

M61083FP

PREAMPLIFIER WITH PHOTODETECTOR FOR OPTICAL PICKUP

DESCRIPTION

The M61083FP is a semiconductor integrated circuit developed for CD-ROM (48 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 and RF amplifiers
- Using small package (5.0 x 4.0 x 1.5mm)
- For three beam technique
- High Band preamplifier circuit (DC-65MHz)
- For infrared laser diode (ex. $\lambda = 780 \text{ nm}$)

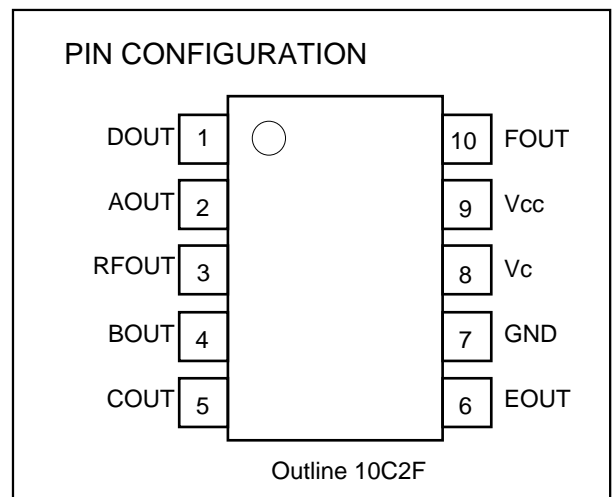
APPLICATION

CD-ROM etc.

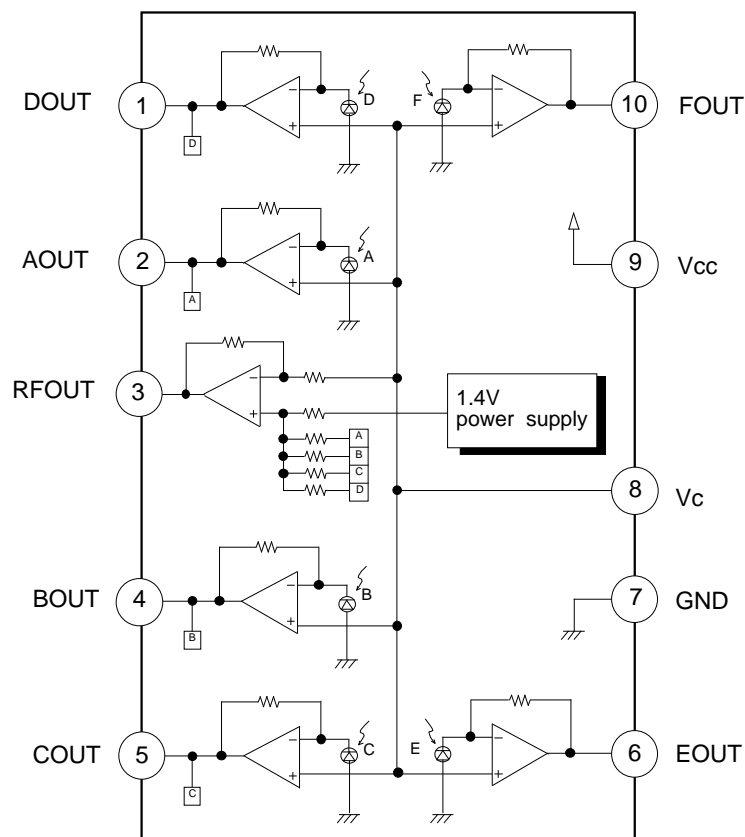
RECOMMENDED OPERATING CONDITIONS

Supply voltage range 4.5V to 5.5V

Rated supply voltage 5.0V



BLOCK DIAGRAM

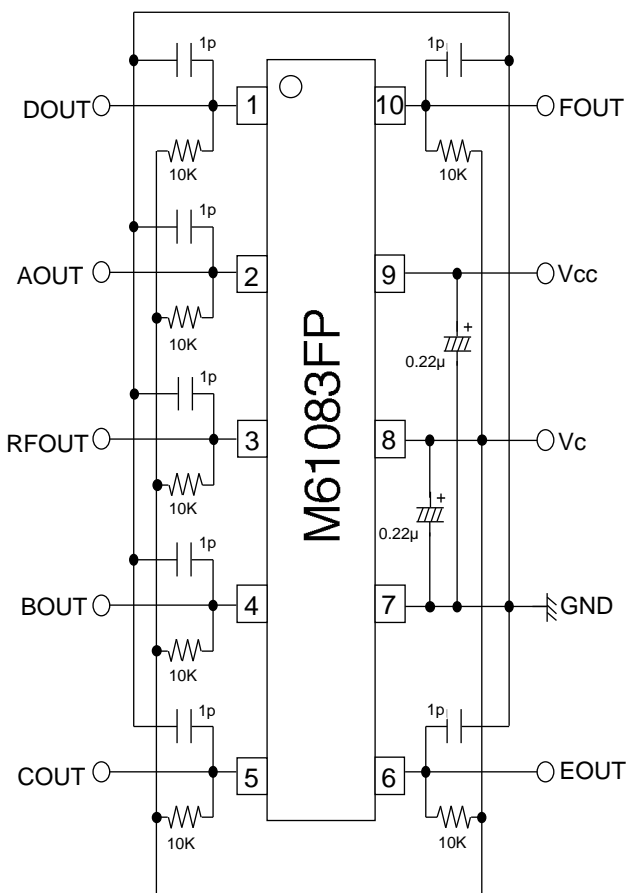


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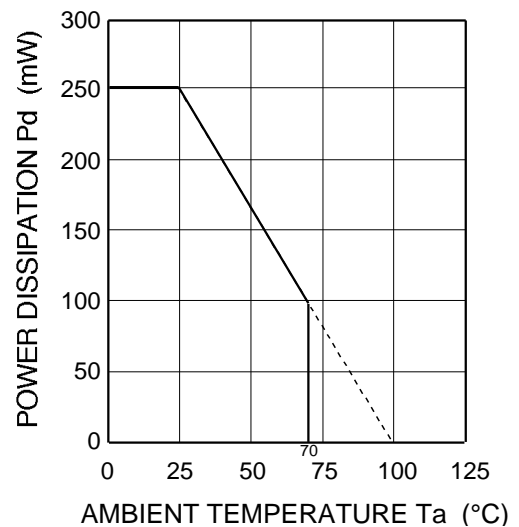
ABSOLUTE MAXIMUM RATINGS (Ta=25°C , unless otherwise noted)

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

THERMAL DERATING
(MAXIMUM RATINGS)



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



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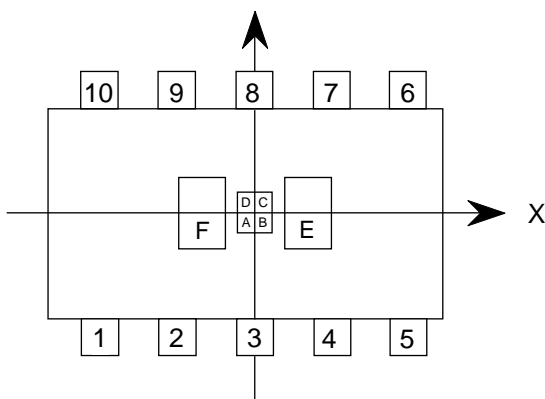
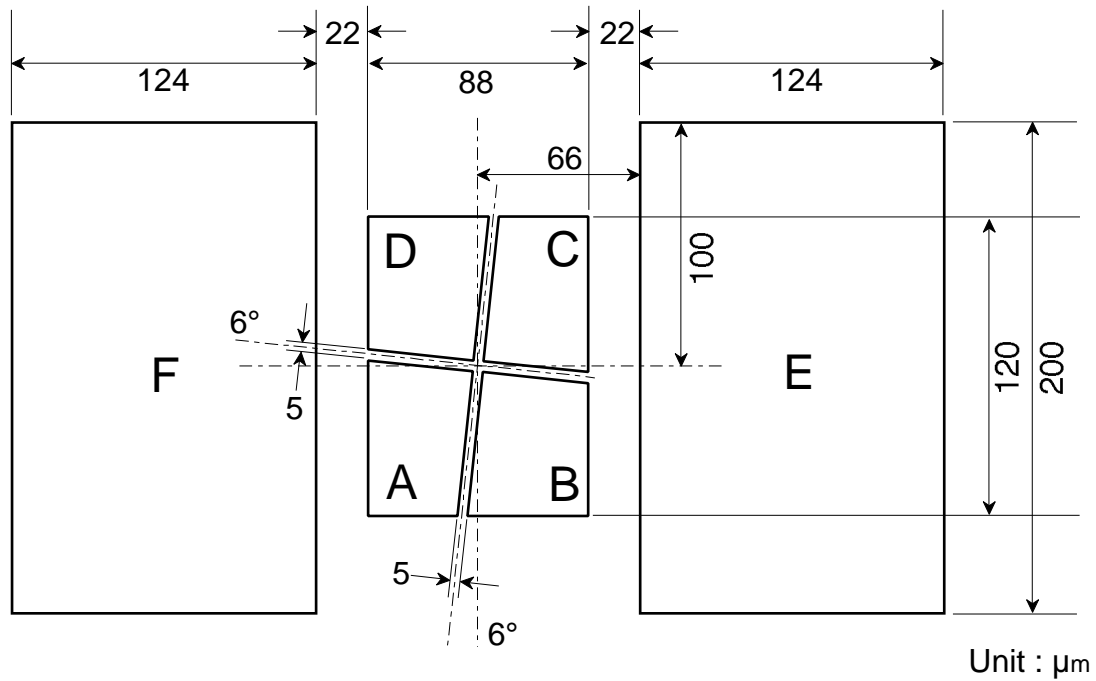
ELECTRICAL CHARACTERISTIC (V_{CC}=5.0V, V_C=2.5V, T_a=25°C, unless otherwise noted)

Parameter	Symbol	Test condition	Limits			Unit
			Min	Typ	Max	
Circuit current	I _{CC}	In the dark	6.8	9.0	11.2	mA
Output voltage	V _O	P _O =10μW λ =780nm Output A to D	176	232	292	mV
		P _O =10μW λ =780nm Output E to F	303	412	534	mV
Output voltage ratio 1	V _{OE} /V _{OA}	The ratio of output E to F toward output A to D	1.51	1.77	2.08	times
Output voltage ratio 2	V _{OE} /V _{OA}	The ratio of output RF toward output A to D	1.55	1.70	1.85	times
Output offset voltage 1	V _{OFF}	In the dark output RF	1.25	1.40	1.55	V
Output offset voltage 2	V _{OFF}	In the dark output A to F	-15	0	+15	mV
Output offset total voltage	V _{OFF}	In the dark total output A to D	-55	0	+55	mV
Delta output offset voltage	ΔV _{OFF}	In the dark A-B	-20	0	+20	mV
		In the dark C-D	-20	0	+20	
		In the dark (A+C) - (B+D)	-20	0	+20	
		In the dark E-F	-15	0	+15	
Frequency characteristic	f _c	P _O =10μW λ =780nm 3dB down Output A to D	50	65	-	MHz
		P _O =10μW λ =780nm 3dB down Output RF	50	65	-	
		P _O =10μW λ =780nm 3dB down Output E to F	1.0	3.5	-	
Group delay characteristic	G _{DR}	P _O =10μW λ =780nm Output A to D (f=1 to 30MHz)	-	2	4	nS
		P _O =10μW λ =780nm Output RF (f=1 to 30MHz)	-	2	5	
Output noise voltage	V _{NO}	output A to D (at f=30MHz)	-	-83	-77	dBm
		output RF (at f=30MHz)	-	-74	-66	

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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 ± 3 degree



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