

# M61089FP

## PREAMPLIFIER WITH PHOTODETECTOR FOR OPTICAL PICKUP

### DESCRIPTION

The M61089FP is a semiconductor integrated circuit developed for CD-ROM (24 times speed). The IC is housed in a 10-pin clear molded plastic package and contains 6 preamplifiers with divided photodetectors.

### FEATURES

- Built-in 6 divided photodetectors
- Using small package (5.0 x4.0 x1.5mm)
- For three beam technique
- High Band preamplifier circuit (DC-28MHz)
- For infrared laser diode (ex.  $\lambda = 780 \text{ nm}$ )

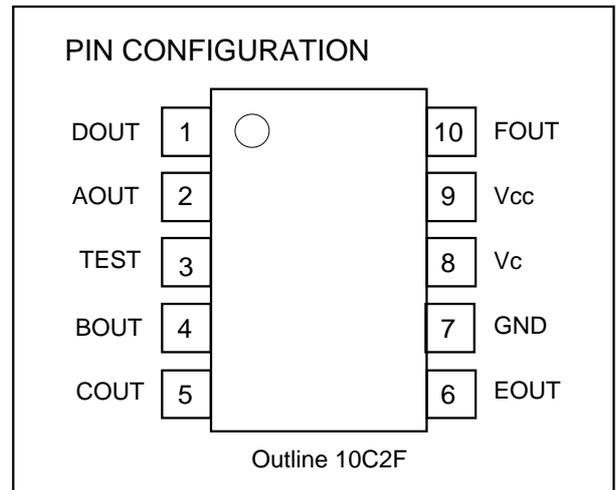
### APPLICATION

CD-ROM etc.

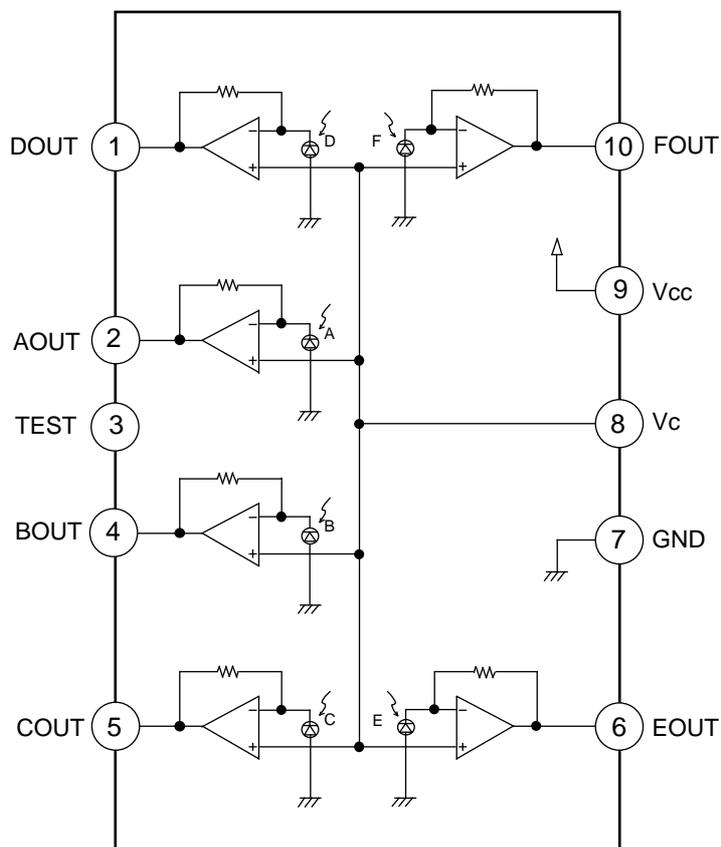
### RECOMMENDED OPERATING CONDITIONS

Supply voltage range ..... 3.3V to 5.5V

Rated supply voltage ..... 5.0V



### BLOCK DIAGRAM

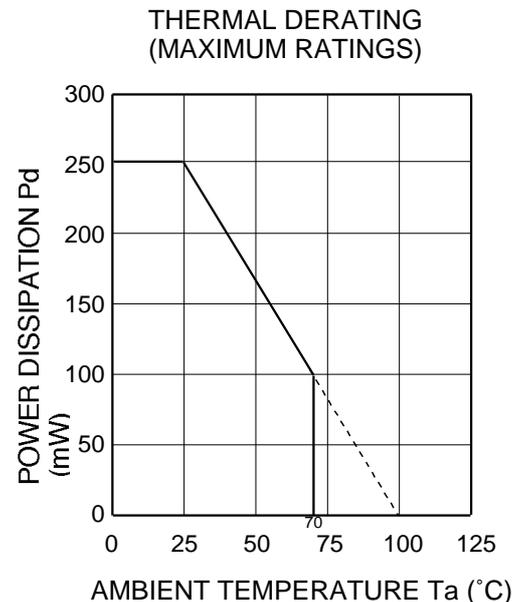
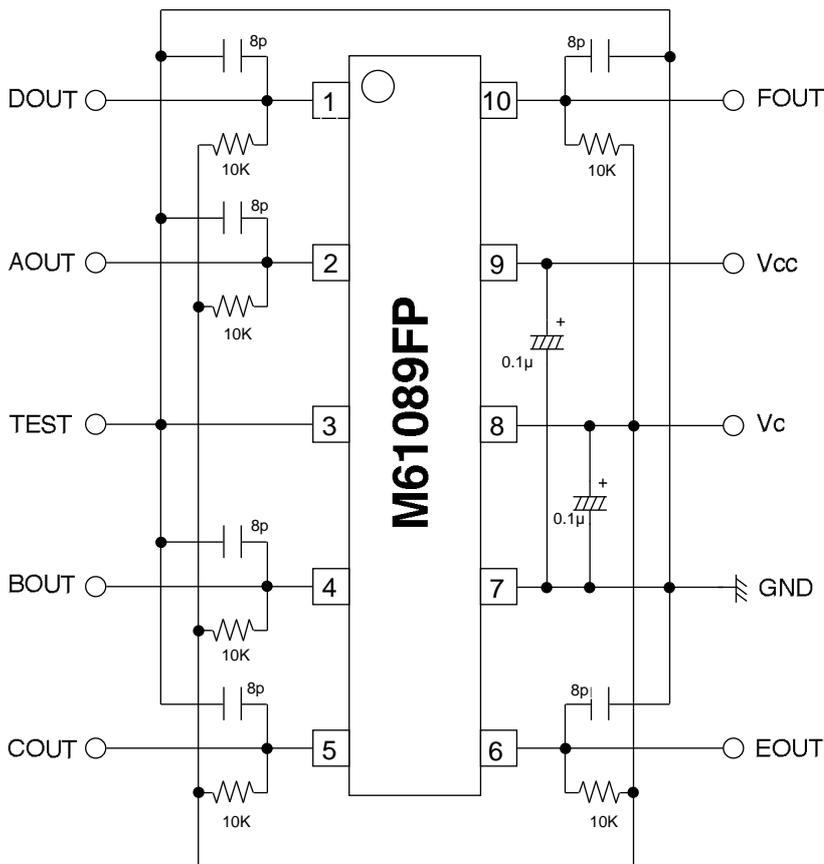


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ABSOLUTE MAXIMUM RATINGS (Ta=25°C , unless otherwise noted)

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



Units Resistance : Ω  
Capacitance : F

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

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ELECTRICAL CHARACTERISTIC (V<sub>CC</sub>=5.0V , V<sub>C</sub>=2.5V , T<sub>a</sub>=25°C, unless otherwise noted)

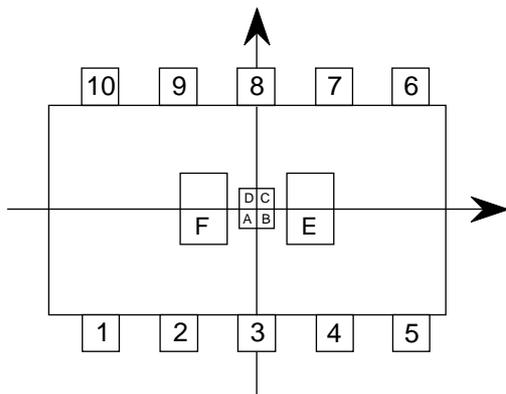
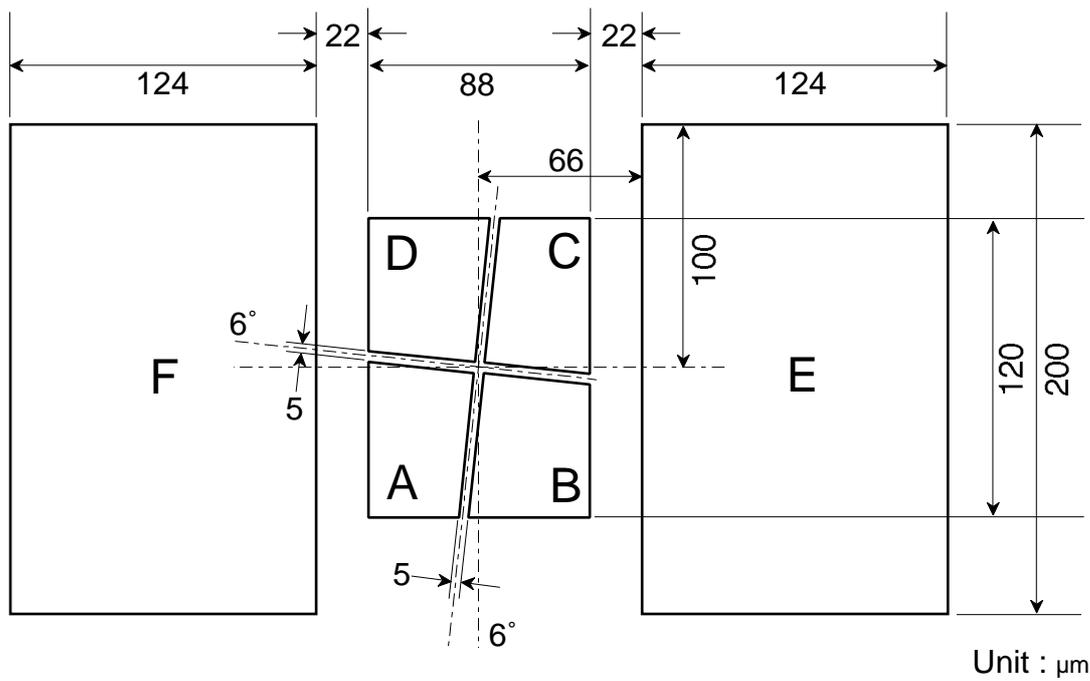
Parameter	Symbol	Test condition	Limits			Unit
			Min	Typ	Max	
Circuit current	I <sub>CC</sub>	In the dark	4.8	6.0	7.2	mA
Output voltage	V <sub>O</sub>	P <sub>O</sub> =10μW λ =780nm Output A to D	240	300	360	mV
		P <sub>O</sub> =10μW λ =780nm Output E to F	420	530	640	mV
Output voltage ratio	V <sub>OE</sub> /V <sub>OA</sub>	The ratio of output E to F toward output A to D	1.40	1.76	2.14	times
Output offset voltage	V <sub>OFF</sub>	In the dark output A to F	-15	0	+15	mV
Delta output offset voltage	ΔV <sub>OFF</sub>	In the dark (A+B) - (C+D)	-15	0	+15	mV
		In the dark (A+D) - (B+C)				
		In the dark E - F				
Frequency characteristic	f <sub>c</sub>	P <sub>O</sub> =10μW λ =780nm 3dB down Output A to D	25	28	-	MHz
		P <sub>O</sub> =10μW λ =780nm 3dB down Output E to F	1.0	1.5	-	
Output noise voltage	V <sub>NO</sub>	Output A to D (at f=20MHz)	-	-80	-74	dBm



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### PD SIZE (TYPICAL)



- 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 .....  $\pm 3$  degree

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