

# LG - 209

The LG-209 photointerrupter combine high output GaAs IRED with Photo IC. The sensor makes possible easy development of object detecting systems with high performance, high reliability and small equipment size.  
 LG-209L : High level output at shielding  
 LG-209D : Low level output at shielding

**FEATURES**

- PWB direct mount type
- GAP : 2.4mm
- With the installation positioning boss
- Low-boy type( installation height : 5.4mm )

**APPLICATIONS**

- Printers
- Facsimiles
- Vending machines
- Amusement machines

**MAXIMUM RATINGS**

(Ta=25 )

	Item	Symbol	Rating	Unit
Input	Power dissipation	$P_D$	100	mW
	Forward current	$I_F$	60	mA
	Reverse voltage	$V_R$	5	V
	Pulse forward current <sup>*1</sup>	$I_{FP}$	1	A
Output	Supply voltage	$V_{CC}$	17	V
	Low level output current	$I_{OL}$	30	mA
	Power dissipation	$P$	200	mW
	Operating temp. <sup>*2</sup>	$T_{opr.}$	-20 ~ +85	
	Storage temp. <sup>*2</sup>	$T_{stg.}$	-30 ~ +85	
	Soldering temp. <sup>*3</sup>	$T_{sol.}$	260	

\*1. pulse width :  $t_w$  100  $\mu$ sec. period ; T=10msec.

\*2. No icebound or dew

\*3. For MAX.5 seconds at the position of 1mm from the package

**ELECTRO-OPTICAL CHARACTERISTICS**

(Ta=25 )

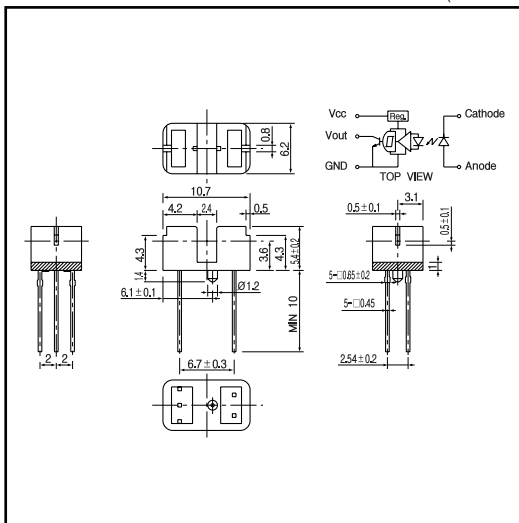
	Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	$V_F$	$I_F=20mA$		1.2	1.4	V
	Reverse current	$I_R$	$V_R=5V$			10	$\mu$ A
	Peak wavelength	$\lambda_p$	$I_F=20mA$		940		nm
Input	Operating supply voltage rang	$V_{CC}$		4.5		16.5	V
	Low level output voltage	$V_{OL}$	$V_{CC}=5V, I_F=0mA, I_{OL}=16mA$		0.3	0.4	V
	High level output voltage	$V_{OH}$	$V_{CC}=5V, I_F=12mA, R=10k$	4.5			V
	Low level supply current	$I_{CCL}$	$V_{CC}=5V, I_F=0mA$		3	10	mA
	High level supply current	$I_{CCH}$	$V_{CC}=5V, I_F=20mA$		2	10	mA
	Transmission	L H threshold input current <sup>*4</sup>	$I_{FHL}$	$V_{CC}=5V, R=10k$		5	12
Hysteresis <sup>*5</sup>		$I_{FHL}/I_{FLH}$	$V_{CC}=5V, R=10k$	0.60	0.83	0.98	-
L H propagation time		$t_{PLH}$	$V_{CC}=5V, I_F=18mA, R=3.3k$		1		$\mu$ sec.
H L propagation time		$t_{PHL}$			3		$\mu$ sec.
Rise time		$t_r$			0.6		$\mu$ sec.
Fall time	$t_f$			0.02		$\mu$ sec.	

\*4.  $I_{FHL}$  represents forward current when output changes from low to high.

\*5.  $I_{PHL}$  represents forward current when output changes from high to low.

**DIMENSIONS**

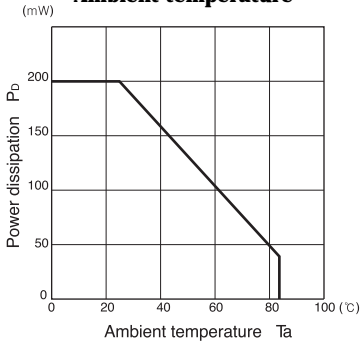
(Unit : mm)



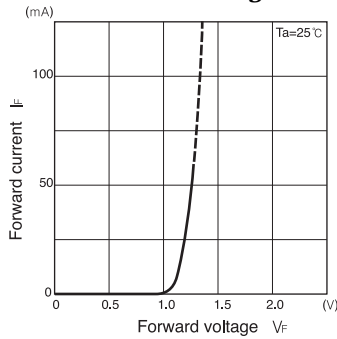
**Photointerrupters(Transmissive)**

**LG - 209**

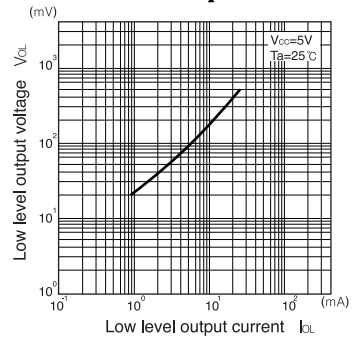
**Power dissipation Vs. Ambient temperature**



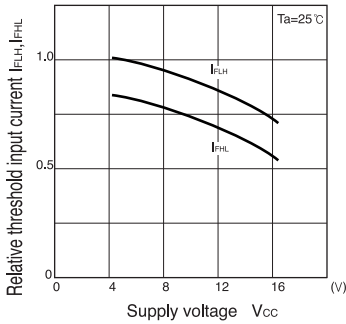
**Forward current Vs. Forward voltage**



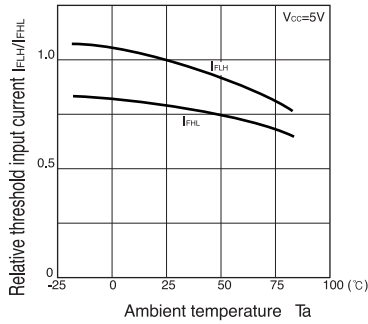
**Low level output voltage Vs. Low level output current**



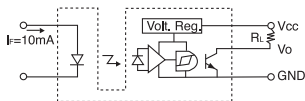
**Relative threshold input current Vs. Supply voltage**



**Relative threshold input current Vs. Ambient temperature**



Measurement of high level output voltage



Measurement of propagation time

