

M51569FP

PREAMPLIFIER FOR OPTICAL PICKUP

DESCRIPTION

The M51569FP is an optical pickup preamplifier for compact disc players. It consists of 5 I-V amplifiers which convert current from photodetectors to voltage, HF (high frequency) amplifier, FE (focus error) amplifier, TE (tracking error) amplifier, HF detector, and mirror circuit. The multi-function 24-pin shrink flat package compact well with the optical pickup.

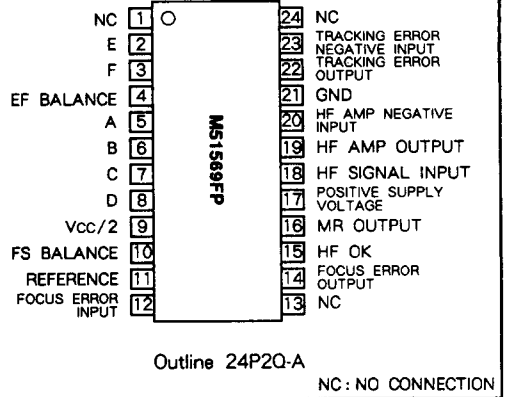
FEATURES

- For 3 laser system
- Wide dynamic range of HF Amp. Output level at single supply voltage: 2.4V_{PP} typ
- Built-in terminal for E-F Balance (pin 4), and Focus Error Balance (pin 10)
- Built-in LPF for FE amplifier and TE amplifier (f_c = 70kHz)
- Few required external components: 2 chemical capacitors, 3 ceramic capacitors, 2 volumes and resistors
- For single or split supply voltage

APPLICATION

CD player

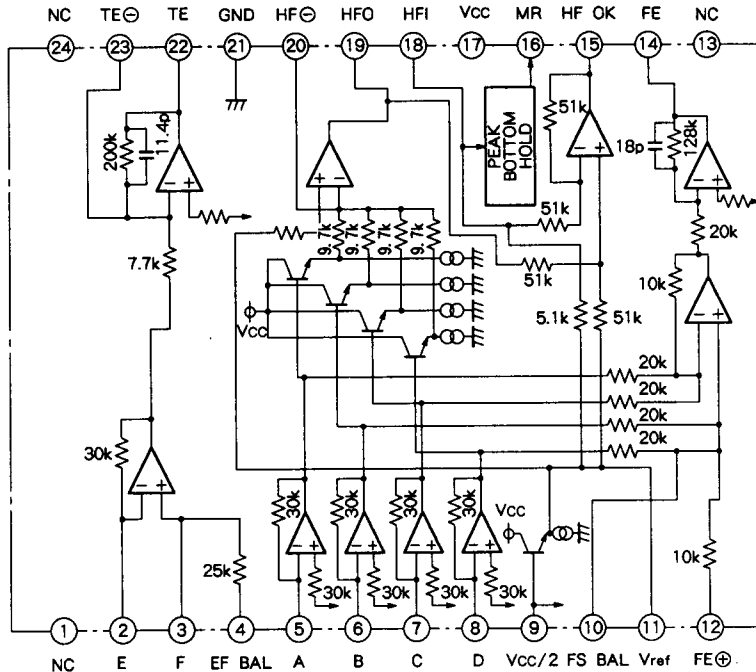
PIN CONFIGURATION (TOP VIEW)



RECOMMENDED OPERATING CONDITIONS

- Supply voltage range + 4.75 ~ + 5.25V
or ± 4.75 ~ ± 5.25V
Rated supply voltage + 5V or ± 5V

BLOCK DIAGRAM



Units Resistance : Ω
Capacitance : F

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

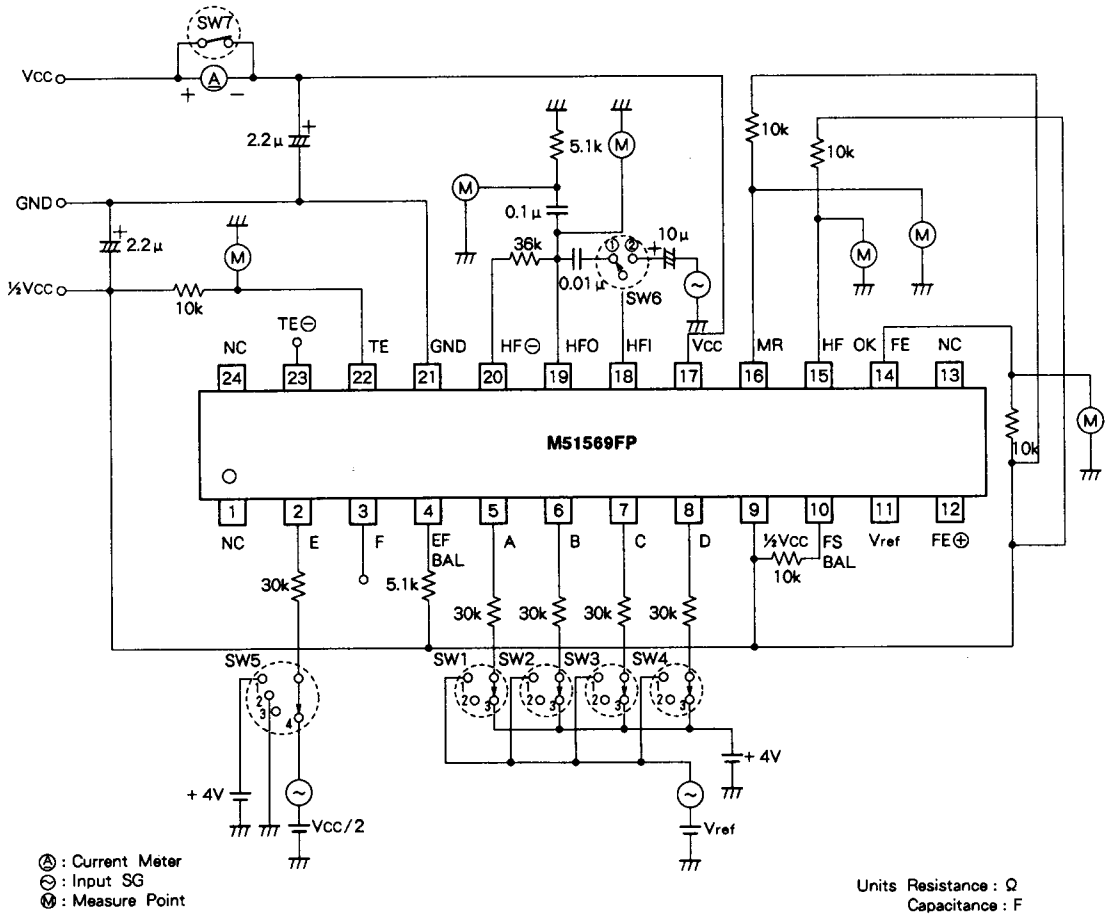
Symbol	Parameter	Conditions	Ratings	Unit
V _{cc}	Supply voltage		13	V
I _{cc}	Circuit current		60	mA
V _i	Input voltage		V _{cc} - 0.3	V
V _o	Output voltage		V _{cc} - 0.3	V
P _d	Power dissipation		540	mW
T _{opr}	Operating temperature		- 20 ~ + 75	°C
T _{stg}	Storage temperature		- 40 ~ + 125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C, V_{cc} = 5V)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I _{cc}	Circuit current	No signal		16.5	33	mA
G _{VHF}	HF output voltage	A~D input f = 1kHz, V _i = 67.5mV _{P-P}	0.9	1.0	1.1	V _{P-P}
f _{HF}	HF frequency	A~D input f = 2MHz, V _i = 67.5mV _{P-P}	- 5	- 2		dB
V _{HHF}	HF high output voltage		3.8	4.1		V
V _{OHF}	HF output offset voltage	Input open	- 120	0	+ 120	mV
G _{VFE}	FE output voltage	B + D input f = 1kHz, V _i = 156mV _{P-P}	0.7	1.0	1.3	V _{P-P}
V _{HAC}	HF high output voltage	R _L = 10k Ω	3.6	4.0		V
V _{LAC}	HF low output voltage	R _L = 10k Ω		0.5	1.2	V
V _{OFE}	Output offset voltage	Input open	- 65	0	+ 65	mV
G _{VTE}	TE output voltage	E input f = 1kHz V _i = 38.4mV _{P-P}	0.7	1.0	1.3	V _{P-P}
V _{HTE}	TE high output voltage	R _L = 10k Ω	3.6	4.0		V
V _{LE}	TE low output voltage	R _L = 10k Ω		0.5	1.2	V
V _{OTE}	Output offset voltage	Input open	- 160	0	+ 160	V
V _{HOK}	HFOK high output voltage		3.5	4.1		V
V _{LOK}	HFOK low output voltage	No signal		0	0.4	V
V _{HMR}	MR high output voltage	No signal	3.5	4.1		V
V _{LMR}	MR low output voltage			0	0.4	V

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TEST CIRCUIT



TYPICAL CHARACTERISTICS

THERMAL DERATING
 (MAXIMUM RATING)

