

# M61084FP

## PREAMPLIFIER WITH PHOTODETECTOR FOR OPTICAL PICKUP

### DESCRIPTION

The M61084FP is a semiconductor integrated circuit developed for DVD and CD-ROM (8 times speed) players. The IC is housed in a 12-pin clear molded plastic package and contains 8 preamplifiers with divided photodetectors.

### FEATURES

- 8 amplifiers with divided photodetectors
- Using small package ( 5.0X4.0X1.5 mm )
- For differential push-pull technique and single beam phase difference technique
- High Band preamplifier circuit (DC-20MHz)
- For red reys laser diode (ex.  $\lambda = 635 \text{ nm}$ )

### APPLICATION

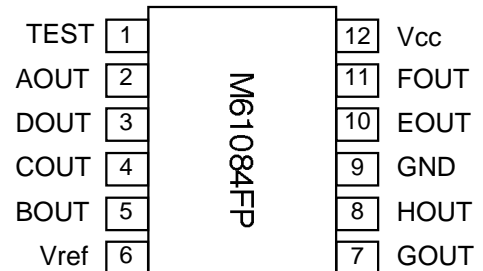
DVD , CD-ROM etc.

### RECOMMENDED OPERATING CONDITIONS

Supply voltage •••••••••• 4.5V to 5.5V

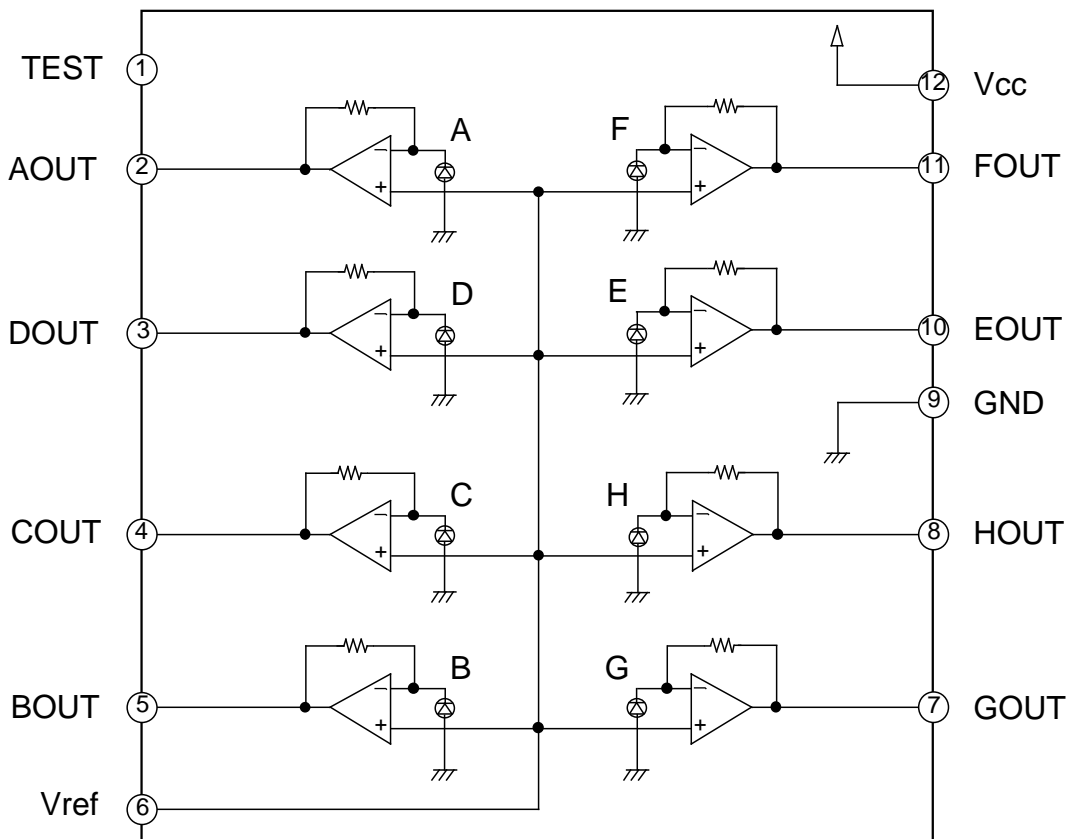
Rated supply voltage •••••• 5.0V

### PIN CONFIGURATION



Outline 12C2E

### BLOCK DIAGRAM



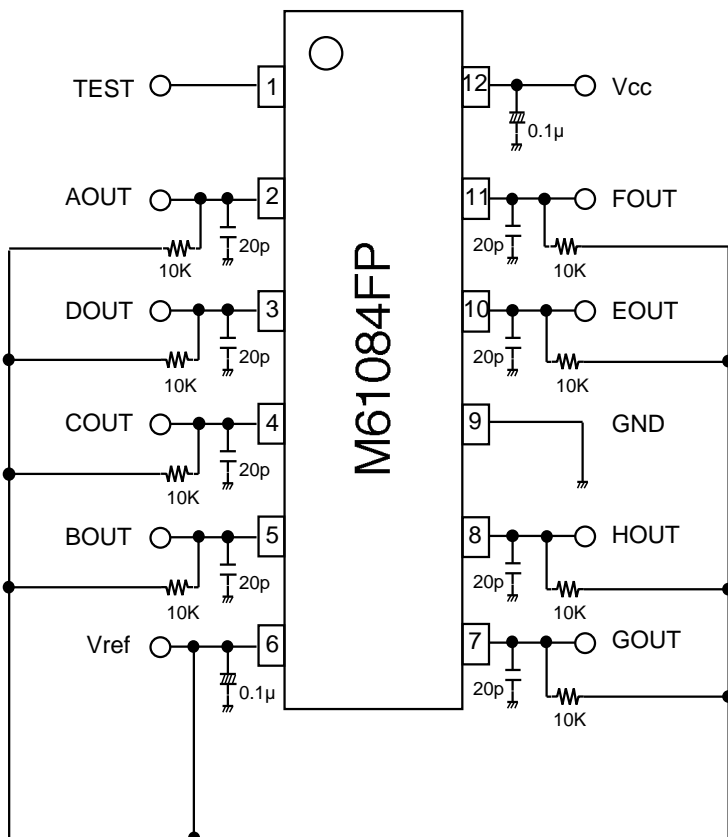
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ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise noted)

Symbol	Parameter	Rating	Unit
Vcc	Supply voltage	6.0	V
Pd	Power dissipation (Ta≤25°C)	250	mW
Topr	Operating temperature	-20 to +70	°C
Tstg	Storage temperature	-40 to +100	°C

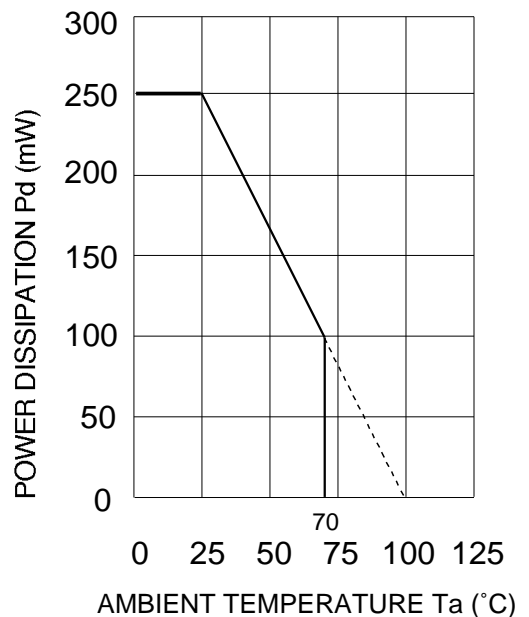
### TEST CIRCUIT



Units Resistance : Ω

Capacitance : F

### THERMAL DERATING (MAXIMUM RATINGS)



\*Please set the condenser connected to Vcc and Vc near the pin. (Within 10mm)

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ELECTRICAL CHARACTERISTICS (VCC=5.0V, Ta=25°C, unless otherwise noted)

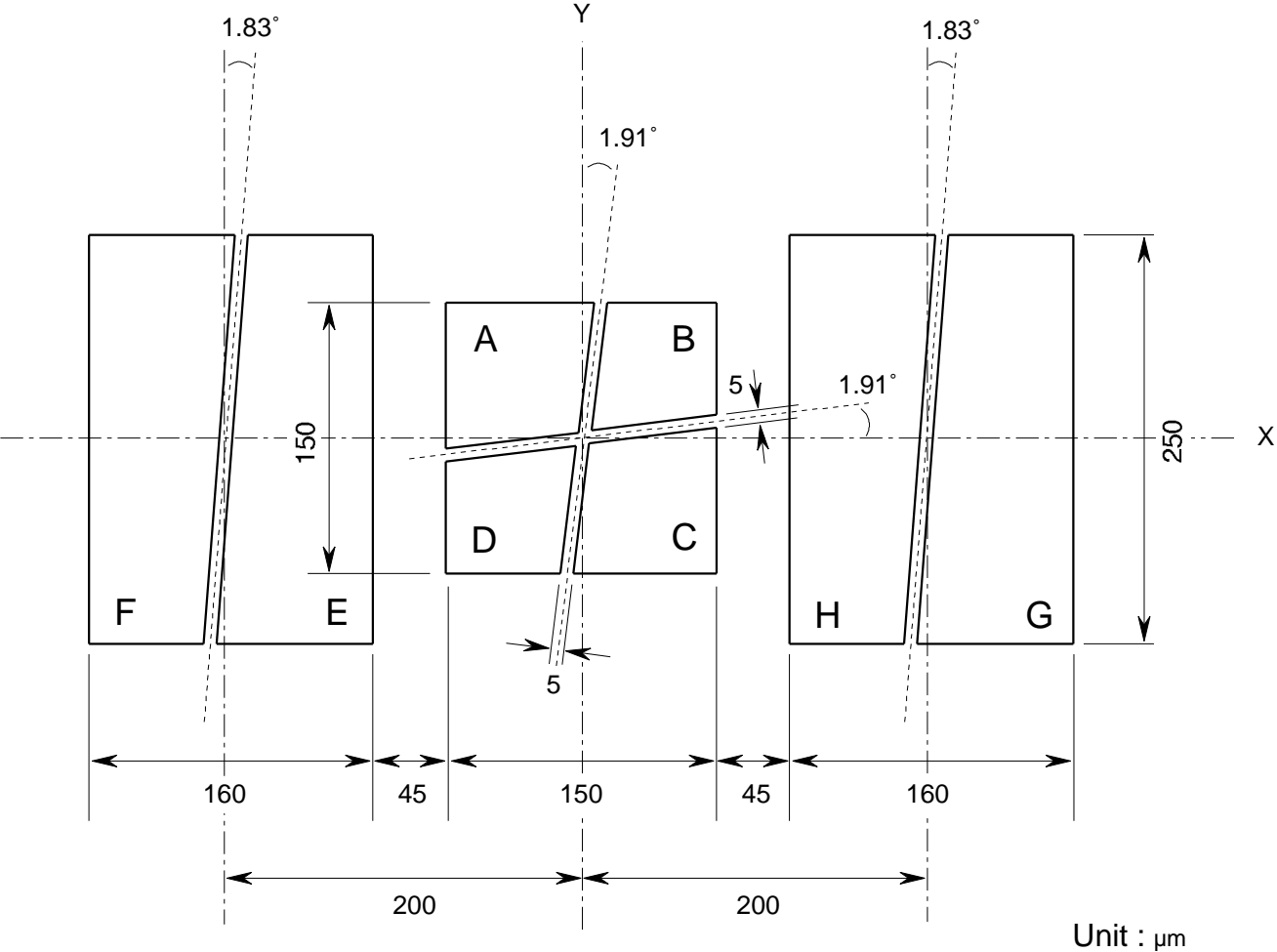
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I <sub>CC</sub>	Circuit current	In the dark	3.5	5.0	6.5	mA
V <sub>O</sub>	Output voltage	P <sub>O</sub> =10μW λ=635nm Output A to D without offset voltage	210	270	330	mV
		P <sub>O</sub> =10μW λ=635nm Output E to H without offset voltage	400	500	600	mV
V <sub>OFF</sub>	Output offset voltage	In the dark Output A to H	-15	0	+15	mV
ΔV <sub>OFF</sub>	Delta output offset voltage	In the dark (A+B) - (C+D)	-15	0	+15	mV
		In the dark (A+D) - (B+C)	-15	0	+15	
		In the dark E - F	-15	0	+15	
		In the dark G - H	-15	0	+15	
V <sub>OMAX</sub>	Maximum Output voltage	Output A to H maximum voltage at V <sub>CC</sub> =5.0 v	3.5	-	-	V
f <sub>c</sub>	Frequency characteristic	P <sub>O</sub> =10μW/cell λ=635nm 30%modulation 3 dB down Output A to D	15	20	-	MHz
		P <sub>O</sub> =10μW/cell λ=635nm 30%modulation 3 dBdown Output E to H	1.0	1.5	-	
V <sub>NO</sub>	Output noise voltage	Output A to D (at f=5MHz)	-	-80	-74	dBm
R	Optical sensitivity on SPD	λ=635nm Output A to H	-	0.3	-	A/W



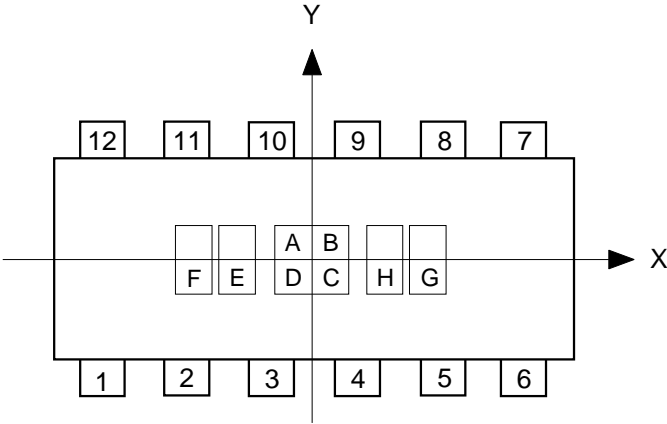
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### PD SIZE (TYPICAL)



Unit :  $\mu\text{m}$



- Note )
- A public difference from the SPD center and the flame  $\pm 0.2\text{mm}$
  - A public difference from the center of the flame of molded package  $\pm 0.2\text{mm}$
  - A public difference from the center of SPD and the center of molded package  $\pm 0.4\text{mm}$
  - The rotation deviation of SPD toward the flame  $\pm 3 \text{ degree}$

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