

# 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.

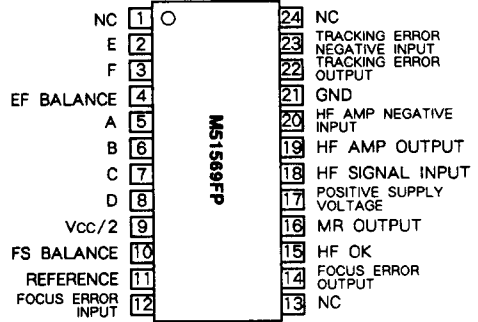
### FEATURES

- For 3 laser system
- Wide dynamic range of HF Amp. Output level at single supply voltage: 2.4V<sub>PP</sub> 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<sub>c</sub> = 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)



Outline 24P2Q-A

NC: NO CONNECTION

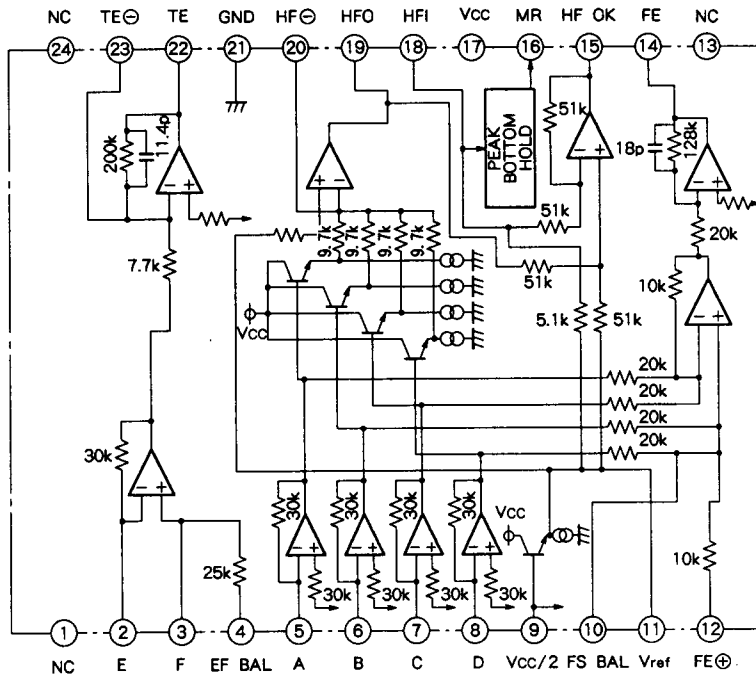
### RECOMMENDED OPERATING CONDITIONS

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

M51569FP

PREAMPLIFIER FOR OPTICAL PICKUP

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

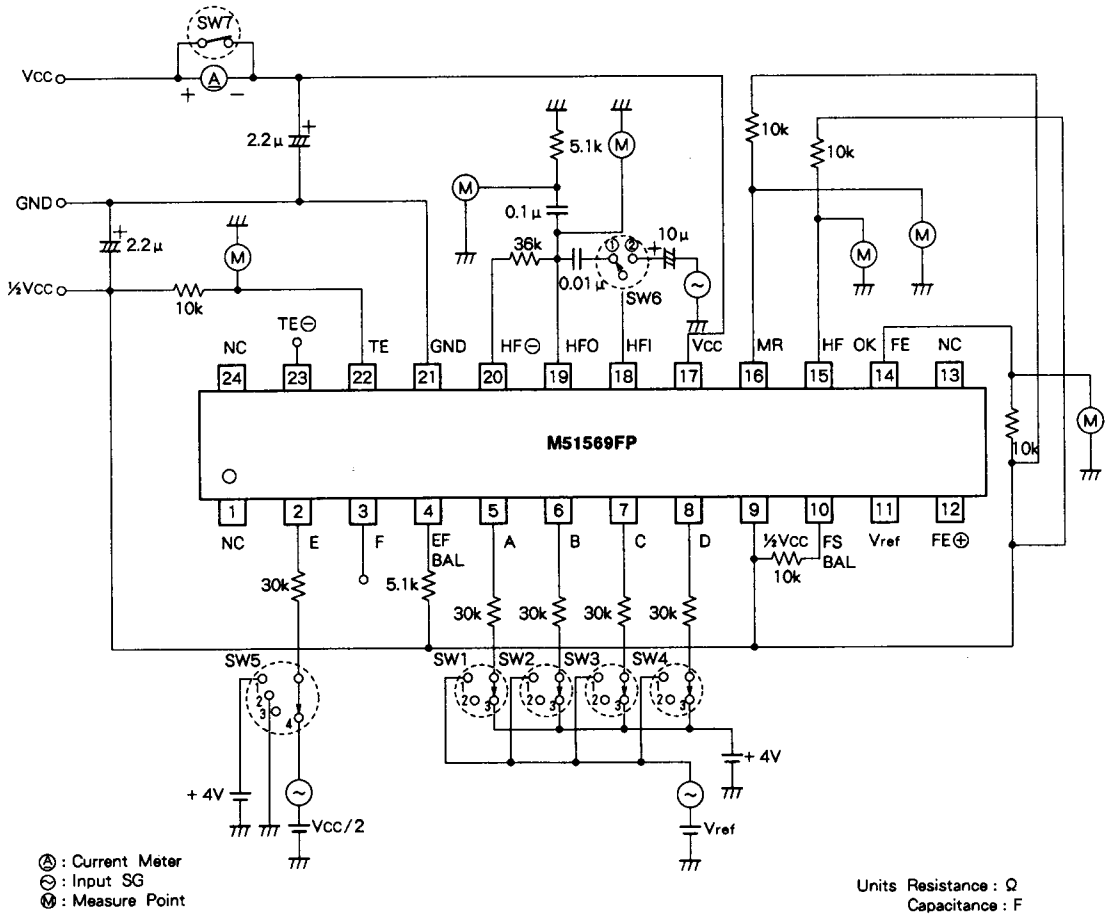
Symbol	Parameter	Conditions	Ratings	Unit
Vcc	Supply voltage		13	V
Icc	Circuit current		60	mA
Vi	Input voltage		Vcc - 0.3	V
Vo	Output voltage		Vcc - 0.3	V
Pd	Power dissipation		540	mW
Topr	Operating temperature		- 20~ + 75	°C
Tstg	Storage temperature		- 40~ + 125	°C

**ELECTRICAL CHARACTERISTICS** (Ta = 25°C, Vcc = 5V)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
Icc	Circuit current	No signal		16.5	33	mA
GVHF	HF output voltage	A~D input f = 1kHz, Vi = 67.5mVp-p	0.9	1.0	1.1	Vp-p
fHF	HF frequency	A~D input f = 2MHz, Vi = 67.5mVp-p	- 5	- 2		dB
VHHF	HF high output voltage		3.8	4.1		V
VOHF	HF output offset voltage	Input open	- 120	0	+ 120	mV
GVFE	FE output voltage	B + D input f = 1kHz, Vi = 156mVp-p	0.7	1.0	1.3	Vp-p
VHAC	HF high output voltage	RL = 10k Ω	3.6	4.0		V
VLAC	HF low output voltage	RL = 10k Ω		0.5	1.2	V
VOFE	Output offset voltage	Input open	- 65	0	+ 65	mV
GVTE	TE output voltage	E input f = 1kHz Vi = 38.4mVp-p	0.7	1.0	1.3	Vp-p
VHE	TE high output voltage	RL = 10k Ω	3.6	4.0		V
VLE	TE low output voltage	RL = 10k Ω		0.5	1.2	V
VOTE	Output offset voltage	Input open	- 160	0	+ 160	V
VHOK	HFOK high output voltage		3.5	4.1		V
VLOK	HFOK low output voltage	No signal		0	0.4	V
VHMR	MR high output voltage	No signal	3.5	4.1		V
VLMR	MR low output voltage			0	0.4	V

PREAMPLIFIER FOR OPTICAL PICKUP

TEST CIRCUIT



TYPICAL CHARACTERISTICS

THERMAL DERATING  
 (MAXIMUM RATING)

