

# SD - 101 · SD - 102 · SD - 103

The SD - 101,102,103 are position sensors for automatic focusing of camera.

**FEATURES**

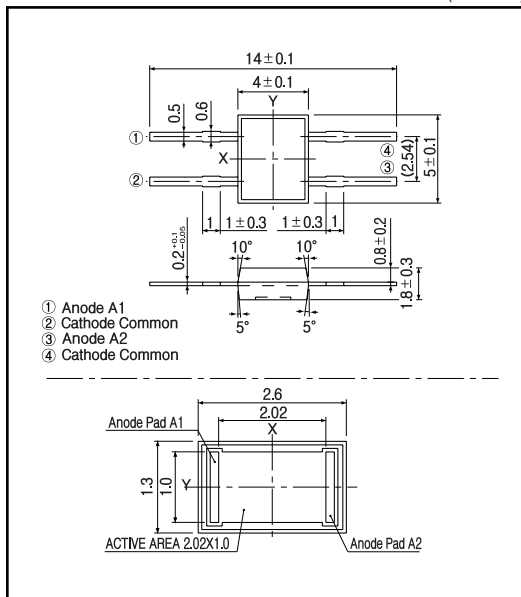
- Laser beam focusing/positioning is best performed
- High performance
- High reliability in demanding environments

**APPLICATIONS**

- Automatic focusing of camera

**DIMENSIONS**

(Unit : mm)



**MAXIMUM RATINGS**

(Ta=25 )

Item	Symbol	Rating	Unit
Reverse voltage	$V_R$	30	V
Power dissipation	$P_D$	30	mW
Operating temp.	$T_{opr.}$	- 25 ~ + 85	
Storage temp.	$T_{stg.}$	- 30 ~ + 100	

**ELECTRO-OPTICAL CHARACTERISTICS**

(Ta=25 )

Item	Symbol	Conditions	SD - 101			SD - 102			SD - 103			Unit.
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Reverse voltage	$V_R$	$I_R=10\mu A$	30			30			30			V
Dark current	$I_d$	$V_R=1V$			5			5			5	nA
Light current	$I_L^{*1}$	$V_R=1V, E=1000lx^5$		18		9	11		8	10		$\mu A$
Spectral sensitivity			400~1100			700~1100			720~1100			nm
Peak wavelength	$\lambda_p$		900			920			940			nm
Switching speeds	$t_r, t_f$	$V_R=1V, R_L=1K$	2			2			2			$\mu sec.$
Capacitance	$C_t$	$V_R=1V, f=1MHz$	10			10			10			pF
Resistance	$R_s^{*2}$	$V_R=1V, V_a=0.5V$	100	150	200	100	150	200	100	150	200	K
Signal slope	$\frac{I_L}{I_L^{*3}}$	$V_R=1V$	0.100			0.100			0.100			-
Light current difference	$\frac{I_L}{I_L^{*4}}$		$\pm 2$			$\pm 2$			$\pm 2$			%

\*1.  $I_L = I_1 + I_2$  ( $I_1$  = Light current of A1,  $I_2$  = Light current of A2)

\*2.  $V_a$  = Voltage of Anode A1, A2

\*3.  $I_L = I_1(1 - I_2) / (I_1 + I_2) \cdot I_1$

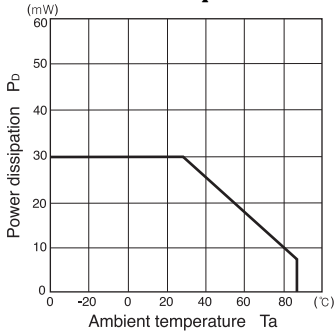
\*4.  $I_L = I_1 - I_2$

\*5. Color temp. = 2856K standard Tungsten lamp

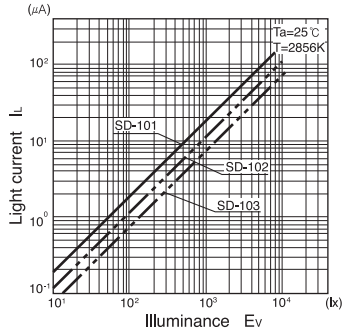
**Position Sensitive Diode**

**SD - 101 · SD - 102 · SD - 103**

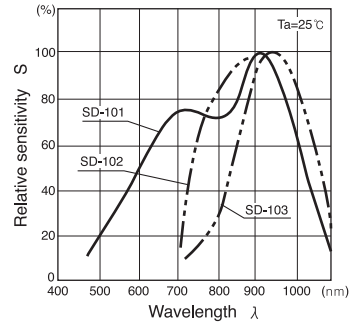
**Power dissipation Vs. Ambient temperature**



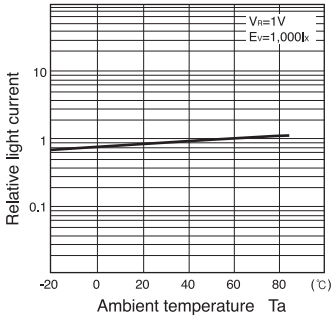
**Light current Vs. Illuminance**



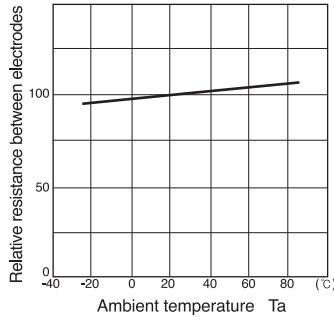
**Relative sensitivity Vs. Wavelength**



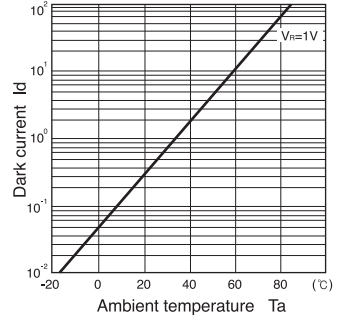
**Relative light current Vs. Ambient temperature**



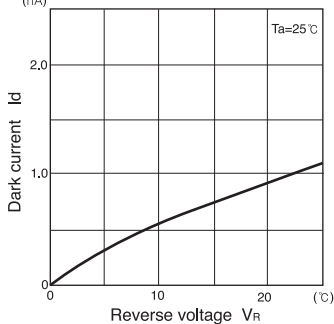
**Relative resistance between electrodes Vs. Ambient temperature**



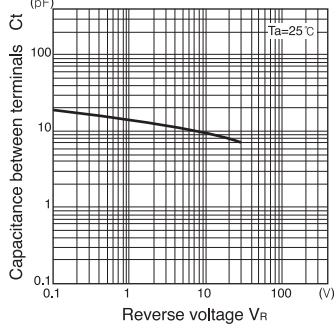
**Dark current Vs. Ambient temperature**



**Dark current Vs. Reverse voltage**



**Capacitance between terminals Vs. Reverse voltage**



**Relative light current Vs. Position**

