

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 _F (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	20	SML-P11VT (R)		SML-P11UT (R)		SML-P12VT (R)		SML-P12UT (R)		SML-P12U2T (R)		SML-E12V8W		SML-E12U8W		*SML-E12UW				
					SML-D12L8W		SML-D15VW		SML-D14VW (A)*		SML-D13VW (A)*		SML-D12V1W		SML-D12V8W		SML-D15UW		SML-D15U2W				
	1608	0.36	20	SML-D13UW (A)*		SML-D13U8W		SML-D12U1W		SML-D12U8W		SML-H12V8T		SML-H12U8T		SML-M13VT		SML-M13UT					
				SML-010VT		SML-011UT		SML-011VT (A)*		SML-012VT (A)*		SML-012V8T		SML-012U8T		SML-012UT		SML-013UT		SML-Z14V4T*			
				SML-010VT		SML-011VT (A)*		SML-012VT (A)*		SML-012V8T		SML-012U8T		SML-012UT		SML-013UT		SML-Z14V4T*		SML-Z14U4T*			
		0.55	20	SML-A12V8T		SML-A12U8T		*SML-A12UT (J)		SML-811VT (A)*		SML-811UT (A)*		CSL0901VT		CSL0901UT		CSL0902VT		CSL0902UT		*CSL0903VT	
				SML-A12V8T		SML-A12U8T		*SML-A12UT (J)		SML-811VT (A)*		SML-811UT (A)*		CSL0901VT		CSL0901UT		CSL0902VT		CSL0902UT		*CSL0903VT	
				SML-A12V8T		SML-A12U8T		*SML-A12UT (J)		SML-811VT (A)*		SML-811UT (A)*		CSL0901VT		CSL0901UT		CSL0902VT		CSL0902UT		*CSL0903VT	
	20125	0.8	20	SML-S13VT		SML-S13UT																	

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (cd)	I _F (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 _F (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	20	SML-P11DT (R)		SML-P12DT (R)		*SML-E12DW		SML-E12D8W		SML-D15DW		SML-D14DW (A)*		SML-D13DW (A)*		SML-D12D8W		SML-D12D1W		
					SML-H12D8T		SML-M13DT		SML-010DT		SML-011DT		SML-011DT (A)*		SML-012DT (A)*		SML-012D8T		SML-012DT		SML-Z14D4T*		
	1608	0.36	20	SML-A12D8T		*SML-A12DT (J)		SML-811DT (A)*		CSL0901DT		CSL0902DT		*CSL0903DT		SML-S13DT							
				SML-A12D8T		*SML-A12DT (J)		SML-811DT (A)*		CSL0901DT		CSL0902DT		*CSL0903DT		SML-S13DT							
				SML-A12D8T		*SML-A12DT (J)		SML-811DT (A)*		CSL0901DT		CSL0902DT		*CSL0903DT		SML-S13DT							
		0.55	20	SML-A12D8T		*SML-A12DT (J)		SML-811DT (A)*		CSL0901DT		CSL0902DT		*CSL0903DT		SML-S13DT							
				SML-A12D8T		*SML-A12DT (J)		SML-811DT (A)*		CSL0901DT		CSL0902DT		*CSL0903DT		SML-S13DT							
				SML-A12D8T		*SML-A12DT (J)		SML-811DT (A)*		CSL0901DT		CSL0902DT		*CSL0903DT		SML-S13DT							
	20125	0.8	20	SML-S13DT																			

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (cd)	I _F (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).

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

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Yellow (Y, W) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I _f (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																						
		0.55	20	2																					
Reflector	20125	0.8	20																						
	3020	1.3	20	10																					
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	20																						

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

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I _f (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 2500			
Mini-mold	1006	0.2	1																						
			20																						
	1608	0.36	20																						
		0.55	20																						
Reflector	20125	0.8	20																						
	3020	1.3	20	5																					
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 _f (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															
		0.36																
	1608	0.55	5															
		1.24																
Reflector	20125	0.8	5															
	3020	1.3		20														
PLCC2	3528	1.9	20															
Side View (mold)	16115	0.55	5															
Lens	3216	1.85	20															
	1608	1.24																

Blue (B) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I _f (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																	
		0.36																		
	1608	0.55	5																	
		1.24		1																
Reflector	1608	0.55	5																	
				20125	0.8	5														
	3020	1.3	20																	
PLCC2	3528	1.9	20																	
Side View (mold)	16115	0.55	5																	
Reverse Mount	34125	1.1	20																	
Lens	3216	1.85	20																	
	1608	1.24	5																	
			20																	

White (WB) Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (mcd)	I _f (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																			
		0.36																				
Side View (Reflector)	16115	0.55	5																			
		2812		0.8	20																	
Reverse Mount	34125	1.1	5																			
		1608		0.55	5																	
Reflector	20125	0.55	20																			
		0.8		5																		
	3020	1.3	20																			
				3528	1.9	20																

Package Structure	Package Size (mm)	Height (mm)	Luminous Intensity (cd)	I _f (mA)	2.2 to 2.8	2.8 to 3.3	3.3 to 4.0	4.0 to 4.8	4.8 to 5.8	5.8 to 7.0	7.0 to 8.5	8.5 to 10.2	10.2 to 12.3	12.3 to 14.8	14.8 to 19	19 to 21.8	21.8 to 24.5	24.5 to 27.2	27.2 to 29.3	29.3 to 32.6	32.6 to 35.4
Reflector	4520	0.6	90																		

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

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2 Colors Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	I _F (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											
				Yellow Green											
				Red											
	1315	0.6	5	Red											
				Blue											
				Red											
			20	Yellow Green											
				Red											
				Yellow Green											
				Orange											
				Yellow Green											
				Yellow Green											
1608	0.55	5	Yellow Green												
			Red												
			Yellow Green												
		20	Red												
			Yellow Green												
			Yellow												
Reflector	3025	1.3	20	Yellow Green											
				Red											
				Orange											
				Yellow Green											
				Red											
				Yellow Green											
Reverse Mount	34125	1.1	20	Yellow Green											
				Red											
				Yellow Green											

3 Colors Quick Reference of Brightness

Package Structure	Package Size (mm)	Height (mm)	I _F (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															
				Green															
				Blue															
	1510	0.2	5	Red															
				Green															
				Blue															
Reflector	1816	0.5	20	Red															
				Green															
				Blue															
	3528	0.6	20	Red															
				Green															
				Blue															
			20	Red															
				Green															
				Blue															
				Red															
				Green															
				Blue															
Side View (Reflector)	2910	1.35	20	Red															
				Green															
				Blue															
	6922	2.15	20	Red															
				Green															
				Blue															

*1 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

(PICOLED™ Mold type 0402 (1006M))																			
Package (mm)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)					Electrical and Optical Characteristics (T _a =25°C)											Automotive Grade AEC-Q101/AEC-Q102
			Power Dissipation P ₀ (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FM} (mA)	Reverse Voltage V _R (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V _F (V)	I _F (mA)	Max I _r (μA)	V _R (V)	Dominant Wavelength λ _D /Chromaticity Coordinates (x, y)		Luminous Intensity I _v				
							Typ (V)				Typ* (nm)	I _r (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I _F (mA)			
	Red	SML-P11VT (R) SML-P11UT (R)	50	20	100 ^{*2}	5	-40 to +85	-40 to +100	1.8	1	10	5	626	1	2	4	6	1	—
	Orange	SML-P11DT (R)	52	20	100 ^{*2}	5	-40 to +85	-40 to +100	1.9	1	10	5	605	1	4	7	16	1	—
	Yellow	SML-P11YT (R)	52	20	100 ^{*2}	5	-40 to +85	-40 to +100	1.9	1	10	5	586	1	4	8	16	1	—
	Yellow Green	SML-P11MT (R)	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	1.9	1	10	5	569	1	1	2	4	1	—
	Red	SML-P12VT (R) SML-P12UT (R) SML-P12U2T (R)	50 52	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.0 2.1	20	10	5	630 620 615	20	25 40 60	80 160	20	20	—
Orange	SML-P12DT (R)	52	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.1	20	10	5	605	20	63	100	250	20	—	
Yellow	SML-P12Y3T (R) SML-P12YT (R) SML-P12WT (R) SML-P12Y2T (R)	52	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.1	20	10	5	596 590 585 580	20	40 25 16	90 100 160	250 20	20	—	
Yellow Green	SML-P12M2T (R) SML-P12MT (R)	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	576 572	20	10	25	63	20	—	
Green	SML-P13FT (R) SML-P13PT (R) SMLP13EC8T	52	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.1	20	10	5	566 560 527	20	6 4	18 10	40 16	20	—	
Blue	SMLP13BC8T	33	10	50 ^{*2}	5	-40 to +85	-40 to +100	2.9	5	100	5	470	5	56	110	220	5	—	
White	SMLP14WBCN1W	33	10	50 ^{*2}	5	-40 to +85	-40 to +100	2.9	5	100	5	(x, y) (0.30, 0.30)	5	90	180	360	5	—	

(Mold type 0603 (1608M))																			
Package (mm)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)					Electrical and Optical Characteristics (T _a =25°C)											Automotive Grade AEC-Q101/AEC-Q102
			Power Dissipation P ₀ (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FM} (mA)	Reverse Voltage V _R (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V _F (V)	I _F (mA)	Max I _r (μA)	V _R (V)	Dominant Wavelength λ _D /Chromaticity Coordinates (x, y)		Luminous Intensity I _v				
							Typ (V)				Typ* (nm)	I _r (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I _F (mA)			
	Red	SML-E12UW	62	25	60 ^{*1}	5	-30 to +85	-40 to +85	2.0	20	10	5	624	20	36	85	280	20	—
	Orange	SML-E12DW	62	25	60 ^{*1}	5	-30 to +85	-40 to +85	2.0	20	10	5	607	20	56	150	450	20	—
	Red	SML-E12V8W SML-E12U8W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	630 620	20	16 25	40 63	100 160	20	—
	Orange	SML-E12D8W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	40	100	250	20	—
	Yellow	SML-E12Y8W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	25	63	160	20	—
	Yellow Green	SML-E12M8W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	25	63	20	—
	Green	SML-E12P8W SML-E13EC8T	54 68	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2 3.0	20	10	5	560 527	20	3	6	16	20	—
	Blue	SML-EN3BC8T	66	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.9	5	10	5	470	5	14	40	90	5	—
	White	SML-EN3WBC8W	33	10	50 ^{*2}	5	-40 to +85	-40 to +100	2.9	5	10	5	(x, y) (0.30, 0.30)	5	56	120	220	5	—
	Yellow	SML-D11YW SML-D12W8W (A)	67 52	25	100 ^{*2}	5 12	-40 to +85 -40 to +100	-40 to +100	1.9 2.0	2	10	5 12	588	2	2 5	4 7	6 9	2	— YES
Red	SML-D12V1W SML-D12U1W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	630 620	20	25 40	40 63	100 160	20	—	
Orange	SML-D12D1W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	63	100	160	20	—	
Yellow	SML-D12Y1W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	63	100	160	20	—	
Yellow Green	SML-D12M1W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	16	30	63	20	—	
Red	SML-D12L8W SML-D12V8W SML-D12U8W	50 54	20	100 ^{*5} 100 ^{*2}	5	-40 to +85	-40 to +100	2.0 2.2	20	10	5	635 630 620	20	10 16 16	16 40 25	40 100 63	160 20	— YES YES	
Orange	SML-D12D8W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	40	100	250	20	YES	
Yellow	SML-D12Y8W SML-D12Y3W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	590 581	20	25 16	63 40	160 100	20	—	
Yellow Green	SML-D12M8W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	25	63	20	YES	
Green	SML-D12P8W SML-D12FW SMLD12EN1W	67 54 70	25 20	100 ^{*2}	5	-40 to +85 -40 to +100	-40 to +100	2.2 3.0	20 5	10 5	5	565 560 527	20	14 3	18 6	28 16	20	— YES YES	
Blue Green	SMLD12E2N1W SMLD12E3N1W	66	20	100 ^{*2}	5	-40 to +100	-40 to +100	2.9	5	10	5	505 496	5	56	120 85	140	5	YES YES	
Blue	SMLD12BN1W	66	20	100 ^{*2}	5	-40 to +100	-40 to +100	2.9	5	10	5	470	5	14	40	56	5	YES	
White	SMLD12WBN1W	66	20	100 ^{*2}	5	-40 to +100	-40 to +100	2.9	5	10	5	(x, y) (0.295, 0.280)	5	56	120	220	5	YES	
Red	SML-D13VW (A) SML-D13UW (A)	72	30	100 ^{*2}	5	-40 to +100	-40 to +100	2.0	20	10	5	630 620	20	36 56	55 85	90 140	20	— YES	
Orange	SML-D13DW (A)	72	30	100 ^{*2}	5	-40 to +100	-40 to +100	2.0	20	10	5	605	20	71	120	180	20	YES	
Yellow	SML-D13WV (A)	75	30	100 ^{*2}	5	-40 to +100	-40 to +100	2.1	20	10	5	587	20	71	110	180	20	YES	
Yellow Green	SML-D13MW (A)	75	30	100 ^{*2}	5	-40 to +100	-40 to +100	2.1	20	10	5	571	20	28	45	71	20	YES	
Red	SML-D13U8W	52	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.1	20	10	5	620	20	40	70	160	20	—	
Yellow	SML-D13Y8W SML-D13Y2W	54 78	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2 2.1	20	10	5	590 581	20	63 40	100 80	160	20	—	
Yellow Green	SML-D13M8W	54	20	100 ^{*2}	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	16	30	63	20	—	
Green	SML-D13FW	81	30	100 ^{*2}	5	-40 to +85	-40 to +100	2.1	20	10	5	565	20	18	22	36	20	YES	
Red	SML-D14VW (A) SML-D14U2W (A)	72 75	30	100 ^{*2}	5	-40 to +100	-40 to +100	2.0	20	10	5	630 615	20	71 90	100 160	180 224	20	— YES	
Orange	SML-D14DW (A)	75	30	100 ^{*2}	5	-40 to +100	-40 to +100	2.0	20	10	5	605	20	112	200	280	20	YES	
Yellow	SML-D14YW (A) SML-D14WW (A)	75	30	100 ^{*2}	5	-40 to +100	-40 to +100	2.1	20	10	5	590 587	20	112 180	200 280	280	20	— YES	
Yellow Green	SML-D14MW (A)	75	30	100 ^{*2}	5	-40 to +100	-40 to +100	2.1	20	10	5	571	20	36	60	90	20	YES	
Red	SML-D15VW SML-D15UW SML-D15U2W	84	35	100 ^{*2}	5	-40 to +100	-40 to +100	2.0	20	10	5	630 620 615	20	71 90 112	90 112	112	140 180	20	— YES YES
Orange	SML-D15DW	84	35	100 ^{*2}	5	-40 to +100	-40 to +100	2.0	20	10	5	605	20	180	224	280	20	YES	
Yellow	SML-D15YW	87	35	100 ^{*2}	5	-40 to +100	-40 to +100	2.1	20	10	5	590	20	180	224	280	20	YES	
Yellow Green	SML-D15MW	87	35	100 ^{*2}	5	-40 to +100	-40 to +100	2.1	20	10	5	571	20	56	71	90	20	YES	

*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
 * Brightness for white color is noted with chromaticity coordinate (x, y).
 Note: PICOLED™ is a trademark or a registered trademark of ROHM Co., Ltd. (): Reference

SMD LEDs

Reflector type PLCC (3528M)																								
Package (mm)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)					Electrical and Optical Characteristics (T _a =25°C)							Automotive Grade AEC-Q101/ AEC-Q102									
			Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FP} (mA)	Reverse Voltage V _R (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V _F		Reverse Current I _R (µA)	V _R (V)	Dominant Wavelength λ _D / Chromaticity Coordinates (x, y)			Luminous Intensity I _v								
									Typ (V)	I _F (mA)			Typ* (nm)	I _F (mA)		Min (mcd)	Typ (mcd)	Max (mcd)	I _F (mA)					
	Red	SML-Z14V4T	189	70	200*2	12	-40 to 100	-40 to 100	2	50	10	12	630	50	140	280	560	50	—					
		SML-Z14VT (A)	168						20	56				112	180	20	YES							
		SML-Z14U4T	189						2	50				50	280	560	1,120	50	—					
		SML-Z14UT (A)	168						1.9	20				20	224	355	20	YES						
	Orange	SML-Z14D4T	189	70	200*2	12	-40 to 100	-40 to 100	2	50	10	12	605	50	355	710	1,400	50	—					
		SML-Z14DT (A)	168						1.9	20				20	280	450	20	YES						
	Yellow	SML-Z14Y4T	189	70	200*2	12	-40 to 100	-40 to 100	2.1	50	10	12	590	50	355	710	1,400	50	—					
		SML-Z14YT (A)	175						2	20				20	280	450	20	YES						
	Yellow Green	SML-Z14M4T	189	70	200*2	12	-40 to 100	-40 to 100	2.1	50	10	12	572	50	112	224	450	50	—					
		SML-Z14MT (A)	175						2	20				20	90	140	20	YES						
	Green	SML-Z14F4T	189	70	200*2	12	-40 to 100	-40 to 100	2.1	50	10	12	565	50	56	120	180	50	—					
		SML-Z14FT (A)	175						2	20				20	45	71	20	YES						
		SML-Z14P4T	189						2.1	50				10	12	561	50	22	56	90	50	—		
		SML-Z14PT (A)	175						2	20				20	36	20	YES							
		SMLZ14EGT (A)	120						30	100*2				5	—	—	5	528	20	11	22	36	20	YES
		SMLZ14EGT (A)	120						30	100*2				5	—	—	5	528	20	11	22	36	20	YES
Blue	SMLZ14BGT (A)	114	30	100*2	5	-40 to 100	-40 to 100	3.3	20	—	—	470	20	140	1,800	1,800	450	20	YES					
	SMLZ14BGT (A)	114	30	100*2	5	-40 to 100	-40 to 100	3.3	20	—	—	470	20	140	1,800	1,800	450	20	YES					
White	SMLZ14WBGUW (A)	114	30	100*2	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	YES						
Blue Green	SMLZ24E2N3T (C)	152	40	100*2	—	-40 to 100	-40 to 100	3.2	20	—	—	505	20	900	1,140	1,800	20	YES						
Blue	SMLZ24B3N3T (C)	114	30	100*2	0.9	-40 to 100	-40 to 100	3.3	20	—	—	470	20	220	300	450	20	YES						
Red	☆SML-Y18U2T (C)	600	(200)	1,000*2	12	-40 to 100	-40 to 100	—	140	10	12	618	140	(4,500)	—	(9,000)	140	(YES)						

Reflector type (4520M)																						
Package (mm)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)					Electrical and Optical Characteristics (T _a =25°C)							Automotive Grade AEC-Q101/ AEC-Q102							
			Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FP} (mA)	Reverse Voltage V _R (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V _F		Reverse Current I _R (µA)	V _R (V)	Chromaticity Coordinates*			Luminous Intensity I _v						
									Typ (V)	I _F (mA)			(x, y)	I _F (mA)		Min (mcd)	Typ (mcd)	Max (mcd)	I _F (mA)	Typ (lm)	I _F (mA)	
	White	SMLK18WBJWCW	675	150	230*5	5	-40 to +100	-40 to +100	3.9	90	10	5	(0.30, 0.28)	90	4,800	6,000	8,500	90	21	—		
		SMLK18WBJDW																	(0.34, 0.34)	22	90	—
		SMLK28WBJWCW																	(0.30, 0.28)	21	—	—

Side View type																			
Package (mm)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)					Electrical and Optical Characteristics (T _a =25°C)							Automotive Grade AEC-Q101/ AEC-Q102				
			Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FP} (mA)	Reverse Voltage V _R (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V _F		Reverse Current I _R (µA)	V _R (V)	Dominant Wavelength λ _D / Chromaticity Coordinates (x, y)			Luminous Intensity I _v			
									Typ (V)	I _F (mA)			Typ* (nm)	I _F (mA)		Min (mcd)	Typ (mcd)	Max (mcd)	I _F (mA)
	Red	SML-A12V8T	54	20	100*2	5	-40 to +85	-40 to +100	2.2	20	10	5	630	16	40	100	20	—	
		SML-A12U8T												25	63	160	20	—	
	Orange	SML-A12D8T	54	20	100*2	5	-40 to +85	-40 to +100	2.2	20	10	5	605	20	40	100	250	20	—
		SML-A12Y8T	54	20	100*2	5	-40 to +85	-40 to +100	2.2	20	10	5	590	20	25	63	160	20	—
	Yellow Green	SML-A12M8T	54	20	100*2	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	25	63	20	—
		SML-A12P8T	54	20	100*2	5	-40 to +85	-40 to +100	2.2	20	10	5	560	20	3	6	16	20	—
	Green	SML-A12J (J)	75	30	100*2	5	-40 to +85	-40 to +100	2.0	20	10	5	624	20	36	100	280	20	—
		SML-A12T (J)	75	30	100*2	5	-40 to +85	-40 to +100	2.0	20	10	5	606	20	36	100	280	20	—
	Yellow	SML-A12WT (J)	75	30	100*2	5	-40 to +85	-40 to +100	2.0	20	10	5	590	20	36	63	180	20	—
		SML-A12MT (J)	65	25	100*2	5	-30 to +85	-40 to +85	2.1	20	100	5	570	20	14	40	110	20	—
	Yellow	SML-A15YT	87	35	100*2	5	-40 to +100	-40 to +100	2.1	20	10	5	590	20	180	—	280	20	—
		SMLA12EC6T	68	20	100*2	5	-40 to +85	-40 to +100	3.0	5	100	5	527	5	22	56	140	5	—
Blue	SMLA13BC8T	66	20	100*2	5	-40 to +85	-40 to +100	2.9	5	10	5	470	5	22	36	56	5	—	
	SMLA12WBC7W	33	10	50*2	5	-40 to +85	-40 to +100	2.9	5	10	5	(x, y) (0.30, 0.30)	5	22	56	140	5	—	

Reverse Mount Available type																			
Package (mm)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)					Electrical and Optical Characteristics (T _a =25°C)							Automotive Grade AEC-Q101/ AEC-Q102				
			Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FP} (mA)	Reverse Voltage V _R (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V _F		Reverse Current I _R (µA)	V _R (V)	Dominant Wavelength λ _D / Chromaticity Coordinates (x, y)			Luminous Intensity I _v			
									Typ (V)	I _F (mA)			Typ* (nm)	I _F (mA)		Min (mcd)	Typ (mcd)	Max (mcd)	I _F (mA)
	Red	SML-811VT (A)	62	25	100*2	5	-40 to +85	-40 to +100	2.0	10	100	5	630	10	11	22	45	10	—
		SML-811UT (A)																	620
	Orange	SML-811DT (A)	62	25	100*2	5	-40 to +85	-40 to +100	2.0	10	100	5	605	10	11	22	45	10	YES
Yellow	SML-811WT (A)	62	25	100*2	5	-40 to +85	-40 to +100	2.0	10	100	5	590	10	14	28	56	10	YES	
	SML-812MT	65	25	60*1	4	-30 to +85	-40 to +85	2.1	20	100	4	571	20	14	40	110	20	—	
Blue	SML812BCT	80	20	100*2	5	-30 to +85	-40 to +85	3.3	20	100	5	470	20	22	56	140	20	—	
	SML813WBC8W	33	10	50*2	5	-40 to +85	-40 to +100	2.9	5	10	5	(x, y) (0.30, 0.30)	5	22	45	90	5	—	
	Yellow Green	SML-822MV8W	54	20	100*2	5	-40 to +85	-40 to +100	2.2	20	100	5	572	20	16	25	40	20	—
		SML-825MVW	80	30	100*2	5	-40 to +85	-40 to +100	2.1	20	100	5	572	20	40	63	100	20	—
	Red	SML-825MVW	80	30	100*2	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)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)						Electrical and Optical Characteristics (T _a =25°C)											Automotive Grade AEC-Q101/ AEC-Q102											
			Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FM} (mA)	Reverse Voltage V _R (V)	Operating Temperature T _{opr} (°C)	Storage Temperature T _{stg} (°C)	Forward Voltage V _F		Reverse Current I _R		Dominant Wavelength λ _D		Luminous Intensity I _v																
									Typ (V)	I _F (mA)	Max (μA)	V _R (V)	Typ (nm)	I _F (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I _F (mA)													
	Red	CSL0901VT	62.5	25	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	630	20	112	180	355	20	YES												
		CSL0901UT											620		140	280	450	20	YES												
	Orange	CSL0901DT	62.5	25	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	605	20	224	400	710	20	YES												
		CSL0901YT											590		320	560	20	YES													
	Yellow	CSL0901WT	62.5	25	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	587	20	180	280	560	20	YES												
		CSL0901MT											571		20	56	100	180	20	YES											
	Yellow Green	CSL0901PT	62.5	25	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	560	20	14	30	45	20	YES												
		CSL0901ET											70		20	220	360	560	5	YES											
	Green	CSL0901BT	68	20	100 ^{±2}	5	-40 to +100	-40 to +100	2.9	5	10	5	470	5	36	56	90	5	YES												
		CSL0902VT											87		35	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	630	20	140	250	450	20	YES	
	Blue	CSL0902UT	87	35	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12		620										20		180	350	560	20	YES	
		CSL0902DT											87	35	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	605		20	355	560	1,120	20	YES	
	Orange	CSL0902YT	87	35	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	590	20	280	500	900	20	YES												
		CSL0902WT											587		224	400	710	20	YES												
	Yellow	CSL0902MT	87	35	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	571	20	90	150	280	20	YES												
		CSL0902PT											87		35	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	560	20	28	45	90	20	YES	
	Yellow Green	CSL0902ET	95	25	100 ^{±2}	5	-40 to +100	-40 to +100	3.4	20	10	5	527	20	710	1,100	1,800	20	YES												
		CSL0902BT											95		25	100 ^{±2}	5	-40 to +100	-40 to +100	3.3	20	10	5	470	20	220	360	560	20	YES	
	Blue	CSL0903VT	87	35	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	(630)	20	(355)	(700)	(900)	20	(YES)												
		CSL0903UT											(620)		(560)	(1,000)	(1,400)	20	(YES)												
Red	CSL0903DT	87	35	100 ^{±2}	12	-40 to +100	-40 to +100	2.1	20	10	12	(605)	20	(710)	(1,200)	(1,800)	20	(YES)													
	CSL0903YT											(590)		(560)	(800)	(1,400)	20	(YES)													
Orange	Yellow	SML-S13VT	75	30	100 ^{±2}	5	-40 to +85	-40 to +100	1.9	20	10	5	630	20	160	450	630	20	—												
													SML-S13UT		400	700	1,600	20	—												
													SML-S13DT		75	30	100 ^{±2}	5	-40 to +85	-40 to +100	1.9	20	10	5	605	20	630	1,400	2,500	20	—
													SML-S13YT		78	30	100 ^{±2}	5	-40 to +85	-40 to +100	2.0	20	10	5	590	20	630	1,400	2,500	20	—
													SML-S13MT		78	30	100 ^{±2}	5	-40 to +85	-40 to +100	2.0	20	10	5	572	20	160	400	630	20	—
													SML-S13PT		78	30	100 ^{±2}	5	-40 to +85	-40 to +100	2.0	20	10	5	560	20	63	160	400	20	—
Green	SML-S14EET	117	30	100 ^{±2}	5	-40 to +85	-40 to +100	3.3	20	10	5	527	20	1,800	3,000	4,500	20	—													
	SML-S14BET	117	30	100 ^{±2}	5	-40 to +85	-40 to +100	3.2	20	10	5	470	20	450	800	1,400	20	—													
2.9x2.4 (t=3.1)	Red	CSL0701UT	120	50	150 ^{±2}	5	-40 to +85	-40 to +100	2.1	20	10	5	624	20	9,000	18,000	25,000	20	—												
	Orange	CSL0701DT	120	50	150 ^{±2}	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)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)						Electrical and Optical Characteristics (T _a =25°C)											Automotive Grade AEC-Q101/ AEC-Q102					
			Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FM} (mA)	Reverse Voltage V _R (V)	Operating Temperature T _{opr} (°C)	Storage Temperature T _{stg} (°C)	Forward Voltage V _F		Reverse Current I _R		Dominant Wavelength λ _D		Luminous Intensity I _v										
									Typ (V)	I _F (mA)	Max (μA)	V _R (V)	Typ (nm)	I _F (mA)	Min (mcd)	Typ (mcd)	Max (mcd)	I _F (mA)							
PICOLED™ Duo 1.0x1.0 (t=0.2)	Yellow Green	SML-P24MUW (R)	54	20	100 ^{±2}	5	-40 to +85	-40 to +100	2.2	20	10	5	572	20	10	21	40	20	—						
	Red												52		20	100 ^{±2}	5	-40 to +85	-40 to +100	2.1	20	10	5	620	20
1.6x0.8 (t=0.55)	Yellow Green	SML-D22MUW	67	25	100 ^{±2}	5	-40 to +105	-40 to +110	2.0	5	10	5	570	5	6	10	16	5	—						
	Red	SML-D22YVW	65	25	100 ^{±2}	5	-40 to +105	-40 to +110	1.9	5	10	5	620	5	10	16	25	5	—						
	Yellow		67	25	100 ^{±2}	5	-40 to +105	-40 to +110	2.0	5	10	5	588	5	16	25	40	5	—						
	Red	65	25	100 ^{±2}	5	-40 to +105	-40 to +110	1.9	5	10	5	629	5	10	16	25	5	—							
1.3x1.5 (t=0.6)	Blue	SML522BU1W	66	20	60 ^{±2}	5	-40 to +85	-40 to +100	2.9	5	10	5	470	5	9	22	36	5	—						
	Red	SML-522MUW	50	20	60 ^{±2}	5	-40 to +85	-40 to +100	1.9	5	10	5	624	5	10	21	40	5	—						
	Yellow Green		52	20	60 ^{±2}	4	-30 to +85	-40 to +85	2.1	20	100	4	570	20	14	40	71	20	—						
	Red	SML-522MUW	50	20	60 ^{±2}	4	-30 to +85	-40 to +85	1.9	20	100	4	630	20	22	63	110	20	—						
	Yellow Green	SML-522MU8W	54	20	100 ^{±2}	4	-40 to +85	-40 to +100	2.2	20	100	4	572	20	16	40	63	20	—						
	Red		54	20	100 ^{±2}	4	-40 to +85	-40 to +100	2.2	20	100	4	620	20	25	63	100	20	—						
	Yellow Green	SML-522MD8W	54	20	100 ^{±2}	4	-40 to +85	-40 to +100	2.2	20	100	4	572	20	10	25	40	20	—						
	Orange	SML-522MY8W	54	20	100 ^{±2}	4	-40 to +85	-40 to +100	2.2	20	100	4	605	20	40	100	160	20	—						
Yellow Green	54		20	100 ^{±2}	4	-40 to +85	-40 to +100	2.2	20	100	4	572	20	16	40	63	20	—							
Yellow	54	20	100 ^{±2}	4	-40 to +85	-40 to +100	2.2	20	100	4	590	20	40	63	160	20	—								
3.0x2.5 (t=1.3)	Yellow Green	SML-020MDT	60	25	60 ^{±1}	4	-30 to +85	-40 to +85	2.2	20	100	4	570 ^{±10}	20	9	20	45	20	—						
	Orange	SML-020MVT	60	25	60 ^{±1}	4	-30 to +85	-40 to +85	2	20	100	4	610 ^{±10}	20	6	10	18	20	—						
	Yellow Green		60	25	60 ^{±1}	4	-30 to +85	-40 to +85	2.2	20	100	4	570 ^{±10}	20	9	20	45	20	—						
	Red	SML-020MYT	60	25	60 ^{±1}	4	-30 to +85	-40 to +85	2	20	100	4	650 ^{±10}	20	4	6	11	20	—						
	Yellow Green	SML-020MYT	60	25	60 ^{±1}	4	-30 to +85	-40 to +85	2.2	20	100	4	570 ^{±10}	20	9	21	45	20	—						
	Yellow		60	25	60 ^{±1}	4	-30 to +85	-40 to +85	2.1	20	100	4	585 ^{±10}	20	6	10	18	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
 *6 Total power dissipation in case of lighting three colors. (when lighting three colors, it will be reduced down to 30% of it.) (YES): Planning (): Reference ☆: Under Development
 *7 50mmx50mm, Substrate: FR4; t=1.6mm Cu foil: t=0.07mm
 *8 Epoxy resin *9 Silicon resin *10 Peak wavelength

SMD LEDs

〈3 Colors type〉																				
Package (mm)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)							Electrical and Optical Characteristics (T _a =25°C)										Automotive Grade AEC-Q101/AEC-Q102
			Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FP} (mA)	Reverse Voltage V _R (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V _F (V)	I _F (mA)	Max (μA)	V _R (V)	Dominant Wavelength λ _D (nm)		Luminous Intensity I _v (mcd)					
	Red	MSL0104RGBU*9	400 ⁺⁶ ₋₇	50	100	5	-40 to +85	-40 to +100	2.1	20	10	5	624	20	450	700	1,100	20	YES	
	Green		400 ⁺⁶ ₋₇	40	100	—	-40 to +85	-40 to +100	3.3	20	—	—	527	20	710	1,200	1,800	20		
	Blue		400 ⁺⁶ ₋₇	40	100	—	-40 to +85	-40 to +100	3.2	20	—	—	470	20	220	400	560	20		
	Red	MSL0104RGBW*8	400 ⁺⁶ ₋₇	50	100	5	-40 to +85	-40 to +100	2.1	20	10	5	624	20	450	700	1,100	20		
	Green		400 ⁺⁶ ₋₇	40	100	—	-40 to +85	-40 to +100	3.3	20	—	—	527	20	710	1,200	1,800	20		
	Blue		400 ⁺⁶ ₋₇	40	100	—	-40 to +85	-40 to +100	3.2	20	—	—	470	20	220	400	560	20		
	Red	MSL0601RGBU	300 ⁺⁶ ₋₇	40	100	5	-40 to +85	-40 to +100	2.1	20	10	5	624	20	600	700	830	20	—	
	Green		300 ⁺⁶ ₋₇	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 ⁺⁶ ₋₇	30	100	5	-40 to +85	-40 to +100	3.2	20	10	5	470	20	290	360	500	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
 *6 Total power dissipation in case of lighting three colors. (when lighting three colors, it will be reduced down to 30% of it.)
 *7 50mmx50mm, Substrate: FR4; t=1.6mm Cu foil: t=0.07mm
 *8 Epoxy resin *9 Silicon resin *10 Peak wavelength (YES): Planning (): Reference

〈Surface Mount type Infrared LEDs〉																				
Package (mm)	Part No.	LED Chip	Emitting Color	Absolute Maximum Rating (T _a =25°C)							Electrical and Optical Characteristics (T _a =25°C)									
				Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FP} (mA)	Reverse Voltage V _R (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	Forward Voltage V _F (V)	I _F (mA)	Typ (μA)	V _R (V)	Light Wavelength λ _P (nm)		Radiant Intensity (mW/sr)				
	SML-M13RT	AlGaAs	Infrared	60	30	100 ^{*1}	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 ^{*1}	5	-40 to +85	-40 to +100	1.4	20	10	5	850	20	1.5	2.5	3.6	20	
	SML-S15R2T	AlGaAs	Infrared	100	50	300 ^{*1}	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 ^{*1}	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) ^{*1}	(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) ^{*1}	(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) ^{*1}	(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) ^{*1}	(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) ^{*1}	(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 _a =25°C)							Electrical and Optical Characteristics (T _a =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 _p Typ (nm)	Collector-Emitter Saturation Voltage					
	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 Duty1/10, 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							
SML		-	D	1	2	V		8	W	T	8	6						
[SML chip LED series]		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 01/02 3.0x2.0 t=1.3mm Z1/Y1 3.5x2.8 t=1.9mm A1 1.6x1.15 t=0.55mm 81/82 3.4x1.25 t=1.1mm S1 3.2x1.6 t=1.85mm P2 1.0x1.0 t=0.2mm 52 1.5x1.3 t=0.6mm	0 Low current type 1 High brightness type 2 High brightness type 3 4 Ultra high brightness type 5 brightness type 8	L Red V Red U Red D Orange Y3 Yellow Y Yellow W Yellow Y2 Yellow M2 Yellow green	M Yellow green F Green P Green MV Yellow green/Red MU Yellow green/Red MD Yellow green/Orange MY Yellow green/Yellow YV Yellow/Red R Infrared T Phototransistor	T Transparent colorless W Milky white B Black	T86 Cathode at sprocket hole side (the top) (in case of S1 series) T86 Cathode at sprocket hole side (the back) T68 Cathode at sprocket hole side (the top)	Refer to specification										
[SCM chip LED series]		01 3.0x1.5 t=2.2mm																

[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							
SMLE		N	3	W	B	C		8	W	1								
[SML chip LED series] [SCM chip LED series]		P1 1.0x0.6 t=0.2mm E1/EN 1.6x0.8 t=0.36mm D1 1.6x0.8 t=0.55mm MN/M2 2.0x1.25 t=0.8mm Z1/Z2/Z3 3.5x2.8 t=1.9mm A1 1.6x1.15 t=0.55mm 81 3.4x1.25 t=1.1mm S1 3.2x1.6 t=1.85mm 52 1.5x1.3 t=0.6mm P34 1.0x1.0 t=0.2mm P36 1.5x1.0 t=0.2mm VN 3.5x2.8 t=0.6mm 01 3.0x2.0 t=1.3mm K1/K2 4.5x2.0 t=0.6mm	2 High brightness type 3 Ultra high brightness type 4 6 type 8	E Green E2/E3 Blue Green B Blue PB Green SB Sapphire blue WB White BU Blue/Red RGB Red/Green/Blue	Resin color T Transparent Colorless W Milky white Resin (in case of VN6 series) U Silicone W Epoxy	T86 Cathode at sprocket hole side (the top) (in case of white, RGB) 1 Cathode at sprocket hole side (the top) 3 Cathode at sprocket hole side (the top 2mm pitch) (in case of S1 and 81 series) T86 Cathode at sprocket hole side (the back) T68 Cathode at sprocket hole side (the top) *81 series is nothing "T68".	Refer to specification											

[CSL series]

Series name		Package shape	Color		Chip control symbol	Remarks	Chromaticity rank (for white LED)	Special control symbol	Brightness rank								
CSL		0	7		0	1	D		T	5							
[CSL chip LED series]		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 U Red D Orange Y Yellow W Yellow	M Yellow green P Green E Green B Blue WB White SB Sapphire blue	T Transparent Colorless W Milky white	1 Cathode at sprocket hole side (the top) 5 Cathode at sprocket hole side (big reel)	Refer to specification									

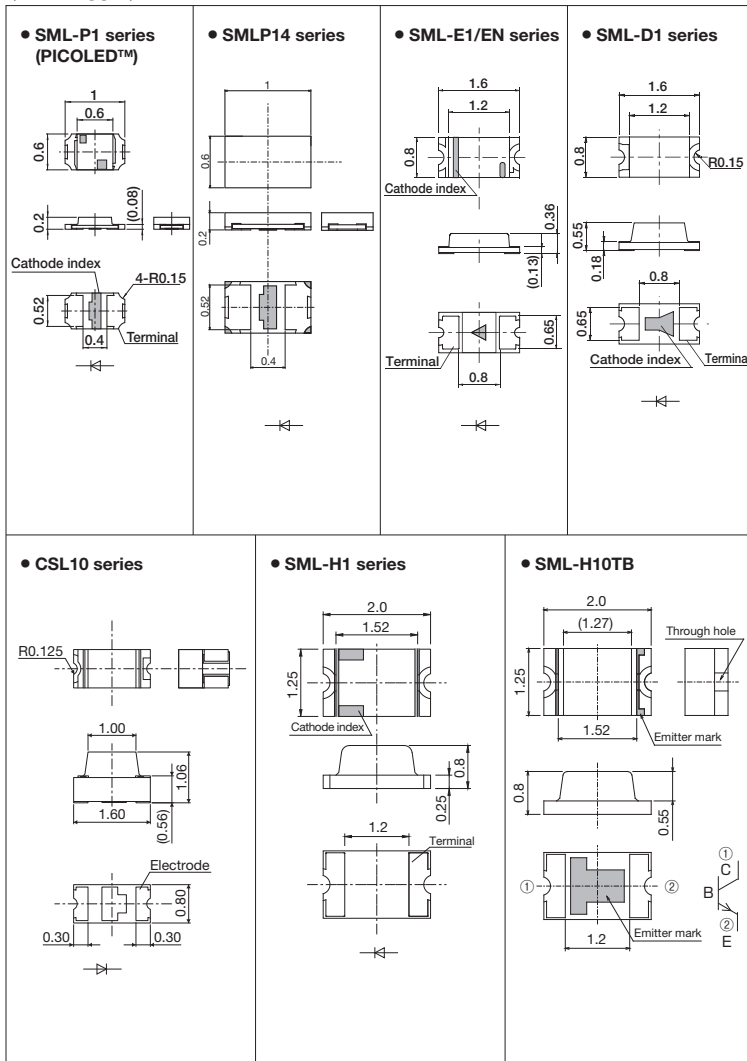
[MSL series]

Series name		Package shape	Color		Chip control symbol	Remarks	Chromaticity rank (for RGB LED)	Special control symbol	Brightness rank								
MSL		0	1		0	4	R	G	B		U	1					
[MSL Multi color series]		01 6.9x2.2 t=2.15mm 04 1.8x1.6 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)	Refer to specification									

SMD LEDs

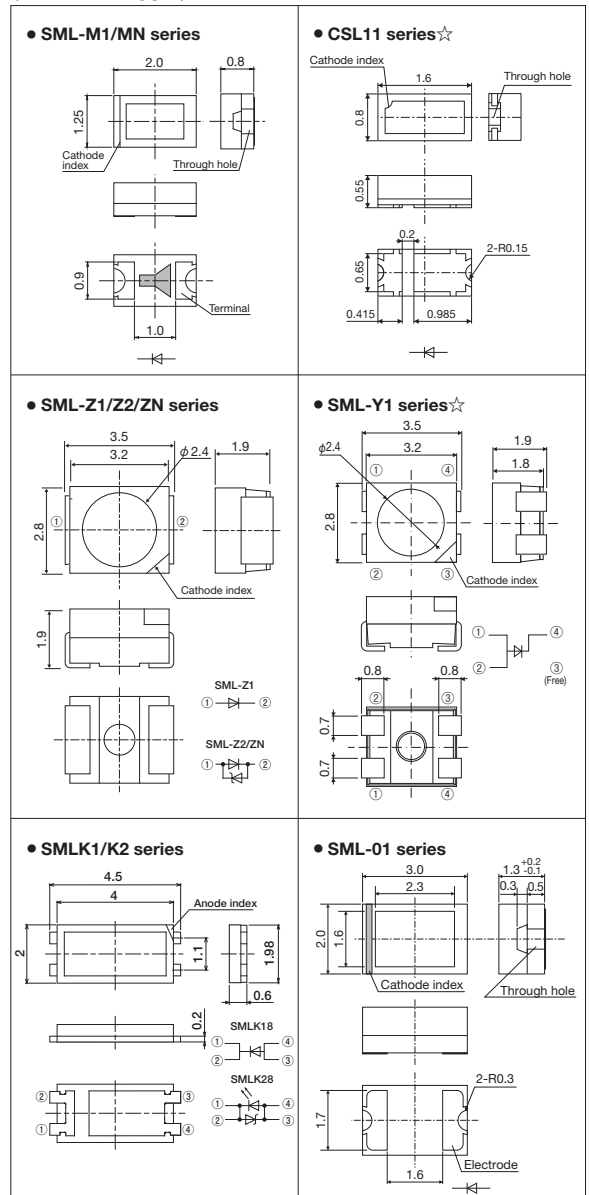
● Dimensions (Unit: mm)

◁ Mold type ▷

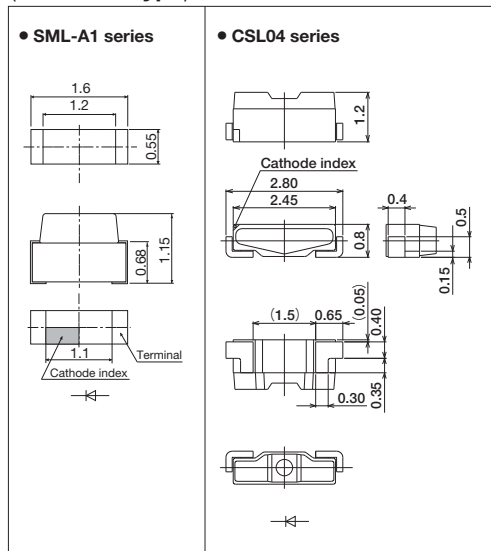


*PICOLED™ is a pending trademarks of ROHM Co., Ltd.

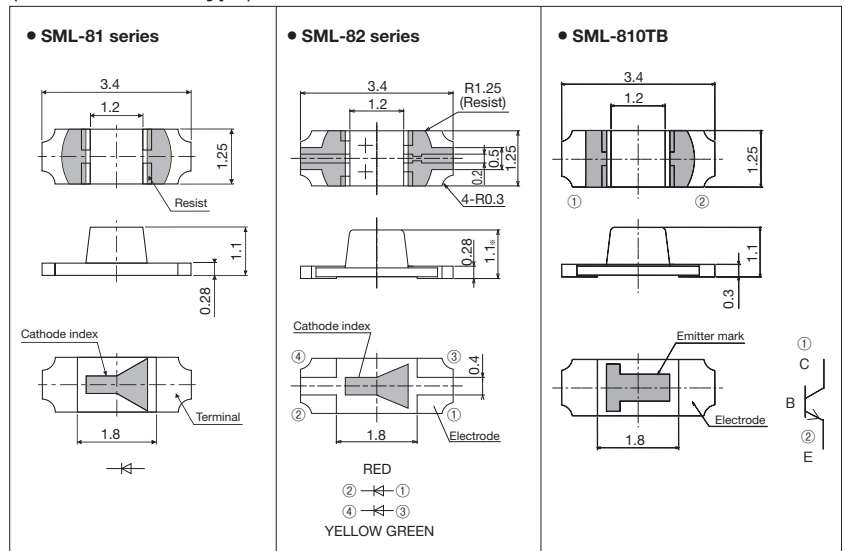
◁ Reflector type ▷



◁ Side View type ▷



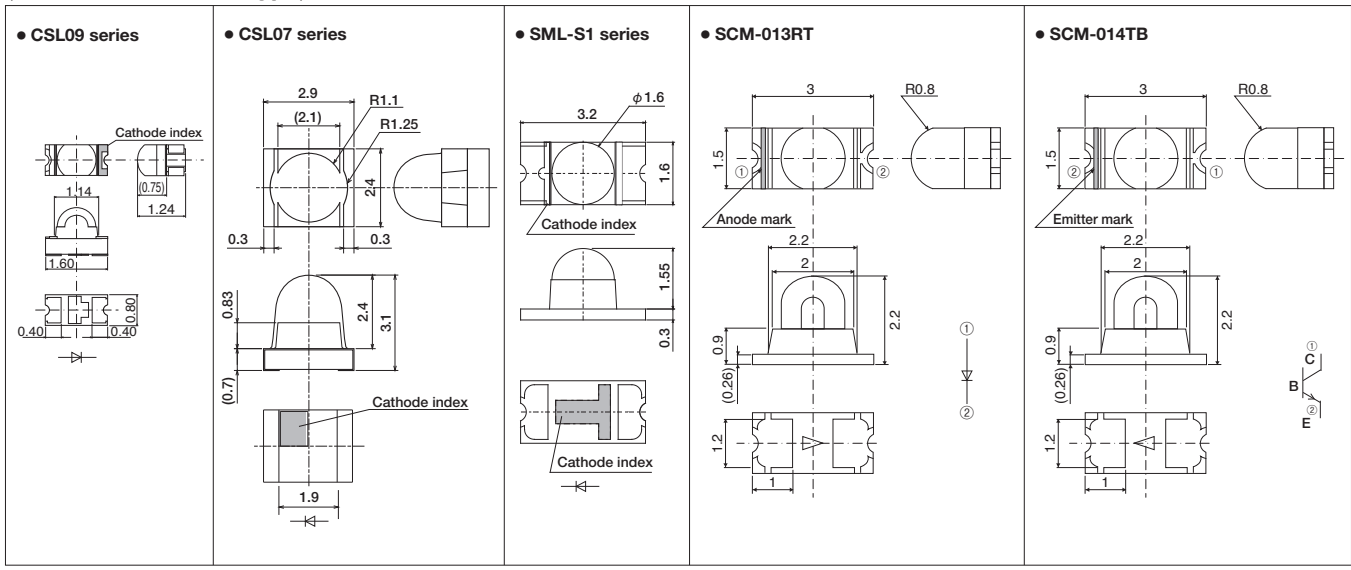
◁ Reverse Mount type ▷



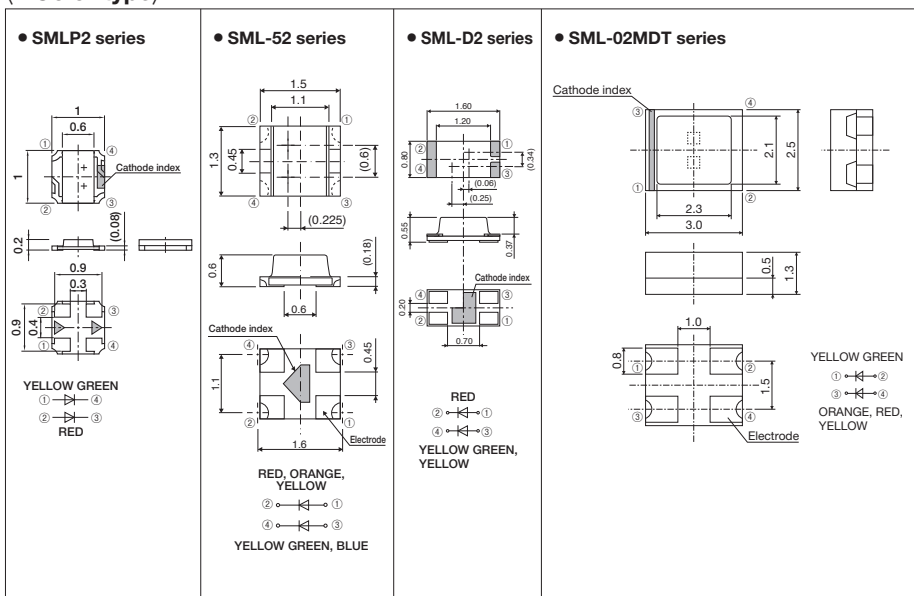
*For further information, please refer to the data sheets.

☆: Under Development

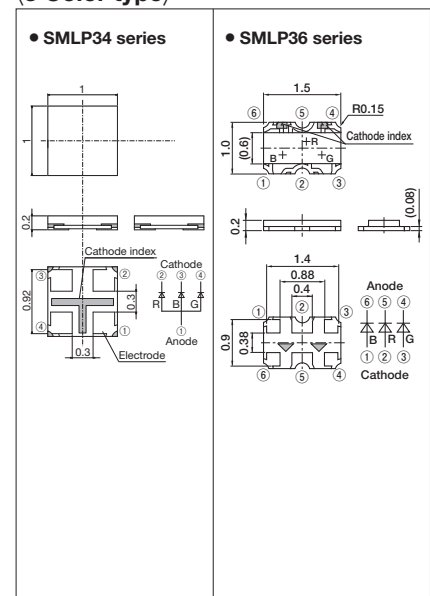
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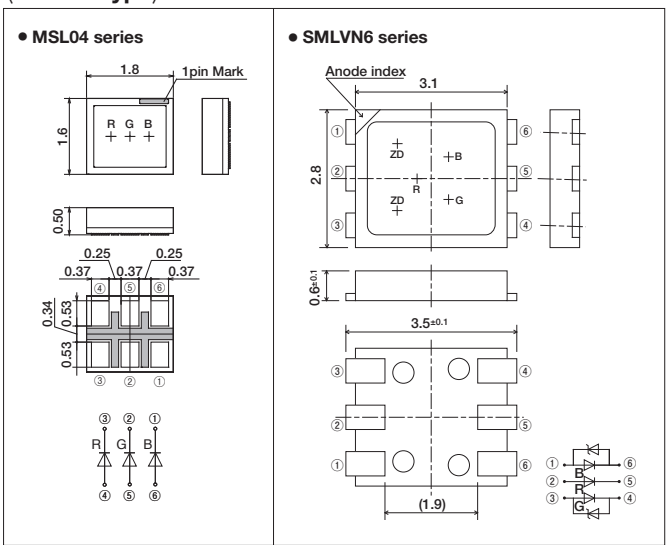
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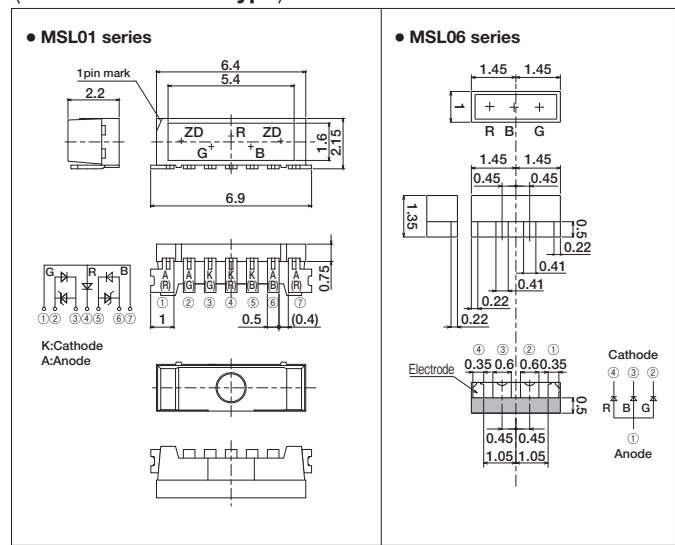
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<3 Color type>



<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																	
			10																	
		Diffused Colored	20																	
			10																	
	85°	Diffused Colored	20																	
			10																	
		Transparent Colorless	20																	
			10																	
φ3 Flat disc type	40°	Transparent Colored	10																	
	35°	Transparent Colored	10																	
	50°	Diffused Colored	10																	
φ4 Oval type	140°	Diffused Colored	20																	
	10°	Transparent Colorless	20																	
20°	10																			
φ5 Circular type	40°	Transparent Colored	20																	
			10																	
	Transparent Colorless	20																		
		10																		

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																	
			10																	
			20																	
			10																	
φ4 Oval type	140°	Milky White	20																	
			10																	
φ5 Circular type	10°	Transparent Colorless	20																	
			10																	
	40°	Transparent Colorless	20																	
			10																	

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																
			10																
φ4 Oval type	140°	Milky White	20																
			10																
φ5 Circular type	40°	Transparent Colorless	20																
			10																

*Brightness on specification sheet include tolerance of within ±10%. *1 This product refer to high brightness rank table1. *2 This product refer to high brightness rank table2.

(Oval type)																					
Shape	Package Image	Viewing Angle 2θ1/2 (Element type)	Emitting Color	Part No.	Absolute Maximum Ratings (T _a =25°C)						Electrical and Optical Characteristics (T _a =25°C)							Automotive Grade AEC-Q101/ AEC-Q102			
					Power Dissipation P ₀ (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FM} (mA)	Reverse Voltage V _R (V)	Operating Temperature T _{opr} (°C)	Storage Temperature T _{stg} (°C)	Forward Voltage V _F	Reverse Current I _R	Dominant Wavelength λ _d / Chromaticity Coordinates (x,y)		Luminous Intensity I _v						
Oval type φ4		140°	Standard	Red	SLI-430U2R	75	30	100*2	9	-40 to +85	-40 to +100	2.0	20	10	9	620*3	20	220	400 (680)	20	—
				Orange	SLI-430DU	75	30	100*2	9	-40 to +85	-40 to +100	2.1	20	10	9	605*3	20	220	470 (680)	20	—
				Yellow	SLI-430Y2U	75	30	100*2	9	-40 to +85	-40 to +100	2.1	20	10	9	590*3	20	330	500 (900)	20	—
				Yellow Green	SLI-430MG	75	30	100*2	9	-40 to +85	-40 to +100	2.1	20	10	9	570*3	20	68	120 (220)	20	—
				Blue	SLD430BD2W	120	30	100*2	5	-40 to +85	-40 to +100	3.2	20	10	5	470*3	20	330	560 (1,000)	20	—
				White	SLD430WBD2PT	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	—
(Other)																					
φ3.2 Circular type		40°	Low Current	Red	SLI-325URC (W)*1	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	630	20	36	160 (280)	20	—
				Orange	SLI-325DC (W)*1	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	611	20	36	160 (280)	20	—
				Yellow	SLI-325YC (W)*1	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	591	20	36	160 (280)	20	—
				Yellow Green	SLI-325YV (W)*1	48	20	60*1	4	-25 to +85	-30 to +100	1.9	20	100	4	570	20	36	160 (280)	20	—
				Red	SLR-325VC*1	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	650	10	6	16 (45)	10	—
				Orange	SLR-325VR*1	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	6	16 (45)	10	—
Direct Mount 5mm Pitch type		40°	Standard	Red	SLR-325DC*1	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	6	16 (45)	10	—
				Orange	SLR-325DU*1	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	6	16 (45)	10	—
				Yellow	SLR-325YC*1	60	20	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	585	10	6	16 (45)	10	—
				Yellow Green	SLR-325YV*1	60	20	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	563	10	6	16 (45)	10	—
				Red	SLR-325MC*1	75	25	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	650	10	9	25 (71)	10	—
				Orange	SLR-325MG*1	75	25	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	610	10	6	16 (45)	10	—
φ3 Flat Disc type		35°	Standard	Red	SLR-322VC	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	650	10	6	16 (45)	10	—
				Orange	SLR-322DC	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	6	16 (45)	10	—
				Yellow	SLR-322YC	60	20	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	585	10	4	10 (28)	10	—
		50°	Standard	Yellow Green	SLR-322MC	75	25	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	563	10	9	25 (71)	10	—
				Red	SLR-322VR	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	650	10	4	10 (45)	10	—
				Orange	SLR-322DU	60	20	60*1	3	-25 to +85	-30 to +100	2.0	10	10	3	610	10	2	6 (18)	10	—
Yellow	SLR-322YU	60	20	60*1	3	-25 to +85	-30 to +100	2.1	10	10	3	585	10	4	10 (28)	10	—				
Yellow Green	SLR-322MG	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	343 φ3 Circular type	V Red	R <Red>Diffused colored	3F 1-Die straight bulk	Refer to specification
SLI 1-Die Circular type Low Current High Brightness LED Lamps	332 φ3 Circular type	U Red	U <Orange>Diffused colored	T31 Refer to taping specification	
SLR 1-Die Circular type LED Lamp	56 φ5 Circular type	U2 Red	Y <Yellow>Diffused colored	T32	
	560 φ5 Circular type	D Orange	G <Yellowish green> Diffused colored		
	570 φ5 Circular type	Y Yellow	C Transparent colored		
	580 φ5 Circular type	M Yellowish green	T Transparent colorless		
	430 Oval type φ4	P Green			
	325 φ3.2 Circular type				
	322 φ3 Flat disc type				

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 [] [] [] [] []

Series name Package shape Color Resin color Packaging type Brightness rank

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

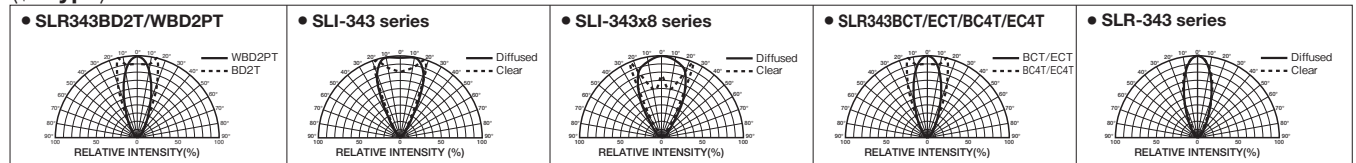
(in case of white)

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

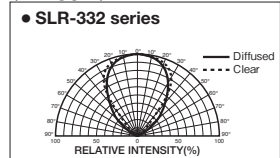
Through-hole LEDs

● Viewing Angle (Unit: deg)

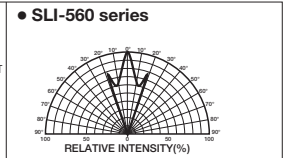
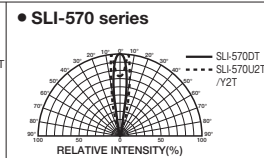
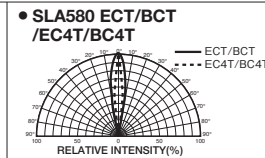
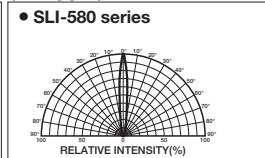
⟨Φ3 type⟩



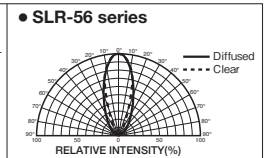
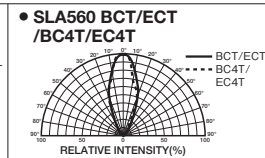
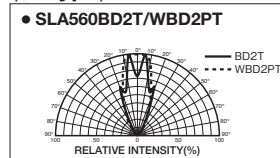
⟨Φ3 type⟩



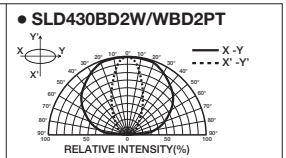
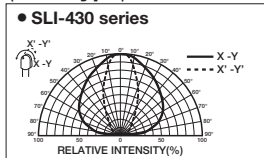
⟨Φ5 type⟩



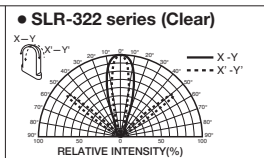
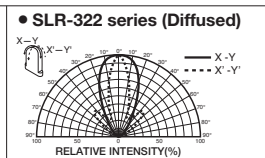
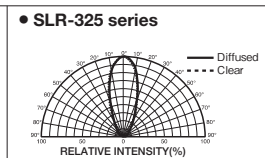
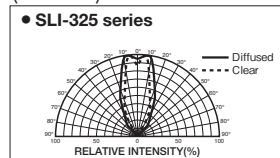
⟨Φ5 type⟩



⟨Oval type⟩



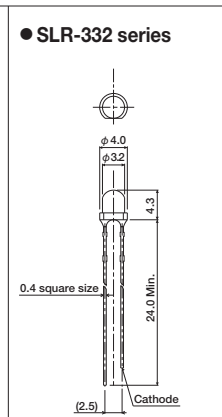
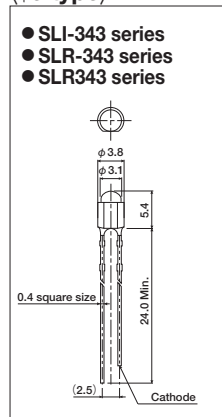
⟨Others⟩



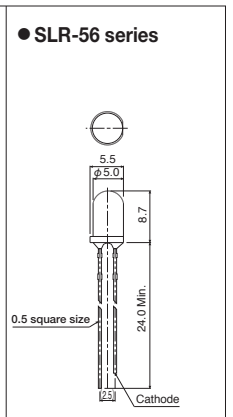
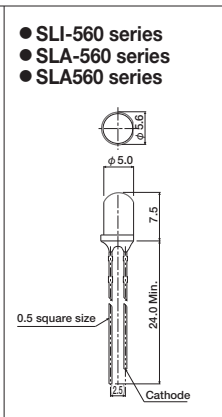
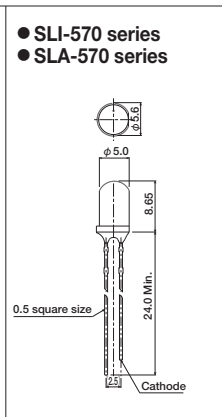
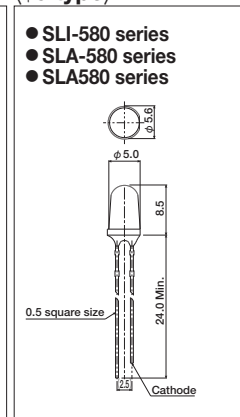
Note: Viewing Angle shown above are the reference data from standard product. For the part numbers other than the above, please contact us.

● Dimensions (Unit: mm)

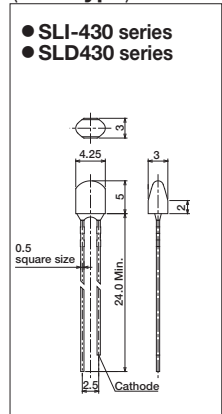
⟨Φ3 type⟩



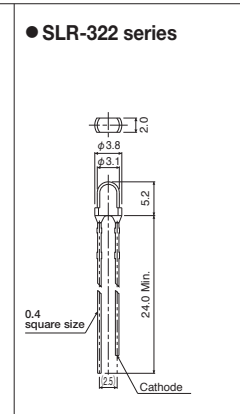
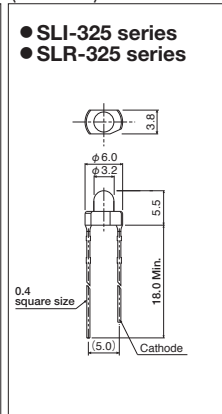
⟨Φ5 type⟩



⟨Oval type⟩



⟨Others⟩



*For further information, please refer to specification.