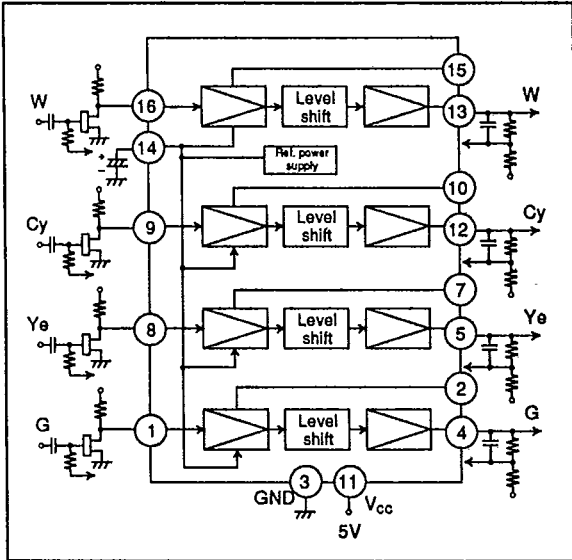# HA118002FP

T-77-17

Preamplifier for Video Cameras
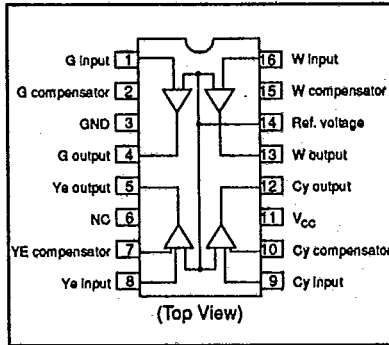
Functions

- Preamplifier
- 4 on-chip channels for white, cyan, yellow and green

Block Diagram

Pin Arrangement

(Top View)

Ordering Information

Type No.	Package
HA118002FP	FP-16

Absolute Maximum Ratings

Item	Symbol	Rating	Unit
Supply Voltage*1	V_{CC}	7	V
Power Dissipation	P_T	120	mW
Operating Temperature	t_{opr}	−10 to +75	°C
Storage Temperature	V_{stg}	−55 to +125	°C

Note: *1 Operating supply voltage range is −0.25 to 5 +0.5V

HA118002FP

T-77-17

Electrical Characteristics (V$_{CC}$ = 5V, Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition	Applicable Terminal
Supply Current	I$_{CC}$	8.5	12.5	16.5	mA	Pin 11 supply current	11, 3
Input DC Voltage	E$_{in}$	2.3	2.45	2.60	V		1, 8, 9, 16
Output DC Voltage	E$_{out}$	—	2.5	—	V		4, 5, 12, 13
Intermediate Terminal Voltage	V$_M$	3.4	3.6	3.8	V		2, 7, 10, 15
Intermediate Terminal Resistance	R$_M$	0.97	1.3	1.63	kΩ		2, 7, 10, 15
Bypass Terminal Voltage	V$_B$	1.62	1.72	1.82	V		14
Output Impedance	Z$_{out}$	—	100	150	Ω		4, 5, 12, 13
Gain	G$_V$	43	45	47	dB	Input = 5mV$_{p-p}$ 500kHz	4, 5, 12, 13
Channel-to-channel Gain Difference	ΔG$_V$	−1.5	0	1.5	dB	Gain phase deviation	4, 5, 12, 13
Frequency Characteristics	f$_c$	—	10	—	MHz	30pF of pins 2, 7, 10, 15 eliminated. −3dB frequency for 200kHz.	4, 5, 12, 13
Input Conversion Noise Voltage	V$_n$	—	1.8	—	nV/√Hz	Bandwidth 0 to 3 MHz	4, 5, 12, 13

Functional Description

Figure 1 shows the equivalent circuit diagram of one channel (G channel) of the HA118002FP. The 2-stage amplifier of the emitter ground, DC level shift and emitter follower make up a simple configuration. Pin 2 is a phase compensation terminal, while pin 14 is the IC's internal reference source used by all four channels. The DC bias of the output terminal (pin 4) is 2.5V, so an input FET gate bias should be installed.
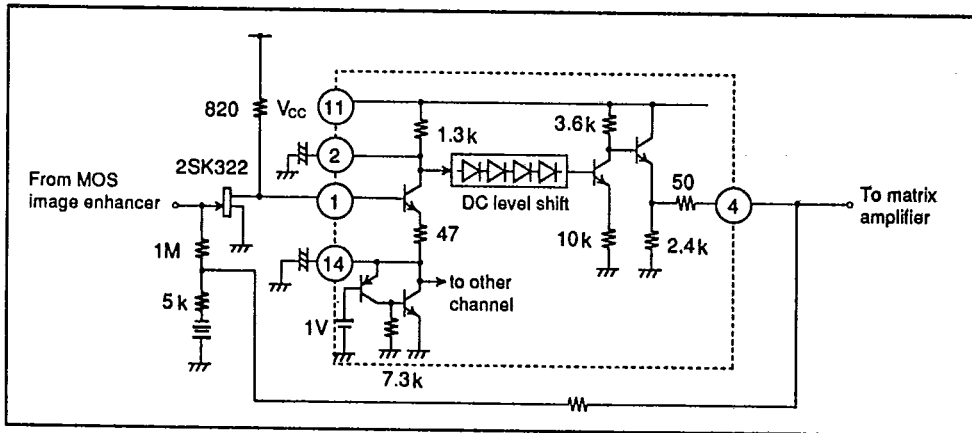

Figure 1. Equivalent Circuit Diagram (G Channel)