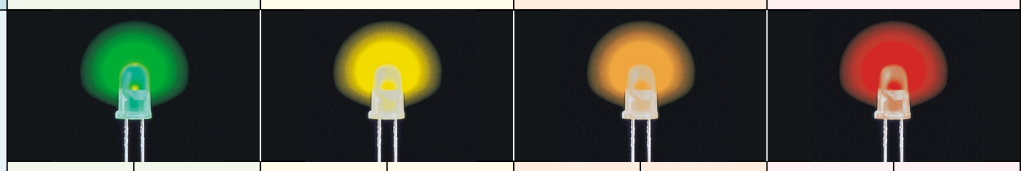
Standard Type φ5.0 Circular Type LED Lamps

SLR-56 Series

Shape	Emitting Surface Dimension (mm)	Green	Yellow	Orange	Red
		GaP		GaAsP on GaP	
		563nm	585nm	610nm	650nm
Circular Type	φ5.0				
		SLR-56MC / SLR-56MG	SLR-56YC / SLR-56YY	SLR-56DC / SLR-56DU	SLR-56VC / SLR-56VR

■ Absolute Maximum Ratings (Ta=25℃)

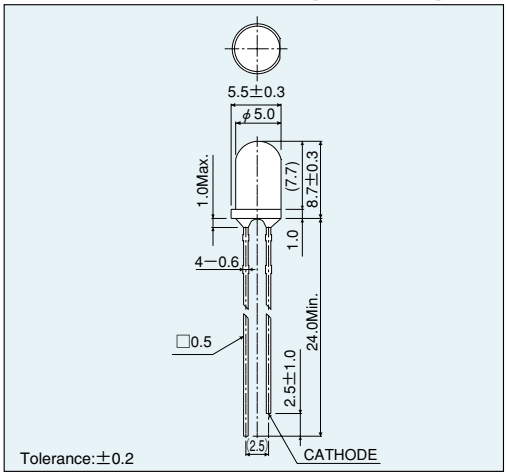
Part No.	Emitting color	Power dissipation P_D (mW)	Forward current I_F (mA)	Peak forward current I_{FP} (mA)	Reverse voltage V_R (V)	Operating temperature T_{opr} (℃)	Stotage temperature T_{stg} (℃)
SLR-56MC	Green	75	25	60	3	-25 to +85	-30 to +100
SLR-56MG							
SLR-56YC	Yellow						
SLR-56YY							
SLR-56DC	Orange	60	20				
SLR-56DU							
SLR-56VC	Red						
SLR-56VR							

＊I_{FP} measured under duty ≦1/5,pulse width ≦1ms.

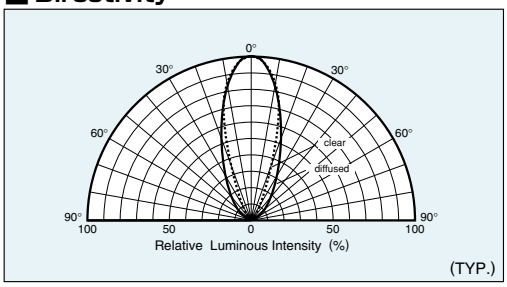
■ Electrical Optical Characteristics (Ta=25℃)

Part No.	Resin Color	Forward voltage V_F		Reverse current I_R		Light wavelength Peak λp	Light wavelength Half-wave Δλ		Brightness I_V		
		Typ. (V)	I_F (mA)	Max. (μA)	V_R (V)	Typ. (nm)	Typ. (nm)	I_F (mA)	Min. (mcd)	Typ. (mcd)	I_F (mA)
SLR-56MC	Colored Clear	2.1	10	10	3	563	40	10	14	40	10
SLR-56MG	Colored Diffused								5.6	16	
SLR-56YC	Colored Clear					585			9.0	25	
SLR-56YY	Colored Diffused								3.6	10	
SLR-56DC	Colored Clear	2.0				610			9.0	25	
SLR-56DU	Colored Diffused								3.6	10	
SLR-56VC	Colored Clear					650			9.0	25	
SLR-56VR	Colored Diffused								3.6	10	

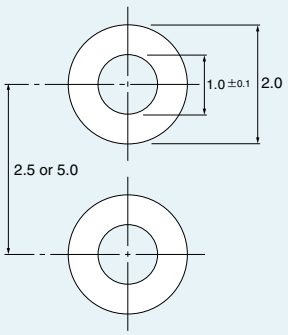
■ External Dimensions (Unit : mm)



■ Directivity

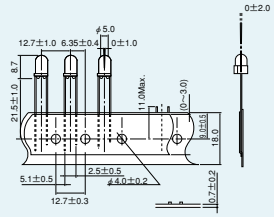


■ Recommemded Pad Layout

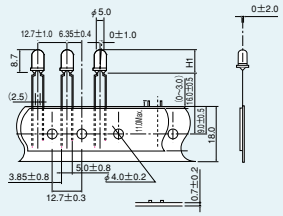


■ Packaging Spacifications (Unit : mm)

Straight Type : T32



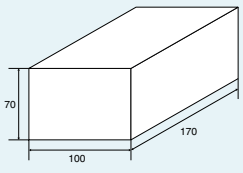
Formed Lead Type



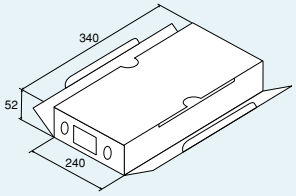
Forming H1 Dimensions (mm)		
TB7	TE7	TF7
12.4	15.4	16.4

Packaging

Bulk(3F) : 1000pcs/Box

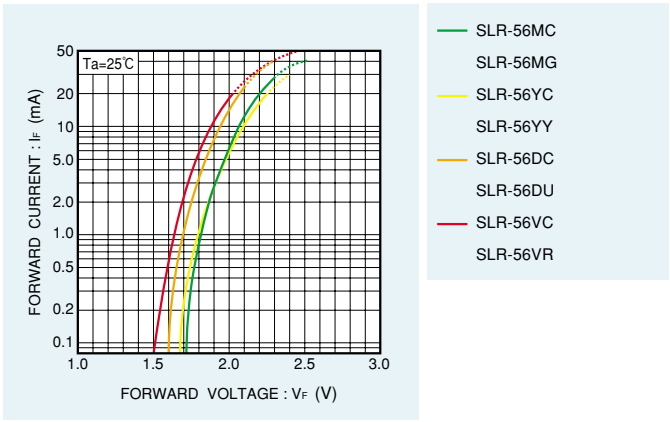


Tape : 2000pcs/Box



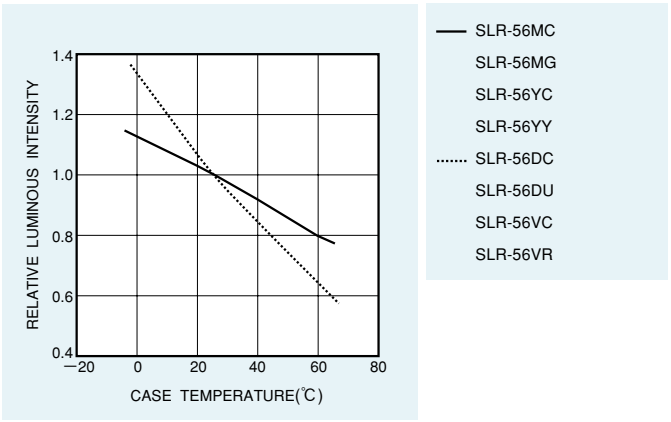
Electrical Characteristic Curves

Forward Current - Forward Voltage



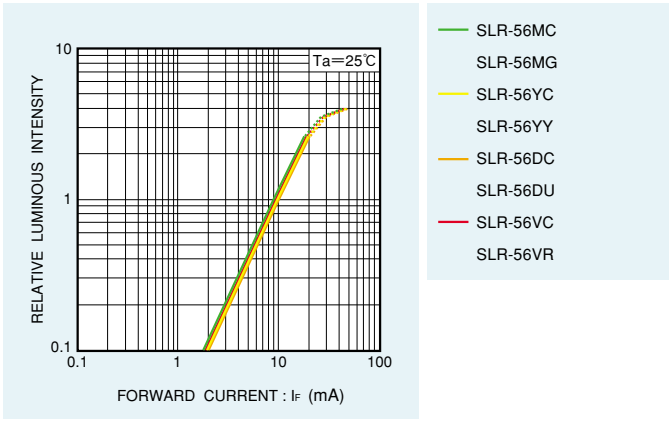
SLR-56MC
SLR-56MG
SLR-56YC
SLR-56YY
SLR-56DC
SLR-56DU
SLR-56VC
SLR-56VR

Relative Luminous Intensity - Case Temperature



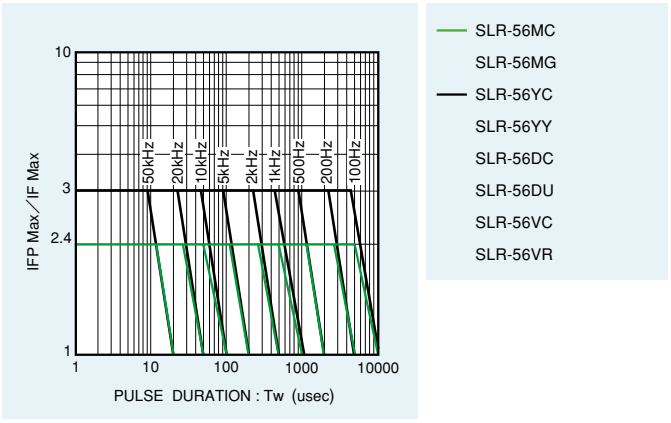
SLR-56MC
SLR-56MG
SLR-56YC
SLR-56YY
SLR-56DC
SLR-56DU
SLR-56VC
SLR-56VR

Relative Luminous Intensity - Forward Current



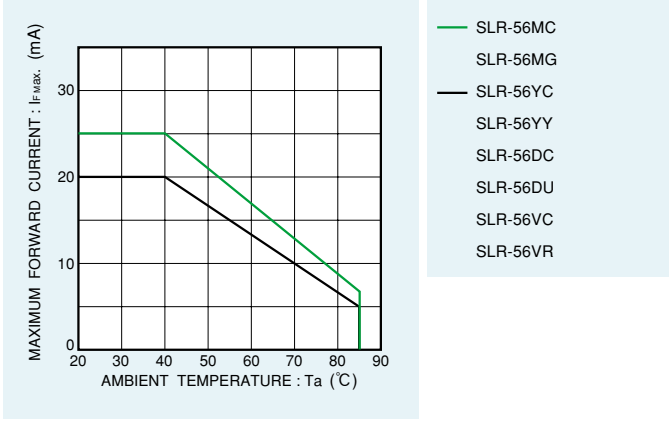
SLR-56MC
SLR-56MG
SLR-56YC
SLR-56YY
SLR-56DC
SLR-56DU
SLR-56VC
SLR-56VR

Ratio of Maximum Tolerable Peak Current - Pulse Duration



SLR-56MC
SLR-56MG
SLR-56YC
SLR-56YY
SLR-56DC
SLR-56DU
SLR-56VC
SLR-56VR

Derating



SLR-56MC
SLR-56MG
SLR-56YC
SLR-56YY
SLR-56DC
SLR-56DU
SLR-56VC
SLR-56VR

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Table of luminosity rankings

Product name	Rank code	Product name	Rank code	Product name	Rank code
SLA-360JT*1	XG, XH, XJ, XK	SLR-325VC	L, M, N, P	SLR-56YY	K, L, M, N
SLA-360LT*1	XC, XD, XE, XF	SLR-322VR	K, L, M, N	SLV-312DC	F, G, H, J
SLA-360MT*1	XD, XE, XF, XG	SLR-322DC	L, M, N, P	SLV-312MC	H, J, K, L
SLA-370JT*1	XJ, XK, XL, XM	SLR-332DU	K, L, M, N	SLV-312VC	F, G, H, J
SLA-370LT*1	XE, XF, XG, XH	SLR-332MC	L, M, N, P	SLV-312YC	F, G, H, J
SLA-370MT*1	XE, XF, XG, XH	SLR-332MG	L, M, N, P	SML-010JT*1	N, P, Q, R
SLA-560JT*1	XJ, XK, XL, XM	SLR-332VC	K, L, M, N	SML-010LT*1	L, M, N, P
SLA-560LT*1	XE, XF, XG, XH	SLR-332VR	K, L, M, N	SML-010VT*1	J, K, L, M
SLA-560MT*1	XE, XF, XG, XH	SLR-332YC	K, L, M, N	SML-010DT*1	K, L, M, N
SLA-570JT*1	XL, XM, XN, XP	SLR-332YY	J, K, L, M	SML-010YT*1	J, K, L, M
SLA-570LT*1	XG, XH, XJ, XK	SLR-342DC	M, N, P, Q	SML-010MT*1	L, M, N, P
SLA-570MT*1	XJ, XK, XL, XM	SLR-342DU	L, M, N, P	SML-010PT*1	J, K, L, M
SLA-580JT*1	XL, XM, XN, XP	SLR-342MC	M, N, P, Q	SML-020MLT*1,*2	PN,PM,NN,NM,MN,MM
SLA-580LT*1	XJ, XK, XL, XM	SLR-342MG	L, M, N, P	SML-020MVT*1,*2	PL,PK,NL,NK,ML,MK
SLA-580MT*1	XJ, XK, XL, XM	SLR-342VC	M, N, P, Q	SML-210JT*1	N, P, Q, R
SLB-24MG	F, G, H, J	SLR-342VR	L, M, N, P	SML-210LT*1	K, L, M, N
SLB-24YY	D, E, F, G	SLR-342YC	L, M, N, P	SML-210VT*1	H, J, K, L
SLB-24VR	D, E, F, G	SLR-342YY	K, L, M, N	SML-210DT*1	J, K, L, M
SLB-24DU	D, E, F, G	SLR-40MC	M, N, P, Q	SML-210YT*1	J, K, L, M
SLB-25MG	E, F, G, H	SLR-40MG	L, M, N, P	SML-210MT*1	K, L, M, N
SLB-25YY	E, F, G, H	SLR-40YC	L, M, N, P	SML-210PT*1	H, J, K, L
SLB-25DU	E, F, G, H	SLR-40YY	J, K, L, M	SML-211UT*4	G, H, J, K
SLB-25VR	E, F, G, H	SLR-40DC	L, M, N, P	SML-211DT*4	G, H, J, K
SLC-22DU	F, G, H, J	SLR-40DU	K, L, M, N	SML-211YT*4	F, G, H, J
SLC-22MG	G, H, J, K	SLR-40VC	L, M, N, P	SML-310JT*1	N, P, Q, R
SLC-22VR	G, H, J, K	SLR-40VR	K, L, M, N	SML-310LT*1	K, L, M, N
SLC-22YY	G, H, J, K	SLR-505MC	M, N, P, Q	SML-310VT*1	H, J, K, L
SLR-322DC	L, M, N, P	SLR-505MG	L, M, N, P	SML-310DT*1	J, K, L, M
SLR-322DU	J, K, L, M	SLR-505VC	L, M, N, P	SML-310YT*1	J, K, L, M
SLR-322MC	M, N, P, Q	SLR-505VR	J, K, L, M	SML-310MT*1	K, L, M, N
SLR-322MG	K, L, M, N	SLR-520MC	L, M, N, P	SML-310PT*1	H, J, K, L
SLR-322VC	L, M, N, P	SLR-520MG	L, M, N, P	SML-311UT*4	G, H, J, K
SLR-322VR	K, L, M, N	SLR-520VC	L, M, N, P	SML-311DT*4	G, H, J, K
SLR-322YC	K, L, M, N	SLR-520VR	K, L, M, N	SML-311YT*4	F, G, H, J
SLR-322YY	K, L, M, N	SLR-56DC	M, N, P, Q	SML-510MW*1	K, L, M, N
SLR-325MC	M, N, P, Q	SLR-56DU	K, L, M, N	SPB-25MVW*3	E, F, G, H
SLR-325MG	L, M, N, P	SLR-56MC	N, P, Q, R	SPR-39MVW*3	K, L, M, N
SLR-325YC	L, M, N, P	SLR-56MG	L, M, N, P	SPR-54MVW*3	K, L, M, N
SLR-325YY	J, K, L, M	SLR-56VC	M, N, P, Q	SPR-325MVW*3	L, M, N, P
SLR-325DC	L, M, N, P	SLR-56VR	K, L, M, N	SPR-505MVW*3	L, M, N, P
SLR-325DU	K, L, M, N	SLR-56YC	M, N, P, Q		

*1 Measured at IF = 20mA

*2 The former is the intensity rank at short wavelength (green), and the latter is the intensity rank at long wavelength (red).

*3 Intensity rank at short wavelength(green).

*4 IF = 2mA at time of intensity ranking.

*5 Rankings may change due to improvements in emitters. Check the data sheet for a product before using it.

Luminous intensity rankings

(Units : mcd)

Rank code	Range
D	0.22～0.45
E	0.36～0.71
F	0.56～1.1
G	0.90～1.8
H	1.4～2.8
J	2.2～4.5
K	3.6～7.1
L	5.6～11
M	9.0～18
N	14～28
P	22～45
Q	36～71
R	56～110
S	90～180
T	140～280
U	220～450
V	360～710

(Units : mcd)

Rank code	Range
XA	9.0～16.5
XB	13.5～24.0
XC	20.0～36.0
XD	30.0～52.0
XE	42.0～75.0
XF	61.0～110
XG	90～165
XH	135～240
XJ	200～360
XK	300～520
XL	420～750
XM	610～1100
XN	900～1650
XP	1350～2400

●For more information about rankings, contact your ROHM representative.

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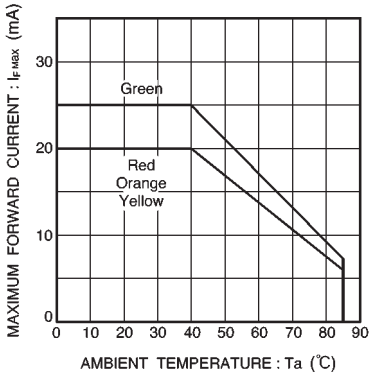


Fig. 3 Maximum forward current vs. ambient temperature

Determine the pulse drive conditions as follows.

1. Decide what repetition frequency (f) and duty factor (DF) will be used.
2. Determine the maximum tolerable peak current ratio from Figure 2.

$$\frac{I_F \text{ peak Max.}}{I_F \text{ Max.}}$$

3. Determine the maximum forward current from Figure 3.

For example, when Ta = 40°C or above, the maximum forward current (I_F Max.) decreases.

4. Calculate the maximum tolerable peak current (I_F peak Max.).

Example

If f = 1 kHz, DF = 10%, and Ta = 40°C, the maximum tolerable peak current ratio from Figure 2 is 3.0 for red, orange and yellow, and 2.4 for green.

The maximum forward current I_F Max. at Ta = 40°C is 20 mA for red, orange and yellow, and 25 mA for green.

Therefore, the maximum tolerable peak current under these conditions is as follows :

●Red, orange and yellow .. 20 mA × 3.0 = 60 mA

●Green ..... 25 mA × 2.4 = 60 mA

For the repetition frequency, we recommend 1 kHz or above.

(7) Decrease of rated current

The maximum rated forward current of LED lamps will vary depending on the ambient operating temperature. (Refer to Figure 3)

(8) Variation of luminous intensity depending on ambient temperature

ROHM LED lights have a temperature coefficient of approximately –1% for red and orange, and – 0.5% for yellow and green. (Refer to the luminous intensity vs. case temperature characteristics for each LED type.)

●Storage precautions

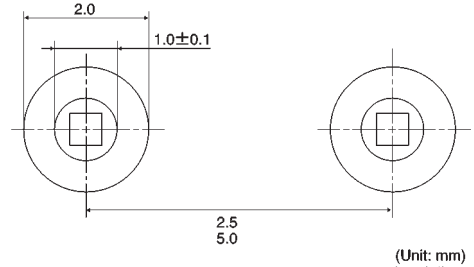
Storage in a dry box is best. However, if this is not possible we recommend the following conditions :

Temperature : 5 to 30°C

Humidity : 60%RH max.

●Recommended PCB

We recommend the following hole diameters. Note, however, that these may vary depending on the board material, degree of integration, and wiring.



(Unit: mm)
Lead diameter: 0.4mm
0.5mm

●LED lamp product names

The product names of ROHM LED lamps and chip LEDs are coded as follows :