

# 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 highperformance, 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 <sub>D</sub>	100	mW
	Forward current	I <sub>F</sub>	60	mA
	Reverse voltage	V <sub>R</sub>	5	V
	Pulse forward current <sup>*1</sup>	I <sub>FP</sub>	1	A
Output	Supply voltage	V <sub>CC</sub>	17	V
	Low level output current	I <sub>CL</sub>	30	mA
	Power dissipation	P	200	mW
Operating temp. <sup>*2</sup>		T <sub>opr.</sub>	- 20 ~ + 85	
Storage temp. <sup>*2</sup>		T <sub>stg.</sub>	- 30 ~ + 85	
Soldering temp. <sup>*3</sup>		T <sub>sol.</sub>	260	

\*1. pulse width : t<sub>w</sub> 100 μsec. period : T=10msec.  
 \*2. No icebound or dew \*3. For MAX.5 seconds at the position of 1mm from the package

**ELECTRO-OPTICAL CHARACTERISTICS**

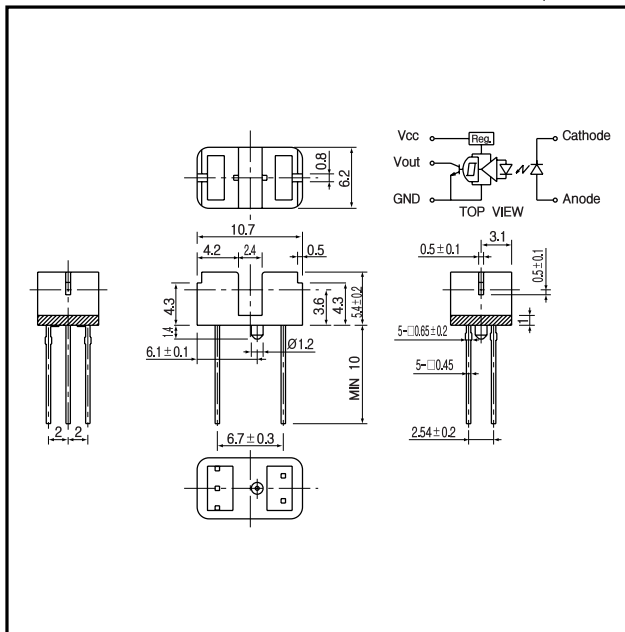
(Ta=25 )

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> =20mA		1.2	1.4	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> =5V			10	μA
	Peak wavelength	λ <sub>p</sub>	I <sub>F</sub> =20mA		940		nm
Input	Operating supply voltage rang	V <sub>CC</sub>		4.5		16.5	V
	Low level output voltage	V <sub>OL</sub>	V <sub>CC</sub> = 5V, I <sub>F</sub> = 0mA, I <sub>L</sub> = 16mA		0.3	0.4	V
	High level output voltage	V <sub>OH</sub>	V <sub>CC</sub> = 5V, I <sub>F</sub> = 12mA, R <sub>E</sub> = 10k	4.5			V
	Low level supply current	I <sub>CC</sub>	V <sub>CC</sub> = 5V, I <sub>F</sub> = 0mA		3	10	mA
	High level supply current	I <sub>CCH</sub>	V <sub>CC</sub> = 5V, I <sub>F</sub> = 20mA		2	10	mA
Transmisson	L H threshold input current <sup>*4</sup>	I <sub>FLH</sub>	V <sub>CC</sub> = 5V, R <sub>E</sub> = 10k		5	12	mA
	Hysteresis <sup>*5</sup>	I <sub>FHL</sub> /I <sub>FLH</sub>	V <sub>CC</sub> = 5V, R <sub>E</sub> = 10k	0.60	0.83	0.98	-
	L H propagation time	t <sub>PLH</sub>	V <sub>CC</sub> = 5V, I <sub>F</sub> = 18mA, R <sub>E</sub> = 3.3k		1		μsec.
	H L propagation time	t <sub>PHL</sub>			3		μsec.
	Rise time	t <sub>r</sub>				0.6	
Fall time	t <sub>f</sub>				0.02		μsec.

\*4. I<sub>FLH</sub> represents forward current when output changes from low to high.  
 \*5. I<sub>FHL</sub> represents forward current when output changes from high to low.

**DIMENSIONS**

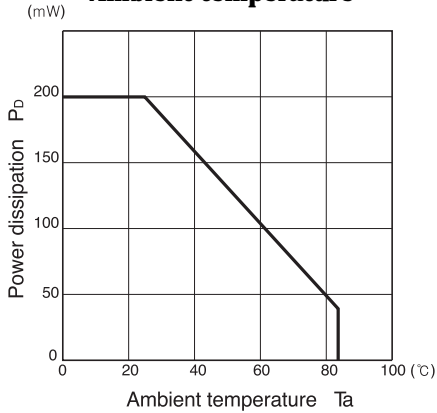
(Unit : mm)



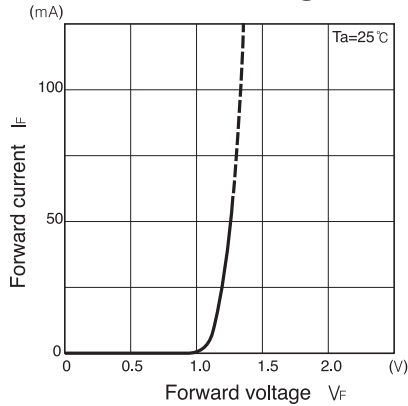
# Photointerrupters(Transmissive)

## LG - 209

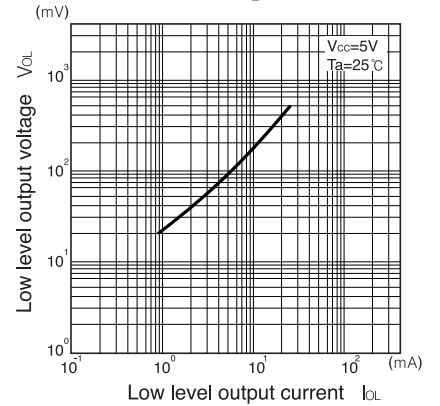
**Power dissipation Vs. Ambient temperature**



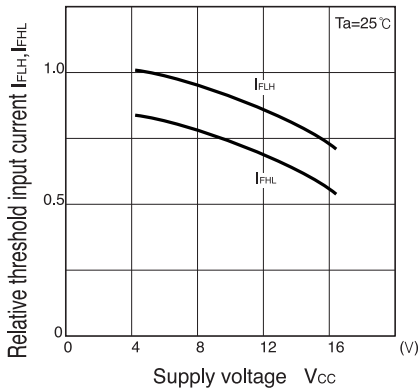
**Forward current Vs. Forward voltage**



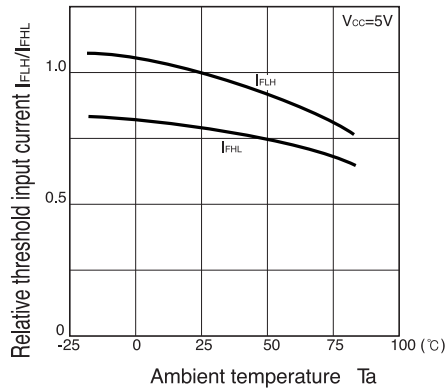
**Low level output voltage Vs. Low level output current**



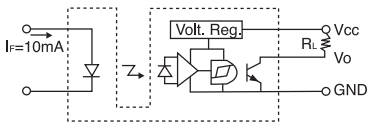
**Relative threshold input current Vs. Supply voltage**



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



Measurement of high level output voltage



Measurement of propagation time

