

November 1991

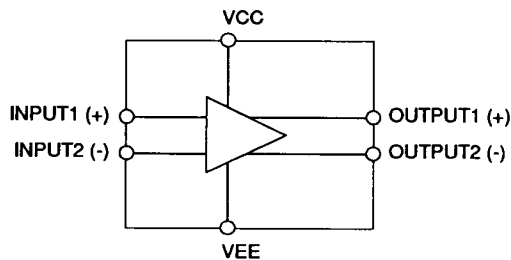
DESCRIPTION

The SSI 32H116A is a high performance differential amplifier applicable for use as a preamplifier for the magnetic servo thin film head in Winchester disk drives.

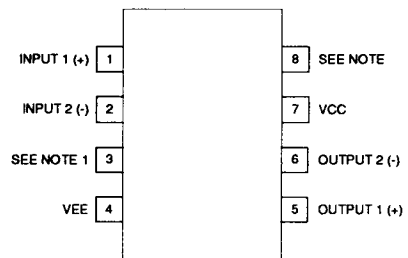
FEATURES

- **Narrow gain range**
- **50 MHz bandwidth**
- **IBM 3370/3380-compatible performance**
- **Operates on either IBM-compatible voltages (8.3V) or OEM-compatible (10V)**
- **Packages Include 8-pin Plastic DIP and SON**
- **SSI 32H1162 available to operate with a 12V power supply**

BLOCK DIAGRAM



PIN DIAGRAM



8-Pin PDIP, SON

CAUTION: Use handling procedures necessary for a static sensitive component.

SSI 32H116A

Differential Amplifier

ELECTRICAL SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNIT
Power Supply Voltage (VCC-VEE)	12	V
SSI 32H1162	14	V
Differential Input Voltage	± 1	V
Storage Temperature Range	-65 to 150	°C
Operating Ambient Temperature (TA)	15 to 60	°C
Operating Junction Temperature (Tj)	15 to 125	°C
Output Voltage	VCC -2.0 to VCC +0.4	V

RECOMMENDED OPERATING CONDITIONS

PARAMETER	CONDITIONS	MIN	NOM	MAX	UNIT
Supply Voltage (VCC-VEE)		7.45	8.3	9.15	V
		9.0	10.0	11.0	V
	SSI 32H1162 only	10.8	12.0	13.2	V
Input Signal Vin			1		mVpp
Ambient Temp TA		+15		+65	°C

ELECTRICAL CHARACTERISTICS

Tj = 15 °C to 125 °C, (VCC-VEE) = 7.9V to 10.5V (to 13.2V for 32H1162)

PARAMETER	CONDITIONS	MIN	NOM	MAX	UNIT
Gain (Differential)	Vin = 1mVpp, TA = 25 °C, f = 1 MHz	200	250	310	mV/mV
Bandwidth (3dB)	Vin = 1mVpp, CL = 15 pF	20	50		MHz
Gain Sensitivity (Supply)				1.0	%/V
Gain Sensitivity (Temp.)	15 °C < TA < 55 °C		-0.16		%/C
Input Noise Voltage	Input Referred, Rs = 0		0.7	0.94	nV/√Hz
Input Capacitance (Differential)	Vin = 0, f = 5 MHz		40	60	pF
Input Resistance (Differential)			200		Ω
Common Mode Rejection Ratio Input Referred	Vin = 100 mVpp, f = 1 MHz	60	70		dB
Power Supply Rejection Ratio Input Referred	VEE + 100 mVpp, f = 1 MHz	46	52		dB

SSI 32H116A

Differential Amplifier

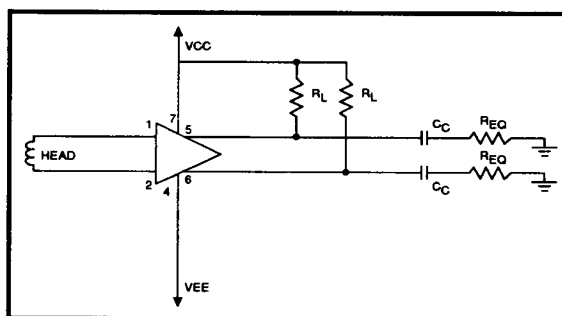
ELECTRICAL CHARACTERISTICS (Continued)

PARAMETER	CONDITIONS	MIN	NOM	MAX	UNIT
Input Dynamic Range (Differential)	AC input voltage where gain falls to 90% of its small signal gain value, $f = 5\text{MHz}$	± 0.75			mV
Output Offset Voltage (Differential)	$V_{in} = 0$	-400		+400	mV
Output Voltage (Common Mode)	Inputs shorted together and Outputs shorted together	$V_{CC}-0.45$	$V_{CC}-0.6$	$V_{CC}-1.0$	V
Single Ended Output Capacitance				10	pF
Power Supply Current	$V_{CC}-V_{EE} = 9.15\text{V}$		28	40	mA
	$V_{CC}-V_{EE} = 11\text{V}$		29	42	mA
	$V_{CC}-V_{EE} = 13.2\text{V}$, 32H1162 only		39	50	mA
Input DC Voltage	Common Mode		$V_{EE} + 2.6$		V
Input Resistance	Common Mode		80		Ω

6

APPLICATIONS INFORMATION

CONNECTION DIAGRAM



RECOMMENDED LOAD CONDITIONS

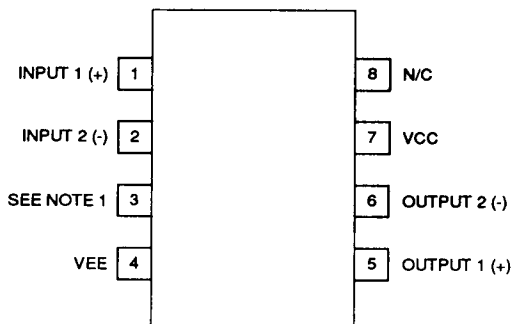
1. Input is directly coupled to the head
2. C_c 's are AC coupling capacitors
3. R_L 's are DC bias and termination resistors, 100Ω recommended
4. R_{EQ} represents equivalent load resistance
5. Ceramic capacitors ($0.1\ \mu\text{F}$) are recommended for good power supply noise filtering

SSI 32H116A

Differential Amplifier

PACKAGE PIN DESIGNATIONS

(Top View)



8-Pin PDIP, SON

NOTE : Pin must be left open and not connected to any circuit etc.

ORDERING INFORMATION

PART DESCRIPTION	ORDERING NUMBER	PACKAGE MARK
SSI 32H116A Differential Amplifier		
8-Pin SON	32H116A-CN	H116A
8-Pin PDIP	32H116A-CP	32H116A-CP
SSI 32H1162A		
8-Pin SON	32H1162A-N	H1162A
8-Pin PDIP	32H1162A-CP	32H1162A-CP

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