522MUW					
				Yellow Green									
				Red				SML-522MU8W					
		20	5	Orange				SML-522MD8W					
				Yellow Green									
				Yellow				SML-522MY8W					
1608	0.55	5	Yellow Green				SML-D22MUW						
			Red										
			Yellow				SML-D22YVW						
	20	5	Red										
			Orange				SML-020MDT						
			Yellow Green										
Reflector	3025	1.3	20	Red				SML-020MVT					
				Yellow Green									
				Yellow Green				SML-020MYT					
				Yellow									
				Yellow Green									
				Red				SML-822MV8W					
Reverse Mount	34125	1.1	20	Yellow Green									
				Red									
				Yellow Green							SML-825MVW		

## 3 Colors Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	I <sub>F</sub> (mA)	Luminous Intensity (mcd) Emitting Color	5.6 to 9.0	9.0 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	900 to 1400	1400 to 1800	
Mini-mold	1010	0.2	5	Red					SMLP34RGB2W									
				Green														
				Blue														
	1510	0.2	5	Red					SMLP34RGBN1W									
				Green														
				Blue														
Reflector	1816	0.5	20	Red														
				Green														
				Blue														
	3528	0.6	20	Red														
				Green														
				Blue														
				Red														
				Green														
				Blue														
				Red														
				Green														
				Blue														
Side View (Reflector)	2910	1.35	20	Red														
				Green														
				Blue														
	6922	2.15	20	Red														
				Green														
				Blue														


\*\* Brightness on specification sheet include tolerance of within ±10%. Note: Please be sure to refer the specifications about the rank.


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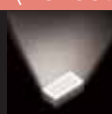
**SMD LEDs**

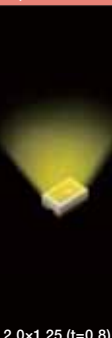
<b>(PICOLED™ Mold type 0402 (1006M))</b>																			
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)						Electrical and Optical Characteristics (T <sub>a</sub> =25°C)								Automotive Grade AEC-Q101/AEC-Q102		
			Power Dissipation P <sub>0</sub> (mW)	Forward Current I <sub>F</sub> (mA)	Peak Forward Current I <sub>F</sub> (max) (mA)	Reverse Voltage V <sub>R</sub> (V)	Operating Temperature T <sub>opr</sub> (°C)	Storage Temperature T <sub>stg</sub> (°C)	Forward Voltage V <sub>F</sub>		Reverse Current I <sub>R</sub>		Dominant Wavelength λ <sub>d</sub> /Chromaticity Coordinates (x, y)		Luminous Intensity I <sub>v</sub>				
			Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ (V)	I <sub>R</sub> (mA)	Typ* (nm)	I <sub>R</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)		Max (mcd)	
	SML-P11VT (R)	Red	50	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.8	1	10	5	626	1	2	4	6	1	—
	SML-P11UT (R)	Red	50	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.8	1	10	5	621	1	1	3	6	1	—
	SML-P11DT (R)	Orange	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.9	1	10	5	605	1	4	7	16	1	—
	SML-P11YT (R)	Yellow	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.9	1	10	5	586	1	4	8	16	1	—
	SML-P11MT (R)	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.9	1	10	5	569	1	1	2	4	1	—
	SML-P12VT (R)	Red	50	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	10	5	630	20	25	60	100	20	—
	SML-P12UT (R)	Red	50	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	10	5	620	20	40	85	160	20	—
	SML-P12U2T (R)	Red	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	615	20	25	70	160	20	—
	SML-P12DT (R)	Orange	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	605	20	63	100	250	20	—
	SML-P12Y3T (R)	Yellow	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	596	20	40	90	250	20	—
	SML-P12YT (R)	Yellow	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	590	20	40	100	160	20	—
	SML-P12WT (R)	Yellow	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	585	20	25	70	160	20	—
	SML-P12Y2T (R)	Yellow	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	580	20	16	50	100	20	—
	SML-P12M2T (R)	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	576	20	10	25	63	20	—
	SML-P12MT (R)	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	25	63	20	—
	SML-P13FT (R)	Green	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	566	20	6	18	40	20	—
	SML-P13PT (R)	Green	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	560	20	4	10	16	20	—
	SMLP13EC8T	Green	34	10	50 <sup>*2</sup>	5	-40 to +85	-40 to +100	3.0	5	100	5	527	5	56	110	220	5	—
SMLP13BC8T	Blue	33	10	50 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.9	5	100	5	470	5	9	25	56	5	—	
SMLP14WBCN1W	White	33	10	50 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.9	5	100	5	(x, y) (0.30, 0.30)	5	90	180	360	5	—	
<b>(Mold type 0603 (1608M))</b>																			
	SML-E12UW	Red	62	25	60 <sup>*1</sup>	5	-30 to +85	-40 to +85	2.0	20	10	5	624	20	36	85	280	20	—
	SML-E12DW	Orange	62	25	60 <sup>*1</sup>	5	-30 to +85	-40 to +85	2.0	20	10	5	607	20	56	150	450	20	—
	SML-E12V8W	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	630	20	16	40	100	20	—
	SML-E12U8W	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	620	20	25	63	160	20	—
	SML-E12D8W	Orange	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	40	100	250	20	—
	SML-E12Y8W	Yellow	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	25	63	160	20	—
	SML-E12M8W	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	25	63	20	—
	SML-E12P8W	Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	560	20	3	6	16	20	—
	SML-E13EC8T	Green	68	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	3.0	5	10	5	527	5	56	120	360	5	—
	SML-E13BC8T	Blue	66	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.9	5	10	5	470	5	14	40	90	5	—
	SML-E13WBC8W	White	33	10	50 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.9	5	10	5	(x, y) (0.30, 0.30)	5	56	120	220	5	—
	SML-D11YW	Yellow	67	25	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.9	2	10	5	588	2	2	4	6	2	—
	SML-D12W8W (A)	Yellow	52	20	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.0	2	10	12	588	2	5	7	9	2	YES
	SML-D12V1W	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	630	20	25	40	63	20	—
	SML-D12U1W	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	620	20	40	63	100	20	—
	SML-D12D1W	Orange	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	63	100	160	20	—
	SML-D12Y1W	Yellow	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	63	100	160	20	—
	SML-D12M1W	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	16	30	63	20	—
	SML-D12V8W	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	630	20	16	40	100	20	YES
	SML-D12U8W	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	620	20	25	63	160	20	YES
	SML-D12D8W	Orange	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	40	100	250	20	YES
	SML-D12Y8W	Yellow	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	25	63	160	20	YES
	SML-D12Y3W	Yellow	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	581	20	16	40	100	20	—
	SML-D12M8W	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	25	63	20	YES
	SML-D12FW	Green	67	25	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	565	20	14	18	28	20	—
	SML-D12P8W	Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	560	20	3	6	16	20	YES
	SMLD12EN1W	Green	70	20	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	3.0	5	10	5	527	5	56	140	220	5	YES
	SMLD12E2N1W	Blue Green	66	20	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.9	5	10	5	505	5	56	120	140	5	YES
	SMLD12E3N1W	Blue Green	66	20	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.9	5	10	5	496	5	56	85	140	5	YES
	SMLD12BN1W	Blue	66	20	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.9	5	10	5	470	5	14	40	56	5	YES
	SMLD12WBN1W	White	66	20	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.9	5	10	5	(x, y) (0.295, 0.280)	5	56	120	220	5	YES
	SML-D13VW (A)	Red	72	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.0	20	10	5	630	20	36	55	90	20	YES
	SML-D13UW (A)	Red	72	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.0	20	10	5	620	20	56	85	140	20	YES
	SML-D13DW (A)	Orange	72	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.0	20	10	5	605	20	71	120	180	20	YES
	SML-D13WW (A)	Yellow	75	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.1	20	10	5	587	20	71	110	180	20	YES
	SML-D13MW (A)	Yellow Green	75	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.1	20	10	5	571	20	28	45	71	20	YES
	SML-D13U8W	Red	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	620	20	40	70	160	20	—
	SML-D13Y8W	Yellow	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	63	100	160	20	—
	SML-D13Y2W	Yellow	78	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	581	20	40	80	160	20	—
	SML-D13M8W	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	16	30	63	20	—
	SML-D13FW	Green	81	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	565	20	18	22	36	20	YES
	SML-D14VW (A)	Red	72	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.0	20	10	5	630	20	71	100	180	20	YES
	SML-D14U2W (A)	Red	75	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.0	20	10	5	615	20	90	160	224	20	YES
	SML-D14DW (A)	Orange	75	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.0	20	10	5	605	20	112	200	280	20	YES
	SML-D14YW (A)	Yellow	75	30	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.1	20	10	5	5						


# SMD LEDs

〈Mold type 0603 (1608M)〉																				
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)						Electrical and Optical Characteristics (T <sub>a</sub> =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>		Reverse Current I <sub>R</sub>		Dominant Wavelength λ <sub>D</sub>		Luminous Intensity I <sub>v</sub>				Automotive Grade AEC-Q101/AEC-Q102	
									Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ* (nm)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)		
	<b>New</b> CSL1001ET	Green	35	10	50 <sup>+2</sup>	5	-40 to +100	-40 to +100	3.0	5	10	5	527	5	90	140	224	5	YES	
	<b>New</b> CSL1001BT	Blue	33	10	50 <sup>+2</sup>	5	-40 to +100	-40 to +100	2.8	1	10	5	470	1	4	6	9	1	YES	

〈Mold type 0805 (20125M)〉																				
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)						Electrical and Optical Characteristics (T <sub>a</sub> =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>		Reverse Current I <sub>R</sub>		Dominant Wavelength λ <sub>D</sub> / Chromaticity Coordinates (x, y)		Luminous Intensity I <sub>v</sub>				Automotive Grade AEC-Q101/AEC-Q102	
									Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ* (nm)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)		
	SML-H12V8T	Red	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	630	20	16	25	63	20	YES	
	SML-H12U8T	Red	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	620	20	25	40	100	20	YES	
	SML-H12D8T	Orange	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	40	63	160	20	YES	
	SML-H12Y8T	Yellow	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	40	63	160	20	YES	
	SML-H12M8T	Yellow Green	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	25	40	20	YES	
	SML-H12P8T	Green	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	560	20	3	4	10	20	YES	


〈Reflector type 0603 (1608M)〉																				
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)						Electrical and Optical Characteristics (T <sub>a</sub> =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>		Reverse Current I <sub>R</sub>		Dominant Wavelength λ <sub>D</sub> / Chromaticity Coordinates (x, y)		Luminous Intensity I <sub>v</sub>				Automotive Grade AEC-Q101/AEC-Q102	
									Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ* (nm)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)		
	CSL1101SB11W (C)	Blue	68	(20)	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	2.9	5	10	5	(x, y) (0.185, 0.161)	5	(45)	(62)	(81)	5	(YES)	
	CSL1103SB11W (C)	Blue	152	(40)	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	3.2	20	10	5	(x, y) (0.185, 0.161)	20	(780)	(1,100)	(1,400)	20	(YES)	
	CSL1101WBAW (C)	White	68	(20)	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	2.9	5	10	5	(x, y) (0.281, 0.247)	5	(71)	(120)	(180)	5	(YES)	
	CSL1102WBAW (C)	White	152	40	100 <sup>+2</sup>	12	-40 to +110	-40 to +110	3.2	20	10	5	(x, y) (0.281, 0.247)	20	(710)	950	(1,400)	20	(YES)	
	CSL1103WBAW (C)	White	152	40	100 <sup>+2</sup>	12	-40 to +110	-40 to +110	3.2	20	10	5	(x, y) (0.281, 0.247)	20	(1,100)	1,500	(2,200)	20	(YES)	
	CSL1104WBAW (C)	White	144	40	100 <sup>+2</sup>	12	-40 to +110	-40 to +110	2.9	20	10	5	(x, y) (0.281, 0.247)	20	(1,400)	2,200	(2,800)	20	(YES)	

〈Reflector type 0805 (20125M)〉																				
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)						Electrical and Optical Characteristics (T <sub>a</sub> =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>		Reverse Current I <sub>R</sub>		Dominant Wavelength λ <sub>D</sub> / Chromaticity Coordinates (x, y)		Luminous Intensity I <sub>v</sub>				Automotive Grade AEC-Q101/AEC-Q102	
									Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ* (nm)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)		
	SML-M13VT	Red	75	30	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2	20	10	5	630	20	40	75	100	20	—	
	SML-M13UT	Red	75	30	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2	20	10	5	620	20	63	120	160	20	—	
	SML-M13DT	Orange	75	30	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2	20	10	5	605	20	100	160	250	20	—	
	SML-M13YT	Yellow	75	30	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2	20	10	5	590	20	100	160	250	20	—	
	SML-M13MT	Yellow Green	81	30	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	25	45	100	20	—	
	SML-M13PT	Green	81	30	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	560	20	6	16	25	20	—	
	SMLM2ECT (C)	Green	70	20	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	3	5	10	12	527	5	56	140	360	5	YES	
	SMLM2BCT (C)	Blue	68	20	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	2.9	5	10	12	470	5	14	36	90	5	YES	
	SMLM2PB1CW (C)	Green	68	20	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	2.9	5	10	12	(x, y) (0.42, 0.55)	5	140	200	280	5	YES	
	SMLM2SB1AW (C)	Blue	68	20	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	2.9	5	10	12	(x, y) (0.195, 0.187)	5	71	105	140	5	YES	
	SMLM2WB1CW (C)	White	68	20	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	2.9	5	10	12	(x, y) (0.30, 0.28)	5	56	140	220	5	YES	
	SMLM2EN1T (C)	Green	70	20	100 <sup>+2</sup>	—	-40 to +100	-40 to +100	3	5	—	—	527	5	(56)	(140)	(360)	5	(YES)	
	SMLM2BN1T (C)	Blue	68	20	100 <sup>+2</sup>	—	-40 to +100	-40 to +100	2.9	5	—	—	470	5	(14)	(36)	(90)	5	(YES)	
	SMLM2WB1CW1T (C)	White	68	20	100 <sup>+2</sup>	—	-40 to +100	-40 to +100	2.9	5	—	—	(x, y) (0.30, 0.30)	5	(56)	(140)	(220)	5	(YES)	
	<b>New</b> SMLM3WB2CW (C)	White	114	30	100 <sup>+2</sup>	12	-40 to +100	-40 to +100	2.9	5	10	12	(x, y) (0.30, 0.28)	5	180	260	360	5	YES	


〈Reflector type (3020M)〉																				
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)						Electrical and Optical Characteristics (T <sub>a</sub> =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>		Reverse Current I <sub>R</sub>		Dominant Wavelength λ <sub>D</sub> / Chromaticity Coordinates (x, y)		Luminous Intensity I <sub>v</sub>				Automotive Grade AEC-Q101/AEC-Q102	
									Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ* (nm)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)		
	<b>New</b> SML-010VT	Red	70	25	60 <sup>+1</sup>	4	-30 to +85	-40 to +85	2	20	10	4	650 <sup>*6</sup>	20	2	6	18	20	—	
	<b>New</b> SML-010DT	Orange	70	25	60 <sup>+1</sup>	4	-30 to +85	-40 to +85	2	20	100	4	610 <sup>*6</sup>	20	4	10	28	20	—	
	<b>New</b> SML-010YT	Yellow	70	25	60 <sup>+1</sup>	4	-30 to +85	-40 to +85	2.1	20	100	4	585 <sup>*6</sup>	20	2	6	18	20	—	
	<b>New</b> SML-010MT	Yellow Green	70	25	60 <sup>+1</sup>	4	-30 to +85	-40 to +85	2.2	20	100	4	570 <sup>*6</sup>	20	6	25	45	20	—	
	<b>New</b> SML-010PT	Green	70	25	60 <sup>+1</sup>	4	-30 to +85	-40 to +85	2.2	20	100	4	555 <sup>*6</sup>	20	2	6	18	20	—	
	<b>New</b> SML-011UT	Red	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	20	10	5	630 <sup>*6</sup>	20	22	63	180	20	—	
	<b>New</b> SML-011DT	Orange	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	20	10	5	611 <sup>*6</sup>	20	22	63	180	20	—	
	<b>New</b> SML-011YT	Yellow	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	20	10	5	590 <sup>*6</sup>	20	22	63	180	20	—	
	<b>New</b> SML-011VT (A)	Red	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	10	10	5	639 <sup>*6</sup>	10	14	28	56	10	—	
	<b>New</b> SML-011DT (A)	Orange	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	10	10	5	611 <sup>*6</sup>	10	22	45	90	10	—	
	<b>New</b> SML-011YT (A)	Yellow	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	10	10	5	590 <sup>*6</sup>	10	11	22	45	10	—	
	<b>New</b> SML-012VT (A)	Red	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	20	10	5	630	20	36	71	140	20	—	
	<b>New</b> SML-012V8T	Red	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	630	20	25	63	160	20	—	
	<b>New</b> SML-013UT	Red	75	30	100 <sup>+2</sup>	5	-30 to +85	-40 to +100	2	20	10	5	624	20	90	220	710	20	—	
	<b>New</b> SML-012U8T	Red	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	620	20	40	100	250	20	—	
	<b>New</b> SML-012UT	Red	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	20	10	5	624	20	36	100	280	20	—	
	<b>New</b> SML-012DT (A)	Orange	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	71	140	280	20	—	
	<b>New</b> SML-012D8T	Orange	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	63	160	400	20	—	
	<b>New</b> SML-012DT	Orange	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	20	10	5	606	20	36	100	280	20	—	
	<b>New</b> SML-012YT (A)	Yellow	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	20	10	5	587	20	56	112	224	20	—	
	<b>New</b> SML-012Y8T	Yellow	54	20	100 <sup>+2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	40	100	250	20	—	
	<b>New</b> SML-012YT	Yellow	75	30	100 <sup>+2</sup>	5	-40 to +100	-40 to +100	2	20	10	5	590							

**SMD LEDs**


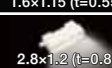
**(Reflector type PLCC (3528M))**

Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (Ta=25°C)						Electrical and Optical Characteristics (Ta=25°C)								Automotive Grade AEC-Q101/AEC-Q102		
			Power 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 (V)		Reverse Current Ir (μA)		Dominant Wavelength λd/ Chromaticity Coordinates (x, y)		Luminous Intensity Iv (mcd)				
	SML-Z14V4T	Red	189	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2	50	10	12	630	50	140	280	560	50	—
	SML-Z14VT (A)	Red	168	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	1.9	20	10	12	630	20	56	112	180	20	YES
	SML-Z14U4T	Red	189	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2	50	10	12	620	50	280	560	1,120	50	—
	SML-Z14UT (A)	Red	168	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	1.9	20	10	12	620	20	112	224	355	20	YES
	SML-Z14D4T	Orange	189	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2	50	10	12	605	50	355	710	1,400	50	—
	SML-Z14DT (A)	Orange	168	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	1.9	20	10	12	605	20	140	280	450	20	YES
	SML-Z14Y4T	Yellow	189	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2.1	50	10	12	590	50	355	710	1,400	50	—
	SML-Z14YT (A)	Yellow	175	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2	20	10	12	589	20	140	280	450	20	YES
	SML-Z14M4T	Yellow Green	189	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2.1	50	10	12	572	50	112	224	450	50	—
	SML-Z14MT (A)	Yellow Green	175	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2	20	10	12	571	20	45	90	140	20	YES
	SML-Z14F4T	Green	189	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2.1	50	10	12	565	50	56	120	180	50	—
	SML-Z14FT (A)	Green	175	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2	20	10	12	564	20	22	45	71	20	YES
	SML-Z14P4T	Green	189	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2.1	50	10	12	561	50	22	56	90	50	—
	SML-Z14PT (A)	Green	175	70	200 <sup>*2</sup>	12	-40 to 100	-40 to 100	2	20	10	12	560	20	11	22	36	20	YES
	SMLZ14EGT (A)	Green	120	30	100 <sup>*2</sup>	5	-40 to 100	-40 to 100	3.4	20	10	5	528	20	710	1,100	1,800	20	YES
	SMLZ14BGT (A)	Blue	114	30	100 <sup>*2</sup>	5	-40 to 100	-40 to 100	3.3	20	10	5	470	20	140	280	450	20	YES
	SMLZ14BGT (A)	Blue	114	30	100 <sup>*2</sup>	0.9	-40 to 85	-40 to 100	3.3	20	—	—	470	20	140	300	450	20	—
	SMLZ14WBGUW (A)	White	114	30	100 <sup>*2</sup>	0.9	-40 to 85	-40 to 100	3.3	20	—	—	(x, y) (0.30, 0.28)	20	1,800	2,400	3,600	20	—
	SMLZ24E2N3T (C)	Blue Green	152	40	100 <sup>*2</sup>	—	-40 to 100	-40 to 100	3.2	20	—	—	505	20	900	1,140	1,800	20	YES
	SMLZ24BN3T (C)	Blue	114	30	100 <sup>*2</sup>	0.9	-40 to 100	-40 to 100	3.3	20	—	—	470	20	220	300	450	20	YES
	SML-Y18U2T (C)	Red	600	(200)	1,000 <sup>*2</sup>	12	-40 to 100	-40 to 100	—	140	10	12	618	140	(4,500)	—	(9,000)	140	(YES)


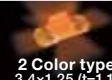
**(Reflector type (4520M))**

Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (Ta=25°C)						Electrical and Optical Characteristics (Ta=25°C)										Automotive Grade AEC-Q101/AEC-Q102		
			Power 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 (V)		Reverse Current Ir (μA)		Chromaticity Coordinates* (x, y)		Luminous Intensity Iv (mcd)					Luminous Flux Φv (lm)	
	SMLK18WBJCW	White	675	150	230 <sup>*5</sup>	5	-40 to +100	-40 to +100	3.9	90	10	5	(0.30, 0.28)	90	4,800	5,900	8,500	90	21	90	—
	SMLK18WBJDW	White	675	150	230 <sup>*5</sup>	5	-40 to +100	-40 to +100	3.9	90	10	5	(0.34, 0.34)	90	4,800	6,000	8,500	90	22	90	—
	SMLK28WBJCW	White	675	150	230 <sup>*5</sup>	5	-40 to +100	-40 to +100	3.9	90	—	—	(0.30, 0.28)	90	4,800	5,900	8,500	90	21	90	—

**(Side View type)**

Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (Ta=25°C)						Electrical and Optical Characteristics (Ta=25°C)										Automotive Grade AEC-Q101/AEC-Q102
			Power 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 (V)		Reverse Current Ir (μA)		Dominant Wavelength λd/ Chromaticity Coordinates (x, y)		Luminous Intensity Iv (mcd)				
	SML-A12V8T	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	630	20	16	40	100	20	—
	SML-A12U8T	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	620	20	25	63	160	20	—
	SML-A12D8T	Orange	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	40	100	250	20	—
	SML-A12Y8T	Yellow	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	25	63	160	20	—
	SML-A12M8T	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	25	63	20	—
	SML-A12P8T	Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	560	20	3	6	16	20	—
	SML-A12UT (J)	Red	75	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	10	5	624	20	36	100	280	20	—
	SML-A12DT (J)	Orange	75	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	10	5	606	20	36	100	280	20	—
	SML-A12WT (J)	Yellow	75	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	10	5	590	20	36	63	180	20	—
	SML-A12MT (J)	Yellow Green	65	25	100 <sup>*2</sup>	5	-30 to +85	-40 to +85	2.1	20	100	5	570	20	14	40	110	20	—
	SML-A15YT	Yellow	87	35	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.1	20	10	5	590	20	180	—	280	20	—
	SMLA12EC6T	Green	68	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	3.0	5	100	5	527	5	22	56	140	5	—
	SMLA13BC8T	Blue	66	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.9	5	10	5	470	5	22	36	56	5	—
	SMLA12WBC7W	White	33	10	50 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.9	5	10	5	(x, y) (0.30, 0.30)	5	22	56	140	5	—
		CSL0406WBCW	White	117	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	3.2	20	50	5	(x, y) (0.30, 0.28)	20	1,400	2,200	3,600	20

**(Reverse Mount Available type)**

	SML-811VT (A)	Red	62	25	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	10	100	5	630	10	11	22	45	10	YES	
	SML-811UT (A)	Red	62	25	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	10	100	5	620	10	11	22	45	10	YES	
	SML-811DT (A)	Orange	62	25	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	10	100	5	605	10	11	22	45	10	YES	
	SML-811MT (A)	Yellow	62	25	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	10	100	5	590	10	14	28	56	10	YES	
	SML-812MT	Yellow Green	65	25	60 <sup>*1</sup>	4	-30 to +85	-40 to +85	2.1	20	100	4	571	20	14	40	110	20	—	
	SML812BCT	Blue	80	20	100 <sup>*2</sup>	5	-30 to +85	-40 to +85	3.3	20	100	5	470	20	22	56	140	20	—	
	SML813WBC8W	White	33	10	50 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.9	5	10	5	(x, y) (0.30, 0.30)	5	22	45	90	5	—	
		SML-822MV8W	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	100	5	572	20	16	25	40	20	—
		SML-825MVW	Red	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	100	5	630	20	16	30	63	20	—
SML-825MVW		Yellow Green	80	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	100	5	572	20	40	63	100	20	—	
SML-825MVW	Red	80	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	100	5	630	20	40	63	100	20	—		

\*1 Duty1/5, 200Hz \*2 Duty1/10, 1kHz \*3 Duty≤1/20, 1ms \*4 Duty≤1/5, 1kHz \*5 Duty1/10, pulse width 10ms Max  
\*Brightness for white color is noted with chromaticity coordinate (x, y).

(YES): Planning ( ): Reference : Under Development

# SMD LEDs

(Surface Mount Circular type)																			
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)						Electrical and Optical Characteristics (T <sub>a</sub> =25°C)								Automotive Grade AEC-Q101/AEC-Q102		
			Power Dissipation P <sub>0</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>		Reverse Current I <sub>R</sub>		Dominant Wavelength λ <sub>D</sub>		Luminous Intensity I <sub>v</sub>				
								Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ (nm)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)		
	CSL0901VT	Red	62.5	25	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	630	20	112	180	355	20	YES
	CSL0901UT	Red	62.5	25	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	620	20	140	280	450	20	YES
	CSL0901DT	Orange	62.5	25	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	605	20	224	400	710	20	YES
	CSL0901YT	Yellow	62.5	25	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	590	20	180	320	560	20	YES
	CSL0901WT	Yellow Green	62.5	25	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	587	20	180	280	560	20	YES
	CSL0901MT	Yellow Green	62.5	25	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	571	20	56	100	180	20	YES
	CSL0901PT	Green	62.5	25	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	560	20	14	30	45	20	YES
	CSL0902ET	Green	95	25	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	3.4	20	10	5	527	20	710	1,100	1,800	20	YES
	CSL0902BT	Blue	95	25	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	3.3	20	10	5	470	20	220	360	560	20	YES
	New CSL0901ET	Green	70	20	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	3	5	10	5	527	5	220	360	560	5	YES
	New CSL0901BT	Blue	68	20	100 <sup>*2</sup>	5	-40 to +100	-40 to +100	2.9	5	10	5	470	5	36	56	90	5	YES
	New CSL0902VT	Red	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	630	20	140	250	450	20	YES
	New CSL0902UT	Red	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	620	20	180	350	560	20	YES
	New CSL0902DT	Orange	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	605	20	355	560	1,120	20	YES
	New CSL0902YT	Yellow	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	590	20	280	500	900	20	YES
	New CSL0902WT	Yellow	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	587	20	224	400	710	20	YES
	New CSL0902MT	Yellow Green	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	571	20	90	150	280	20	YES
	CSL0902PT	Green	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	560	20	28	45	90	20	YES
	CSL0903VT	Red	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	(630)	20	(355)	(700)	(900)	20	(YES)
	CSL0903UT	Red	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	(620)	20	(560)	(1,000)	(1,400)	20	(YES)
	CSL0903DT	Orange	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	(605)	20	(710)	(1,200)	(1,800)	20	(YES)
CSL0903YT	Yellow	87	35	100 <sup>*2</sup>	12	-40 to +100	-40 to +100	2.1	20	10	12	(590)	20	(560)	(800)	(1,400)	20	(YES)	
	SML-S13VT	Red	75	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.9	20	10	5	630	20	160	450	630	20	-
	SML-S13UT	Red	75	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.9	20	10	5	620	20	400	700	1,600	20	-
	SML-S13DT	Orange	75	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.9	20	10	5	605	20	630	1,400	2,500	20	-
	SML-S13YT	Yellow	78	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	10	5	590	20	630	1,400	2,500	20	-
	SML-S13MT	Yellow Green	78	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	10	5	572	20	160	400	630	20	-
	SML-S13PT	Green	78	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.0	20	10	5	560	20	63	160	400	20	-
	SMLS14EET	Green	117	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	3.3	20	10	5	527	20	1,800	3,000	4,500	20	-
	SMLS14EET	Blue	117	30	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	3.2	20	10	5	470	20	450	800	1,400	20	-
	CSL0701UT	Red	120	50	150 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	624	20	9,000	18,000	25,000	20	-
	CSL0701DT	Orange	120	50	150 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	605	20	20,000	35,000	50,000	20	-
(2 Colors type)																			
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)						Electrical and Optical Characteristics (T <sub>a</sub> =25°C)								Automotive Grade AEC-Q101/AEC-Q102		
			Power Dissipation P <sub>0</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>		Reverse Current I <sub>R</sub>		Dominant Wavelength λ <sub>D</sub>		Luminous Intensity I <sub>v</sub>				
								Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ (nm)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)		
	SML-P24MUW (R)	Yellow Green	54	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	21	40	20	-
		Red	52	20	100 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.1	20	10	5	620	20	25	52	100	20	-
	SML-D22MUW	Yellow Green	67	25	100 <sup>*2</sup>	5	-40 to +105	-40 to +110	2.0	5	10	5	570	5	6	10	16	5	-
		Red	65	25	100 <sup>*2</sup>	5	-40 to +105	-40 to +110	1.9	5	10	5	620	5	10	16	25	5	-
		Yellow	67	25	100 <sup>*2</sup>	5	-40 to +105	-40 to +110	2.0	5	10	5	588	5	16	25	40	5	-
	SML-522BU1W	Blue	66	20	60 <sup>*2</sup>	5	-40 to +85	-40 to +100	2.9	5	10	5	470	5	9	22	36	5	-
		Red	50	20	60 <sup>*2</sup>	5	-40 to +85	-40 to +100	1.9	5	10	5	624	5	10	21	40	5	-
		Yellow Green	52	20	60 <sup>*2</sup>	4	-30 to +85	-40 to +85	2.1	20	100	4	570	20	14	40	71	20	-
	SML-522MUW	Red	50	20	60 <sup>*2</sup>	4	-30 to +85	-40 to +85	1.9	20	100	4	630	20	22	63	110	20	-
		Yellow Green	54	20	100 <sup>*2</sup>	4	-40 to +85	-40 to +100	2.2	20	100	4	572	20	16	40	63	20	-
	SML-522MU8W	Red	54	20	100 <sup>*2</sup>	4	-40 to +85	-40 to +100	2.2	20	100	4	620	20	25	63	100	20	-
		Yellow Green	54	20	100 <sup>*2</sup>	4	-40 to +85	-40 to +100	2.2	20	100	4	572	20	10	25	40	20	-
		Orange	54	20	100 <sup>*2</sup>	4	-40 to +85	-40 to +100	2.2	20	100	4	605	20	40	100	160	20	-
	SML-522MD8W	Yellow Green	54	20	100 <sup>*2</sup>	4	-40 to +85	-40 to +100	2.2	20	100	4	572	20	16	40	63	20	-
		Yellow	54	20	100 <sup>*2</sup>	4	-40 to +85	-40 to +100	2.2	20	100	4	590	20	40	63	160	20	-
New SML-020MDT	SML-020MDT	Yellow Green	60	25	60 <sup>*1</sup>	4	-30 to +85	-40 to +85	2.2	20	100	4	570 <sup>*10</sup>	20	9	20	45	20	-
		Orange	60	25	60 <sup>*1</sup>	4	-30 to +85	-40 to +85	2	20	100	4	610 <sup>*10</sup>	20	6	10	18	20	-
	New SML-020MVT	Yellow Green	60	25	60 <sup>*1</sup>	4	-30 to +85	-40 to +85	2.2	20	100	4	570 <sup>*10</sup>	20	9	20	45	20	-
		Red	60	25	60 <sup>*1</sup>	4	-30 to +85	-40 to +85	2	20	100	4	650 <sup>*10</sup>	20	4	6	11	20	-
New SML-020MYT	Yellow Green	60	25	60 <sup>*1</sup>	4	-30 to +85	-40 to +85	2.2	20	100	4	570 <sup>*10</sup>	20	9	21	45	20	-	
Yellow	60	25	60 <sup>*1</sup>	4	-30 to +85	-40 to +85	2.1	20	100	4	585 <sup>*10</sup>	20	6	10	18	20	-		
(3 Colors type)																			
	SMLP34RGB2W	Red	35	10	50 <sup>*3</sup>	5	-40 to +85	-40 to +100	2.1	5	10	5	624	5	14	35	56	5	-
		Green	35	10	50 <sup>*3</sup>	5	-40 to +85	-40 to +100	3.1	5	10	5	527	5	56	110	220	5	-
		Blue	35	10	50 <sup>*3</sup>	5	-40 to +85	-40 to +100	3.0	5	10	5	470	5	28	45	110	5	-
	SMLP34RGB1W	Red	35	10	50 <sup>*3</sup>	5	-40 to +85	-40 to +100	2.1	5	10	5	624	5	36	80	140	5	-
		Green	35	10	50 <sup>*3</sup>	5	-40 to +85	-40 to +100	3.1	5	10	5	527	5	140	220	360	5	-
		Blue	35	10	50 <sup>*3</sup>	5	-40 to +85	-40 to +100	3	5	10	5	470	5	36	60	140	5	-
	SMLP36RGB2W (R)	Red	26	10	50 <sup>*3</sup>	5	-40 to +85	-40 to +100	2.1	5	10	5	624	5	14	35	56	5	-
		Green	26	10	50 <sup>*3</sup>	5	-40 to +85	-40 to +100	3.1	5	10	5	527	5	56	110	220	5	



# SMD LEDs

〈3 Colors type〉																				
Package (mm)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)							Electrical and Optical Characteristics (T <sub>a</sub> =25°C)										Automotive Grade AEC-Q101/AEC-Q102
			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)	Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ* (nm)	I <sub>F</sub> (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I <sub>F</sub> (mA)	
	MSL0104RGBU*8	Red	400 <sup>*6</sup>	50	100	5	-40 to +85	-40 to +100	2.1	20	10	5	624	20	450	700	1,100	20	YES	
		Green	400 <sup>*6</sup>	40	100	—	-40 to +85	-40 to +100	3.3	20	—	—	527	20	710	1,200	1,800	20	YES	
		Blue	400 <sup>*6</sup>	40	100	—	-40 to +85	-40 to +100	3.2	20	—	—	470	20	220	400	560	20	YES	
	MSL0104RGBW*8	Red	400 <sup>*6</sup>	50	100	5	-40 to +85	-40 to +100	2.1	20	10	5	624	20	450	700	1,100	20	—	
		Green	400 <sup>*6</sup>	40	100	—	-40 to +85	-40 to +100	3.3	20	—	—	527	20	710	1,200	1,800	20	—	
		Blue	400 <sup>*6</sup>	40	100	—	-40 to +85	-40 to +100	3.2	20	—	—	470	20	220	400	560	20	—	
	MSL0601RGBU	Red	300 <sup>*6</sup>	40	100	5	-40 to +85	-40 to +100	2.1	20	10	5	624	20	600	700	830	20	—	
		Green	300 <sup>*6</sup>	30	100	5	-40 to +85	-40 to +100	3.3	20	10	5	527	20	1,100	1,250	1,500	20	—	
		Blue	300 <sup>*6</sup>	30	100	5	-40 to +85	-40 to +100	3.2	20	10	5	470	20	290	360	500	20	—	

\*1 Duty 1/5, 200Hz \*2 Duty 1/10, 1kHz \*3 Duty ≤ 1/20, 1ms \*4 Duty ≤ 1/5, 1kHz \*5 Duty 1/10, pulse width 10ms Max  
 \*6 Total power dissipation in case of lighting three colors. (when lighting three colors, it will be reduced down to 30% of it.)  
 \*7 50mm×50mm, Substrate: FR4; t=1.6mm Cu foil: t=0.07mm  
 \*8 Epoxy resin \*9 Silicon resin \*10 Peak wavelength  
 Note: "PICOLED™" is a pending trademarks of ROHM Co., Ltd. (YES): Planning ( ): Reference : Under Development

〈Surface Mount type Infrared LEDs〉																				
Package (mm)	Part No.	LED Chip	Emitting Color	Absolute Maximum Rating (T <sub>a</sub> =25°C)							Electrical and Optical Characteristics (T <sub>a</sub> =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)	Typ (V)	I <sub>F</sub> (mA)	Max (μA)	V <sub>R</sub> (V)	Typ (nm)	I <sub>F</sub> (mA)	Min (mW/sr)	Typ (mW/sr)	Max (mW/sr)	I <sub>F</sub> (mA)
	SML-M13RT	AlGaAs	Infrared	60	30	100 <sup>*1</sup>	5	-40 to +85	-40 to +100	1.4	20	10	5	870	20	0.5	1.7	3.5	20	
	SML-S13RT	AlGaAs	Infrared	60	30	300 <sup>*1</sup>	5	-40 to +85	-40 to +100	1.4	20	10	5	850	20	1.5	2.5	3.6	20	
	<b>New</b> SML-S15R2T	AlGaAs	Infrared	100	50	300 <sup>*1</sup>	5	-40 to +85	-40 to +100	1.4	20	10	5	870	20	5.6	12	22	20	
	SCM-013RT	AlGaAs	Infrared	57	30	300 <sup>*1</sup>	5	-40 to +85	-40 to +100	1.4	20	10	5	850	20	0.5	2.0	5.0	20	
	CSL0901R2T	AlGaAs	Infrared	(60)	(30)	(100) <sup>*1</sup>	(5)	(-40 to +85)	(-40 to +100)	(1.4)	20	(10)	5	(870)	20	(1.4)	(2.8)	(5.6)	20	
	CSL1001R2W	AlGaAs	Infrared	(60)	(30)	(100) <sup>*1</sup>	(5)	(-40 to +85)	(-40 to +100)	(1.4)	20	(10)	5	(870)	20	(0.56)	(1.1)	(2.2)	20	
	CSL1201R2T	AlGaAs	Infrared	(60)	(30)	(100) <sup>*1</sup>	(5)	(-40 to +85)	(-40 to +100)	(1.4)	20	(10)	5	(870)	20	(1.4)	(2.8)	(5.6)	20	
	CSL1301R2W	AlGaAs	Infrared	(60)	(30)	(100) <sup>*1</sup>	(5)	(-40 to +85)	(-40 to +100)	(1.4)	20	(10)	5	(870)	20	(0.56)	(1.1)	(2.2)	20	
	SML-M15R2T	AlGaAs	Infrared	(60)	(30)	(100) <sup>*1</sup>	(5)	(-40 to +85)	(-40 to +100)	(1.4)	20	(10)	5	(870)	20	(1.5)	(2.5)	(3.5)	20	

〈Surface Mount photo transistor〉																			
Package (mm)	Part No.	LED Chip	Absolute Maximum Ratings (T <sub>a</sub> =25°C)							Electrical and Optical Characteristics (T <sub>a</sub> =25°C)									
			Collector-Emitter Voltage (V)	Emitter-Collector Voltage (V)	Collector Current (mA)	Collector Power Dissipation (mW)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Light Current		Dark Current		Sensitivity Wavelength λ <sub>p</sub> Typ (nm)	Collector-Emitter Saturation Voltage					
								Min (mA)	Max (mA)	V <sub>CE</sub> (V) / I <sub>C</sub> (mA)	Max (μA)	V <sub>CE</sub> (V)	λ <sub>p</sub> Typ (nm)	Min (V)	Typ (V)	Max (V)	I <sub>C</sub> (mA) / I <sub>E</sub> (mA)		
	SML-H10TB	Si	32	5	30	80	-30 to +85	-30 to +100	2.0	4.0	5/500	0.5	10	800	—	—	0.4	0.1/500	
	SCM-014TB	Si	32	5	30	100	-30 to +85	-30 to +100	0.3	3.8	5/500	0.5	10	800	—	—	0.4	0.1/500	
	SML-810TB	Si	32	5	30	80	-30 to +85	-30 to +100	2.3	3.8	5/500	0.5	10	800	—	—	0.4	0.1/500	
	CSL1001TB	Si	(30)	(5)	(20)	(75)	(-40 to +85)	(-40 to +100)	(1.0)	(4.0)	5/500	(0.5)	10	(800)	—	—	(0.4)	0.1/500	
	CSL1301TB	Si	(30)	(5)	(20)	(75)	(-40 to +85)	(-40 to +100)	(1.0)	(4.0)	5/500	(0.5)	10	(800)	—	—	(0.4)	0.1/500	

\*1 Duty 1/10, 1kHz ( ): Reference : Under Development

## Product No. Configuration (Chip LEDs)

[SML series/SCM series]

Exclude Mono-color (Blue (B), Green (E), White (WB) and RGB)

Series name	Package shape	Type of Element	Color	Chip control symbol	Remarks	Resin color	Packaging type	Brightness rank	Special control symbol																																																																																																						
<b>S</b>	<b>M</b>	<b>L</b>	<b>-</b>	<b>D</b>	<b>1</b>	<b>2</b>	<b>V</b>	<b>8</b>	<b>W</b>	<b>T</b>	<b>8</b>	<b>6</b>																																																																																																			
<b>SML</b> chip LED series	<table border="1"> <tr><td>P1</td><td>1.0x0.6 t=0.2mm</td></tr> <tr><td>E1</td><td>1.6x0.8 t=0.36mm</td></tr> <tr><td>D1/D2</td><td>1.6x0.8 t=0.55mm</td></tr> <tr><td>H1</td><td>2.0x1.25 t=0.8mm</td></tr> <tr><td>M1</td><td>2.0x1.25 t=0.8mm</td></tr> <tr><td>D1/O2</td><td>3.0x2.0 t=1.3mm</td></tr> <tr><td>Z1/Y1</td><td>3.5x2.8 t=1.9mm</td></tr> <tr><td>A1</td><td>1.6x1.15 t=0.55mm</td></tr> <tr><td>B1/B2</td><td>3.4x1.25 t=1.1mm</td></tr> <tr><td>S1</td><td>3.2x1.6 t=1.85mm</td></tr> <tr><td>P2</td><td>1.0x1.0 t=0.2mm</td></tr> <tr><td>S2</td><td>1.5x1.3 t=0.6mm</td></tr> </table>	P1	1.0x0.6 t=0.2mm	E1	1.6x0.8 t=0.36mm	D1/D2	1.6x0.8 t=0.55mm	H1	2.0x1.25 t=0.8mm	M1	2.0x1.25 t=0.8mm	D1/O2	3.0x2.0 t=1.3mm	Z1/Y1	3.5x2.8 t=1.9mm	A1	1.6x1.15 t=0.55mm	B1/B2	3.4x1.25 t=1.1mm	S1	3.2x1.6 t=1.85mm	P2	1.0x1.0 t=0.2mm	S2	1.5x1.3 t=0.6mm	<table border="1"> <tr><td>0</td><td>Low current type</td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td>High brightness type</td></tr> <tr><td>3</td><td></td></tr> <tr><td>4</td><td>Ultra high brightness type</td></tr> <tr><td>5</td><td></td></tr> <tr><td>8</td><td></td></tr> </table>	0	Low current type	1		2	High brightness type	3		4	Ultra high brightness type	5		8		<table border="1"> <tr><td>V</td><td>Red</td><td>M</td><td>Yellow green</td></tr> <tr><td>U</td><td>Red</td><td>F</td><td>Green</td></tr> <tr><td>U2</td><td>Red</td><td>P</td><td>Green</td></tr> <tr><td>D</td><td>Orange</td><td>MV</td><td>Yellow green/Red</td></tr> <tr><td>Y3</td><td>Yellow</td><td></td><td></td></tr> <tr><td>Y</td><td>Yellow</td><td>MU</td><td>Yellow green/Red</td></tr> <tr><td>W</td><td>Yellow</td><td></td><td></td></tr> <tr><td>Y2</td><td>Yellow</td><td>MD</td><td>Yellow green/Orange</td></tr> <tr><td>M2</td><td>Yellow green</td><td></td><td></td></tr> <tr><td></td><td></td><td>MY</td><td>Yellow green/Yellow</td></tr> <tr><td></td><td></td><td>YV</td><td>Yellow/Red</td></tr> <tr><td></td><td></td><td>R</td><td>Infrared</td></tr> <tr><td></td><td></td><td>T</td><td>Phototransistor</td></tr> </table>	V	Red	M	Yellow green	U	Red	F	Green	U2	Red	P	Green	D	Orange	MV	Yellow green/Red	Y3	Yellow			Y	Yellow	MU	Yellow green/Red	W	Yellow			Y2	Yellow	MD	Yellow green/Orange	M2	Yellow green					MY	Yellow green/Yellow			YV	Yellow/Red			R	Infrared			T	Phototransistor			<table border="1"> <tr><td>T</td><td>Transparent colorless</td></tr> <tr><td>W</td><td>Milky white</td></tr> <tr><td>B</td><td>Black</td></tr> </table>	T	Transparent colorless	W	Milky white	B	Black	<table border="1"> <tr><td>T86</td><td>Cathode at sprocket hole side (the top)</td></tr> <tr><td>T86</td><td>Cathode at sprocket hole side (the back)</td></tr> <tr><td>T68</td><td>Cathode at sprocket hole side (the top)</td></tr> </table>	T86	Cathode at sprocket hole side (the top)	T86	Cathode at sprocket hole side (the back)	T68	Cathode at sprocket hole side (the top)	Refer to specification	
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[SML series/SCM series]

Mono-color (Blue (B), Green (E), White (WB) and RGB)

Chromaticity rank (for PB/SB/E2/E3/white/RGB LED) or Wavelength rank (SMLD12E2/D12E3 only)  
\*SMLP34RGB2W, SMLP36RGB2W (R) is not applied.

Series name	Package shape	Type of Element	Color	Chip control symbol	Remarks	Resin color	Packaging type	Brightness rank	Special control symbol																																																																																				
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[CSL series]

Series name	Package shape	Color	Chip control symbol	Remarks	Resin color	Packaging type	Brightness rank	Chromaticity rank (for white LED)	Special control symbol																																									
<b>C</b>	<b>S</b>	<b>L</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>D</b>	<b>T</b>	<b>5</b>																																									
<b>CSL</b> chip LED series	<table border="1"> <tr><td>04</td><td>2.8x1.15 t=0.8mm</td></tr> <tr><td>07</td><td>2.9x2.4 t=3.1mm</td></tr> <tr><td>09</td><td>1.6x0.8 t=1.24mm</td></tr> <tr><td>10</td><td>1.6x0.8 t=1.24mm</td></tr> <tr><td>11</td><td>1.6x0.8 t=0.55mm</td></tr> </table>	04	2.8x1.15 t=0.8mm	07	2.9x2.4 t=3.1mm	09	1.6x0.8 t=1.24mm	10	1.6x0.8 t=1.24mm	11	1.6x0.8 t=0.55mm	<table border="1"> <tr><td>V</td><td>Red</td><td>M</td><td>Yellow green</td></tr> <tr><td>U</td><td>Red</td><td>P</td><td>Green</td></tr> <tr><td>D</td><td>Orange</td><td>E</td><td>Green</td></tr> <tr><td>Y</td><td>Yellow</td><td>B</td><td>Blue</td></tr> <tr><td>W</td><td>Yellow</td><td>WB</td><td>White</td></tr> <tr><td></td><td></td><td>SB</td><td>Sapphire blue</td></tr> </table>	V	Red	M	Yellow green	U	Red	P	Green	D	Orange	E	Green	Y	Yellow	B	Blue	W	Yellow	WB	White			SB	Sapphire blue			<table border="1"> <tr><td>T</td><td>Transparent Colorless</td></tr> <tr><td>W</td><td>Milky white</td></tr> </table>	T	Transparent Colorless	W	Milky white	<table border="1"> <tr><td>1</td><td>Cathode at sprocket hole side (the top)</td></tr> <tr><td>5</td><td>Cathode at sprocket hole side (big reel)</td></tr> </table>	1	Cathode at sprocket hole side (the top)	5	Cathode at sprocket hole side (big reel)	Refer to specification	
04	2.8x1.15 t=0.8mm																																																	
07	2.9x2.4 t=3.1mm																																																	
09	1.6x0.8 t=1.24mm																																																	
10	1.6x0.8 t=1.24mm																																																	
11	1.6x0.8 t=0.55mm																																																	
V	Red	M	Yellow green																																															
U	Red	P	Green																																															
D	Orange	E	Green																																															
Y	Yellow	B	Blue																																															
W	Yellow	WB	White																																															
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T	Transparent Colorless																																																	
W	Milky white																																																	
1	Cathode at sprocket hole side (the top)																																																	
5	Cathode at sprocket hole side (big reel)																																																	

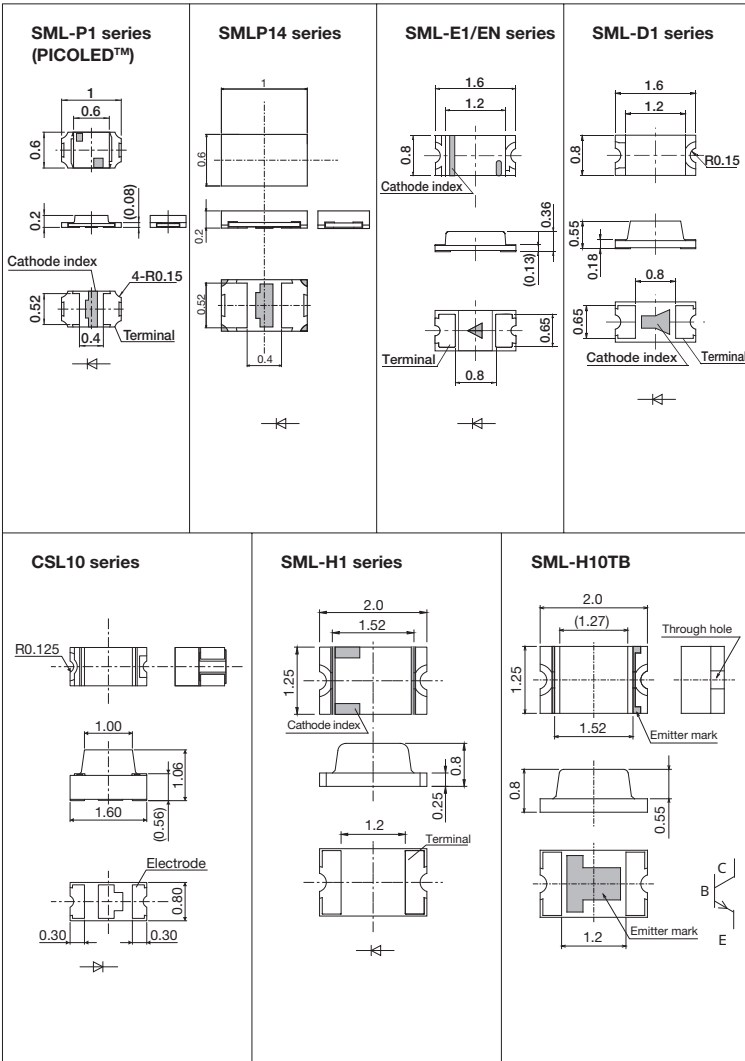
[MSL series]

Series name	Package shape	Color	Chip control symbol	Remarks	Resin color	Packaging type	Brightness rank	Chromaticity rank (for RGB LED)	Special control symbol															
<b>M</b>	<b>S</b>	<b>L</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>R</b>	<b>G</b>	<b>B</b>	<b>U</b>	<b>1</b>													
<b>MSL</b> Multi color series	<table border="1"> <tr><td>01</td><td>6.9x2.2 t=2.15mm</td></tr> <tr><td>04</td><td>1.6x1.6 t=0.5mm</td></tr> <tr><td>05</td><td>3.5x2.8 t=0.6mm</td></tr> <tr><td>06</td><td>2.9x1.35 t=1.0mm</td></tr> </table>	01	6.9x2.2 t=2.15mm	04	1.6x1.6 t=0.5mm	05	3.5x2.8 t=0.6mm	06	2.9x1.35 t=1.0mm	<table border="1"> <tr><td>RGB</td><td>Red/Green/Blue</td></tr> </table>	RGB	Red/Green/Blue			<table border="1"> <tr><td>U</td><td>Silicone</td></tr> <tr><td>W</td><td>Epoxy</td></tr> </table>	U	Silicone	W	Epoxy	<table border="1"> <tr><td>1</td><td>Cathode at sprocket hole side (the top)</td></tr> </table>	1	Cathode at sprocket hole side (the top)	Refer to specification	
01	6.9x2.2 t=2.15mm																							
04	1.6x1.6 t=0.5mm																							
05	3.5x2.8 t=0.6mm																							
06	2.9x1.35 t=1.0mm																							
RGB	Red/Green/Blue																							
U	Silicone																							
W	Epoxy																							
1	Cathode at sprocket hole side (the top)																							

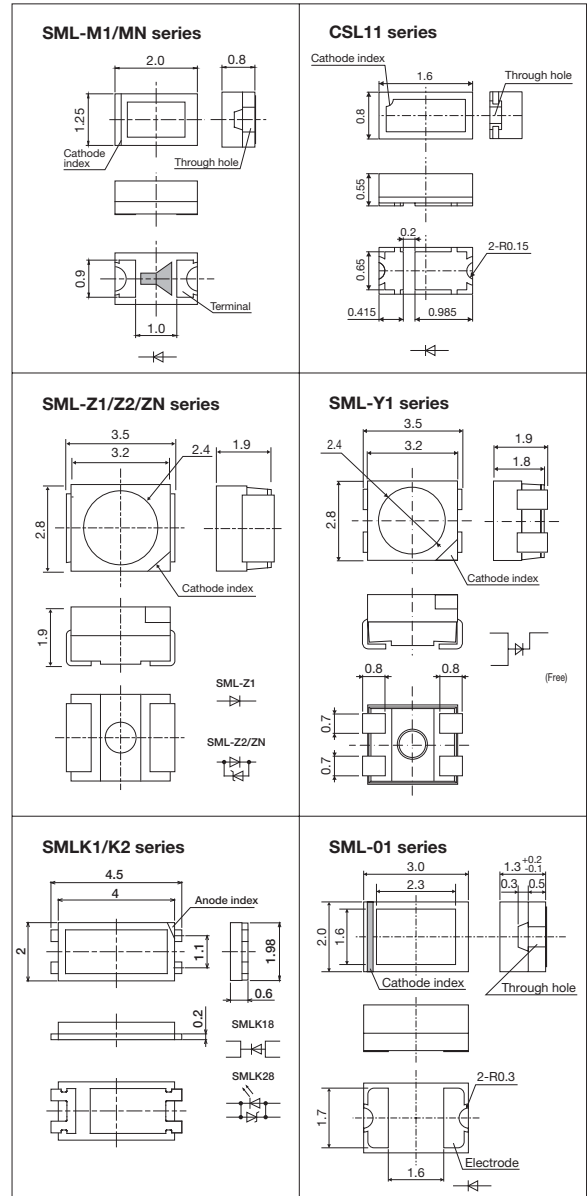
# SMD LEDs

Dimensions (Unit: mm)

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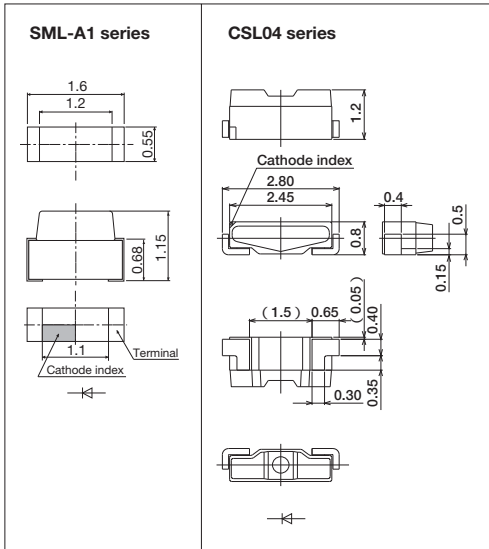


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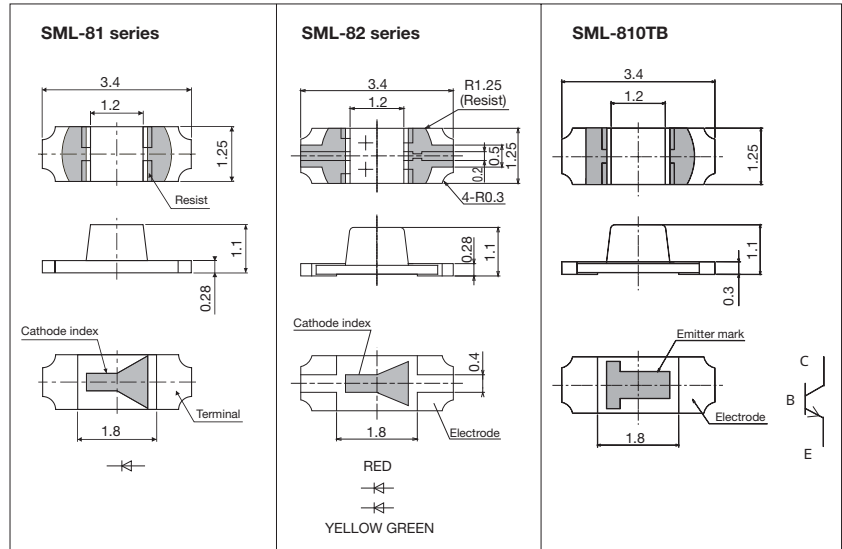


\*PICOLED™ is a pending trademarks of ROHM Co., Ltd.

<Side View type>



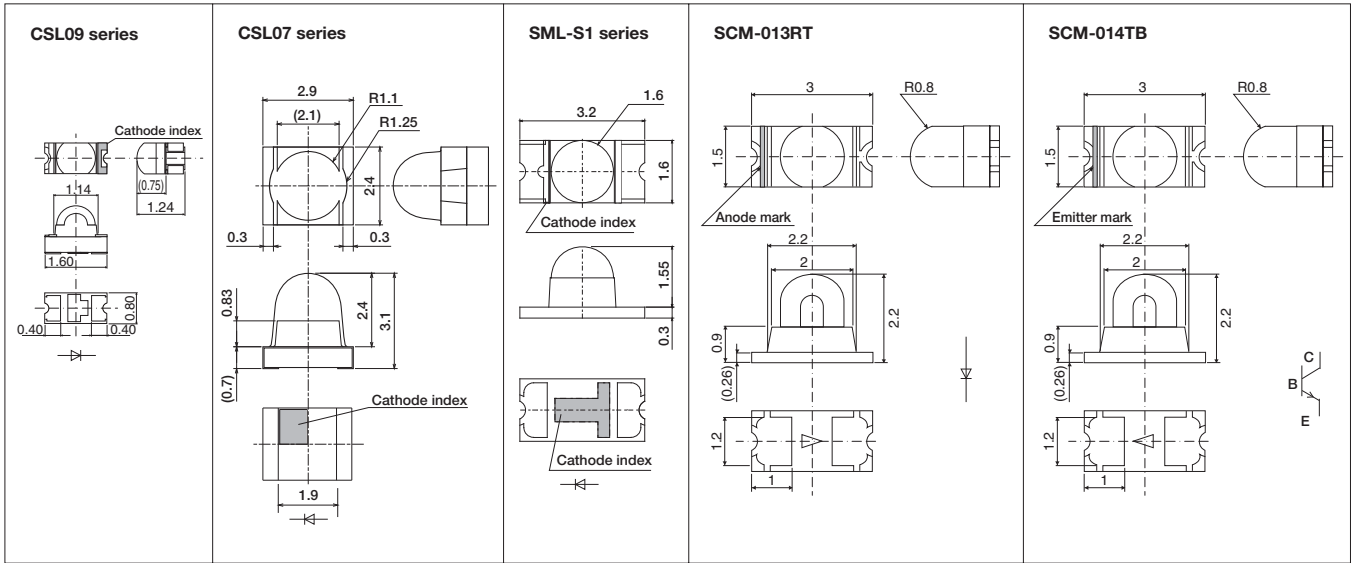
<Reverse Mount type>



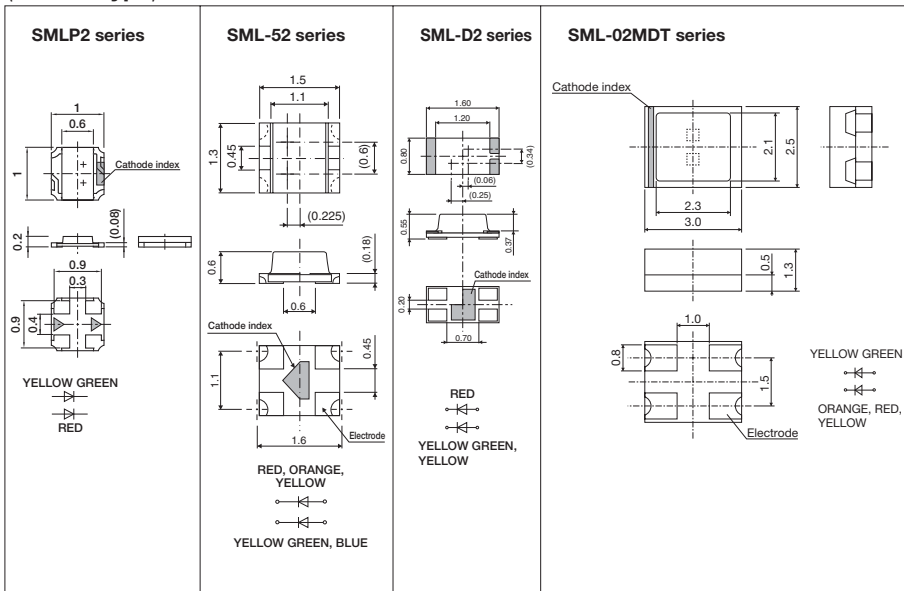
\*For further information, please refer to the data sheets.

: Under Development

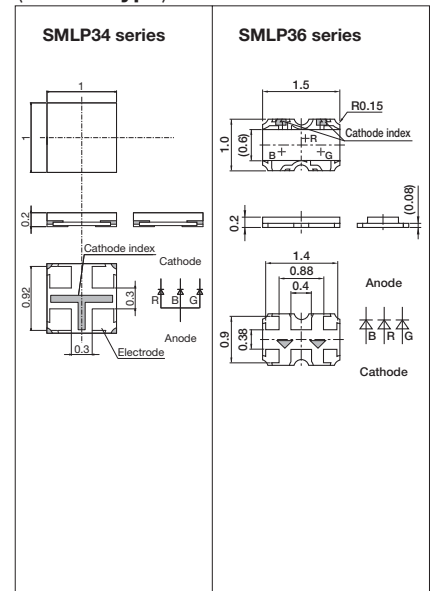
Surface Mount Lens type



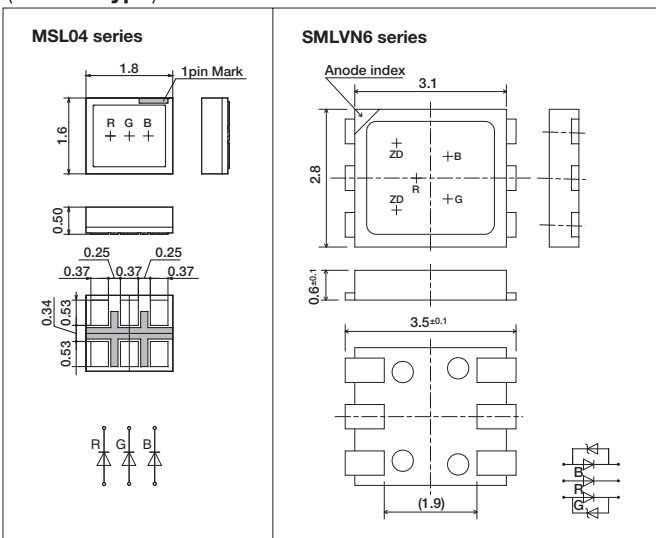
2 Color type



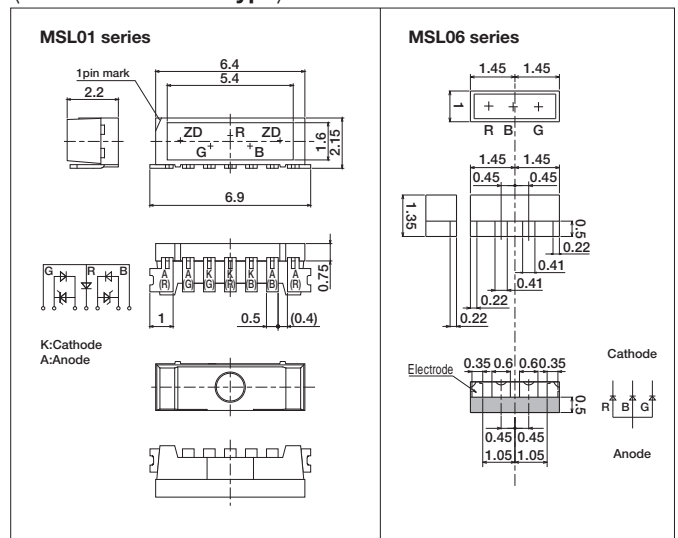
3 Color type



3 Color type



3 Color Side View type



\*For further information, please refer to the data sheets.



**Green (M, P, E) Quick Reference of Brightness**

<High Brightness Rank Table1>

XA	XB	XC	XD	XE	XF	XG	XH	XJ	XK	XL	XM	XN	XP	XQ	XR	XS	XT	XU
10 to 15	15 to 22	22 to 33	33 to 47	47 to 68	68 to 100	100 to 150	150 to 220	220 to 330	330 to 470	470 to 680	680 to 1000	1000 to 1500	1500 to 2200	2200 to 3300	3300 to 4700	4700 to 6800	6800 to 10000	10000 to 15000

<High Brightness Rank Table2>

XA	XB	XC	XD	XE	XF	XG	XH	XJ	XK	XL	XM	XN	XP	XQ	XR	XS	XT	XU
9.0 to 16.5	13.5 to 24	20 to 36	30 to 52	42 to 75	61 to 110	90 to 165	135 to 240	200 to 360	300 to 520	420 to 750	600 to 1100	900 to 1650	1350 to 2400	2000 to 3600	3000 to 5200	4200 to 7500	6100 to 11000	9000 to 16500

	Viewing angle (2θ1/2)	Resin Color	Brightness Rank Brightness (mcd) If (mA)	J	K	L	M	N	P	Q	R	S	T	U	V					
				2.2 to 4.5	3.6 to 7.1	5.6 to 11	9 to 18	14 to 28	22 to 45	36 to 71	56 to 110	90 to 180	140 to 280	220 to 450	360 to 710					
φ3 Circular type (Direct mount 5mm pitch type)	40°	Transparent Colored	20												*SLI-343MC					
			10												SLI-343M8C*1					
			10												*SLR-343PC					
		Diffused Colored	20												*SLI-343MG					
			10												SLI-343P8G*1					
			10												*SLR-343PG					
φ3 Flat disc type	50°	Diffused Colored	20												*SLR343EC4T*2					
			10												*SLR343EC4T*2					
φ4 Oval type	140°	Diffused Colored	20												*SLR-332MC					
			10												*SLR-332MG					
	10°	Transparent Colorless	20												*SLR-325MC					
			10												*SLR-325MG					
φ5 Circular type	20°	Transparent Colorless	20												*SLR-322MC					
			10												*SLR-322MG					
	40°	Transparent Colored	10												SLI-430MG*1					
			20												*SLA-580MT*2					
	40°	Diffused Colored	10												*SLA-560MT*2					
			20												*SLA-570MT*2					
40°	Transparent Colorless	10												*SLR-56MC						
		20												*SLR-56MG						
															*SLA580EC4T*2					
															*SLA560EC4T*2					
															*SLA580ECT*2					
															*SLA560ECT*2					

**Blue (B) Quick Reference of Brightness**

<High Brightness Rank Table2>

XA	XB	XC	XD	XE	XF	XG	XH	XJ	XK	XL	XM	XN	XP	XQ	XR	XS	XT	XU
9.0 to 16.5	13.5 to 24	20 to 36	30 to 52	42 to 75	61 to 110	90 to 165	135 to 240	200 to 360	300 to 520	420 to 750	600 to 1100	900 to 1650	1350 to 2400	2000 to 3600	3000 to 5200	4200 to 7500	6100 to 11000	9000 to 16500

	Viewing angle (2θ1/2)	Resin Color	Brightness Rank Brightness (mcd) If (mA)	XH	XJ	XK	XL	XM	XN	XP	XQ	XR	XS	XT	XU				
				150 to 220	220 to 330	330 to 470	470 to 680	680 to 1000	1000 to 1500	1500 to 2200	2200 to 3300	3300 to 4700	4700 to 6800	6800 to 10000	10000 to 15000				
φ3 Circular type	40°	Transparent Colorless	20												SLR343BC7T				
			20												SLR343BD2T				
			20												*SLR343BC4T*2				
			20												*SLR343BC*2				
φ4 Oval type	140°	Milky White	20												SLD430BD2W				
φ5 Circular type	10°	Transparent Colorless	20												*SLA580BC4T*2				
			20												*SLA580BCT*2				
	40°	Transparent Colorless	20												SLA560BD2T*2				
			20												*SLA560BC4T*2				
															*SLA560BCT*2				

**White (WB) Quick Reference of Brightness**




<High Brightness Rank Table2>

XA	XB	XC	XD	XE	XF	XG	XH	XJ	XK	XL	XM	XN	XP	XQ	XR	XS	XT	XU
9.0 to 16.5	13.5 to 24	20 to 36	30 to 52	42 to 75	61 to 110	90 to 165	135 to 240	200 to 360	300 to 520	420 to 750	600 to 1100	900 to 1650	1350 to 2400	2000 to 3600	3000 to 5200	4200 to 7500	6100 to 11000	9000 to 16500

	Viewing angle (2θ1/2)	Resin Color	Brightness Rank Brightness (mcd) If (mA)	XJ	XK	XL	XM	XN	XP	XQ	XR	XS	XT	XU				
				220 to 330	330 to 470	470 to 680	680 to 1000	1000 to 1500	1500 to 2200	2200 to 3300	3300 to 4700	4700 to 6800	6800 to 10000	10000 to 15000				
φ3 Circular type	40°	Transparent Colorless	20												SLR343WBC7T			
			20												SLR343WBD2PT			
φ4 Oval type	140°	Milky White	20												SLD430WBD2PT			
φ5 Circular type	40°	Transparent Colorless	20												SLA560WBD2PT*2			

\*Brightness on specification sheet include tolerance of within ±10%. \*\* This product refer to high brightness rank table1. \*2 This product refer to high brightness rank table2.



◀Oval type▶																									
Shape	Package Image	Viewing Angle 201/2 (Element type)	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)							Electrical and Optical Characteristics (T <sub>a</sub> =25°C)											Automotive Grade AEC-Q101/ AEC-Q102		
					Power Dissipation P <sub>D</sub> (mW)	Forward Current I <sub>F</sub> (mA)	Peak Forward Current I <sub>FM</sub> (mA)	Reverse Voltage V <sub>R</sub> (V)	Operating Temperature T <sub>opr</sub> (°C)	Storage Temperature T <sub>stg</sub> (°C)	Forward Voltage V <sub>F</sub>	Reverse Current I <sub>R</sub>	Dominant Wavelength λ <sub>D</sub> / Chromaticity Coordinates (x,y)		Luminous Intensity I <sub>v</sub>										
◀Other▶																									
Shape	Package Image	Viewing Angle	Part No.	Emitting Color	Absolute Maximum Ratings (T <sub>a</sub> =25°C)							Electrical and Optical Characteristics (T <sub>a</sub> =25°C)											Automotive Grade AEC-Q101/ AEC-Q102		
					Power Dissipation P <sub>D</sub> (mW)	Forward Current I <sub>F</sub> (mA)	Peak Forward Current I <sub>FM</sub> (mA)	Reverse Voltage V <sub>R</sub> (V)	Operating Temperature T <sub>opr</sub> (°C)	Storage Temperature T <sub>stg</sub> (°C)	Forward Voltage V <sub>F</sub>	Reverse Current I <sub>R</sub>	Dominant Wavelength λ <sub>D</sub> / Chromaticity Coordinates (x,y)		Luminous Intensity I <sub>v</sub>										
Oval type φ4		140°	SLI-430U2R	Red	75	30	100*2	9	-40 to +85	-40 to +100	2.0	20	10	9	620*3	20	220	400	(680)	20	—				
			SLI-430DU	Orange	75	30	100*2	9	-40 to +85	-40 to +100	2.1	20	10	9	605*3	20	220	470	(680)	20	—				
			SLI-430Y2U	Yellow	75	30	100*2	9	-40 to +85	-40 to +100	2.1	20	10	9	590*3	20	330	500	(900)	20	—				
			SLI-430MG	Yellow Green	75	30	100*2	9	-40 to +85	-40 to +100	2.1	20	10	9	570*3	20	68	120	(220)	20	—				
			SLD430BD2W	Blue	120	30	100*2	5	-40 to +85	-40 to +100	3.2	20	10	5	470*3	20	330	560	(1,000)	20	—				
			SLD430WBD2PT	White	120	30	100*2	5	-40 to +85	-40 to +100	3.2	20	10	5	(x, y) (0.31, 0.31)	20	680	1,850	(3,300)	20	—				
φ3.2 Circular type  Direct Mount 5mm Pitch type		40°	SLI-325URC (W)*1	Red	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	630	20	36	160	(280)	20	—				
			SLI-325UR (W)*1	Red	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	630	20	36	100	(280)	20	—				
			SLI-325DC (W)*1	Orange	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	611	20	36	160	(280)	20	—				
			SLI-325DU (W)*1	Orange	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	611	20	36	100	(280)	20	—				
			SLI-325YC (W)*1	Yellow	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	591	20	36	160	(280)	20	—				
			SLI-325YY (W)*1	Yellow	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	591	20	36	100	(280)	20	—				
		40°	SLR-325VC*1	Red	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	650	10	6	16	(45)	10	—				
			SLR-325VR*1	Red	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	650	10	4	10	(28)	10	—				
			SLR-325DC*1	Orange	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	6	16	(45)	10	—				
			SLR-325DU*1	Orange	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	4	10	(28)	10	—				
			SLR-325YC*1	Yellow	60	20	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	585	10	6	16	(45)	10	—				
			SLR-325YY*1	Yellow	60	20	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	585	10	2	6	(18)	10	—				
φ3 Flat Disc type		35°	SLR-322VC	Red	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	650	10	6	16	(45)	10	—				
			SLR-322DC	Orange	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	6	16	(45)	10	—				
			SLR-322YC	Yellow	60	20	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	585	10	4	10	(28)	10	—				
		50°	SLR-322MC	Yellow Green	75	25	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	563	10	9	25	(71)	10	—				
			SLR-322VR	Red	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	650	10	4	10	(45)	10	—				
			SLR-322DU	Orange	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	2	6	(18)	10	—				
			SLR-322YU	Yellow	60	20	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	585	10	4	10	(28)	10	—				
			SLR-322MG	Yellow Green	75	25	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	563	10	6	16	(45)	10	—				

\*SLI-325/SLR-325 series: straight taping only.  
\*1 Duty1/5, 200Hz \*2 Duty1/10, 1kHz \*3 Dominant Wavelength

## Product No. Configuration ◀Through-hole LEDs▶

Exclude Mono-color (Blue (B), Green (E), White (WB))

Chip control symbol      Remarks      Special control symbol

S
L
I
-
3
4
3
V
8
R
C
3
F

Series name      Package shape      Color      Resin color      Packaging type      Brightness rank

SLA 1-Die Circular type High Brightness LED Lamps SLI 1-Die Circular type Low Current High Brightness LED Lamps SLR 1-Die Circular type LED Lamp	343 φ3 Circular type 332 φ3 Circular type 56 φ5 Circular type 560 φ5 Circular type 570 φ5 Circular type 580 φ5 Circular type 430 Oval type φ4 325 φ3.2 Circular type 322 φ3 Flat disc type	V Red U Red U2 Red D Orange Y Yellow M Yellowish green P Green	R <Red>Diffused colored U <Orange>Diffused colored Y <Yellow>Diffused colored G <Yellowish green>Diffused colored C Transparent colored T Transparent colorless	3F 1-Die straight bulk T31 Refer to taping specification T32 Refer to taping specification	Refer to specification
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## Mono-color (Blue (B), Green (E), White (WB))

Chip control symbol      Remarks      Chromaticity rank (for white LED)  
\*SLA560WBD2PT is not applied.      Special control symbol

S
L
R
3
4
3
W
B
D
2
P
T
2

Series name      Package shape      Color      Resin color      Packaging type      Brightness rank

SLA 1-Die Circular type High Brightness LED Lamps SLR 1-Die Circular type LED Lamps SLD 1-Die Oval type High Brightness LED Lamps	343 φ3 Circular type 560 φ5 Circular type 580 φ5 Circular type 430 Oval type φ4	BC Blue BD Blue EC Green WB White	T Transparent colorless W Milky white	3F 1-Die straight bulk T31 Refer to specification T32 Refer to specification	Refer to specification
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(in case of white)

3 1-Die straight bulk	1 Refer to specification (same as T31)	2 Refer to specification (same as T32)
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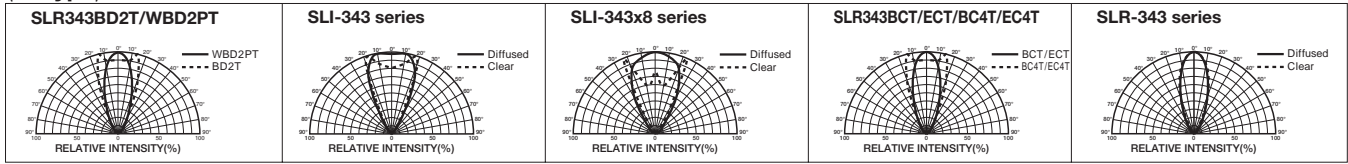
LEDs



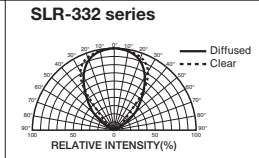
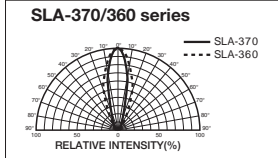
# Through-hole LEDs

Viewing Angle (Unit: deg)

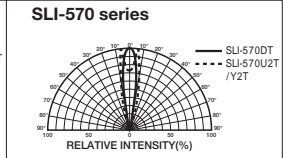
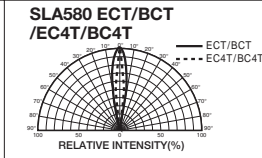
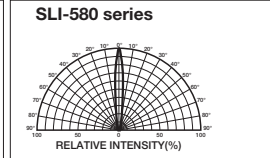
⟨ $\phi 3$  type⟩



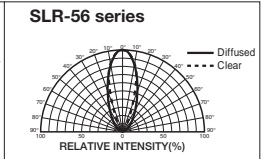
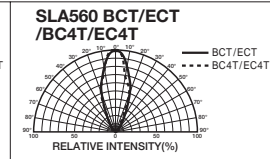
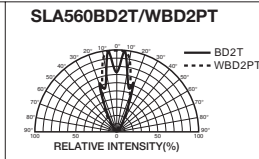
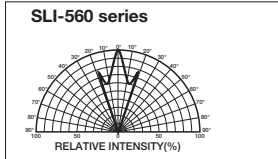
⟨ $\phi 3$  type⟩



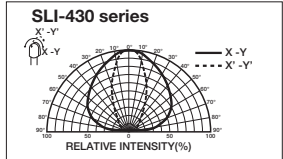
⟨ $\phi 5$  type⟩



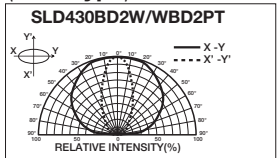
⟨ $\phi 5$  type⟩



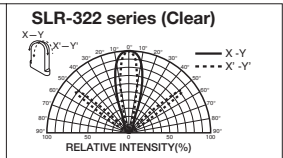
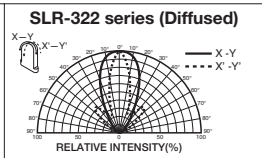
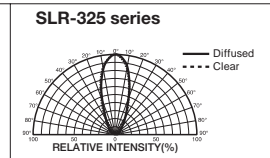
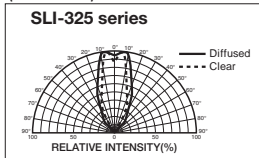
⟨Oval type⟩



⟨Oval Type⟩



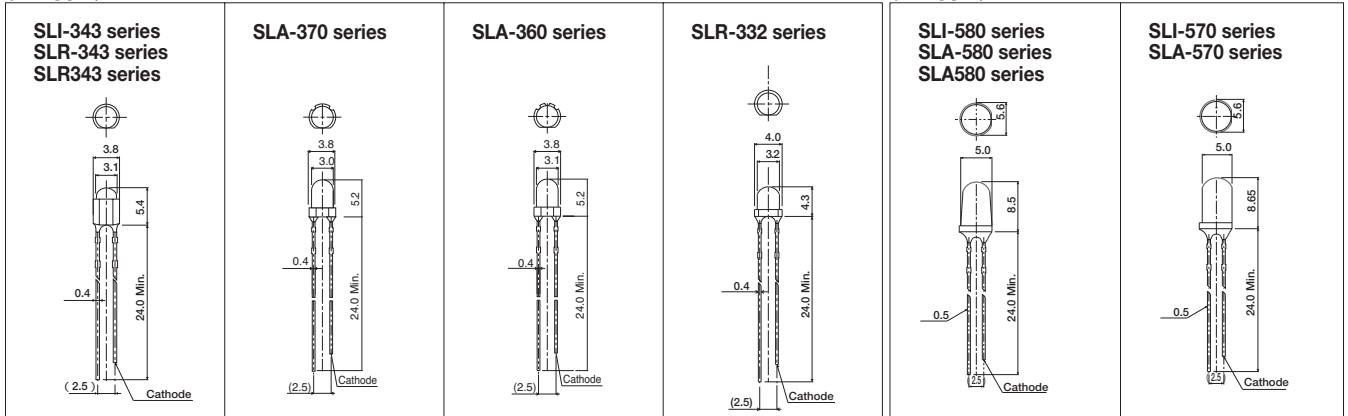
⟨Others⟩



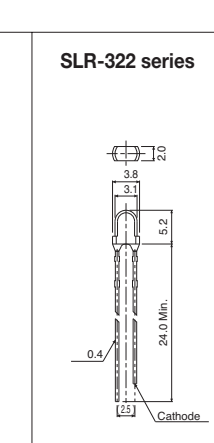
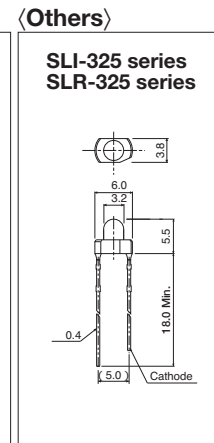
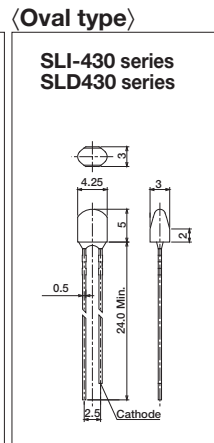
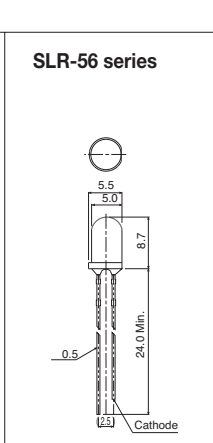
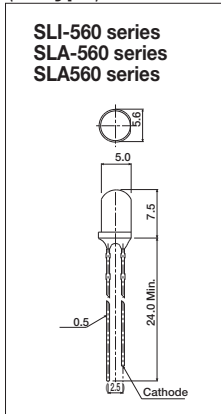
Note: Viewing Angle shown above are the reference data from standard product. For the part numbers other than the above, please contact us.

## Dimensions (Unit: mm)

⟨ $\phi 3$  type⟩



⟨ $\phi 5$  type⟩



\*For further information, please refer to specification.