

## SG - 302

The SG - 302 reflective sensor for paper sensing combine high - output GaAs IRED with high sensitivity photodiode. It is most applicable to tilt sensor.

**FEATURES**

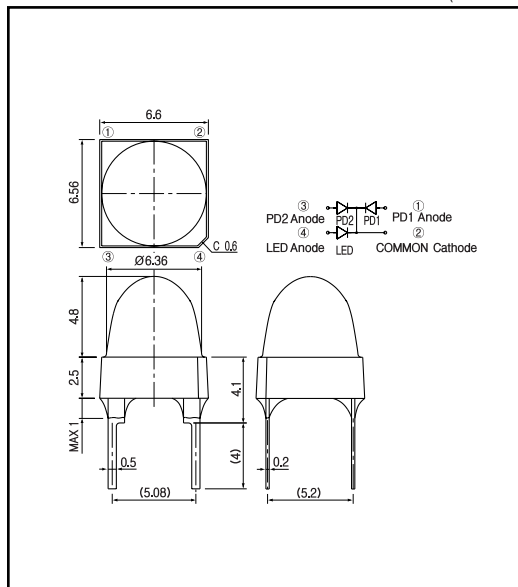
- High performance
- High - speed response

**APPLICATIONS**

- Tilt sensor
- LD player

**DIMENSIONS**

(Unit : mm)

**MAXIMUM RATINGS**

(Ta=25 )

	Item	Symbol	Rating	Unit
Emitter	Forward current	$I_F$	30	mA
	Reverse voltage	$V_R$	5	V
	Power dissipation	$P_D$	45	mW
	Reverse voltage	$V_R$	20	V
Detector	Power dissipation	$P_D$	30	mW
	Operating temp.	$T_{opr.}$	- 10 ~ + 70	
	Storage temp.	$T_{stg.}$	- 30 ~ + 80	
	Soldering temp.	$T_{sol.}$	260 <sup>*1</sup>	

\*1. For MAX. 5 seconds at the position of 1mm from the package

**ELECTRO-OPTICAL CHARACTERISTICS**

(Ta=25 )

	Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Emitter	Forward voltage	$V_F$	$I_F = 10\text{mA}$		1.17	1.45	V
	Peak wavelength	$\lambda_p$	$I_F = 10\text{mA}$		940		nm
	Spectral bandwidth 50%		$I_F = 10\text{mA}$		50		nm
Detector	Sensitivity	$S$	$\lambda = 900\text{nm}, V_i = 5\text{V}$		0.5		$\mu\text{A}$
	Dark current	$I_D$	$E_v = 0\text{k}, V_R = 10\text{V}$			0.2	$\mu\text{A}$
	Max. sens wavelength	$\lambda_p$			900		nm
	Switching speed	$t_r$	$V_i = 0\text{V}, R_L = 10\text{k}$		0.6		$\mu\text{A}$

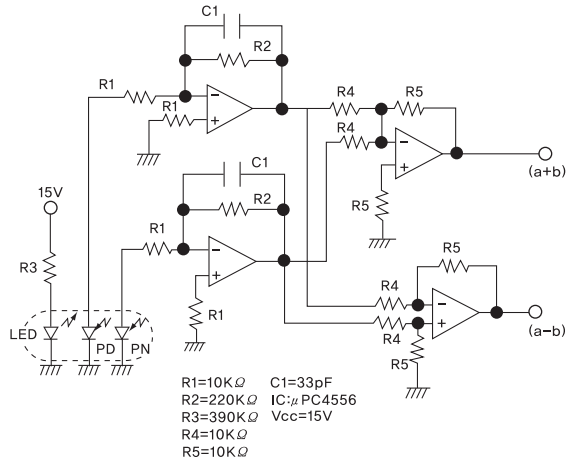
**ELECTRO-OPTICAL CHARACTERISTICS**

(Ta=25 )

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit.	
Combination characteristics	Zero offset	off	$h=h_{mm}, =0$	- 2.5		2.5	deg.	
	Offset change	off	Temperature	$h=h_{mm}, =0$		$\pm 0.1$	deg.	
			Distance	$h=h \pm 2mm, =0$	- 0.15		0.15	deg.
			Tangential inclination	$h=h_{mm}, = \pm 3[deg.]$	- 0.10		0.1	deg.
Combination characteristics	Absolute sensitivity	$V(a - b)/$	$h=h_{mm}, =0$			0.64	V/deg.	
			A Rank	0.41		0.95	V/deg.	
			B Rank	0.60		1.42	V/deg.	
			C Rank	0.89			V/deg.	
	Sensitivity temperature characteristic	$V_r$	$h=h_{mm}, =0$		$\pm 30$		%	
	Sensitivity pifferece	$V_s$	$h=h_{mm}, =0$	- 15		15	%	
	Total light	$V(a+b)$	$h=h_{mm}, =0$	0.8			V	
	Stray light(sun)	$V_{C1}$	$h=h_{mm}$			5.5	V	
Stray light(difference)	$V_{C2}$	No incident Light	- 18		18	mV		
Sensitivity decrease angle		$h=h_{mm}, =0$	$\pm 4$			deg.		
Error peak angle		$h=h_{mm}, =0$	$\pm 2$			deg.		

\*ho = 9.2mm

\*Measurement Circuit : Refer to Figure 1.



**Figure 1**