

Dimensions (mm)

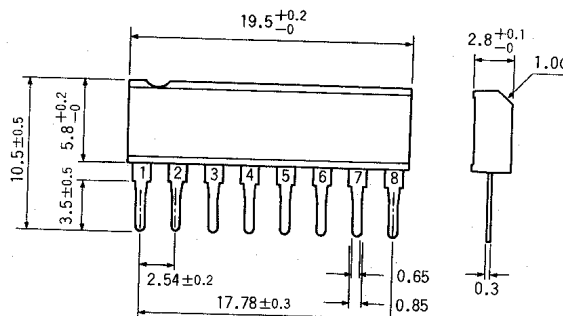


Fig. 1

Block Diagram

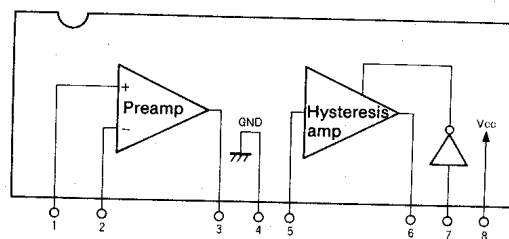


Fig. 2

The BA6305 is a monolithic integrated circuit consisting of a high-speed response waveform-shaping preamplifier designed for use as a VTR control amplifier. It is suitable for use as a control amplifier in applications such as sequence shooting and simple editing, in which a fast switch from the record mode to the playback mode is required. A preamplifier with pre-charge used to provide high-speed response and a noise-eliminating hysteresis amplifier which converts the control signal to a short waveform output have been packaged in a single chip. In addition, the BA6305 has been designed to accommodate various tape speeds, including special playback functions, and a 2-stage switchable hysteresis width is provided to establish S/N ratio.

Features

1. Fast response time from the record mode with low-level input to playback control signal generation.
2. High-gain amplifier
3. High accuracy hysteresis width and Schmitt circuit with hysteresis to provide an even higher S/N ratio.
4. Hysteresis comparator level is switchable to accommodate the control amplifier level.
5. Housed in a compact SIP 8-pin package.

Applications

1. VTR Control amplifiers
2. VTR FG amplifiers
3. VTR DTP amplifiers
4. Other preamplifier and hysteresis amplifier applications

Absolute Maximum Ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V _{CC}	15	V
Power dissipation	P _d	400	mW
Operating temperature	T _{opr}	-20~+70	°C
Storage temperature	T _{stg}	-55~+125	°C

* Derating is done at 4.0mW/°C for operation above T_a = 25°C.

Electrical Characteristics (Unless otherwise noted, T_a = 25°C, V_{CC} = 9V)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Supply voltage	V _{CC}	4.5	—	13.0	V	
Supply current	I _{CC}	0.6	1.5	2.6	mA	
Preamp bias voltage	V _{Bpre}	1.0	1.3	1.6	V	
Small-signal preamp input resistance	R _{INS}	2.1	4.4	9.0	kΩ	V _{IN} = 1.0V
Large-signal preamp input resistance	R _{EN}	8.0	24	72	kΩ	V _{IN} = 5.0V
Preamp bias input current	I _{Bpre}	—	30	600	nA	
Preamp output level	V _{opre}	2.0	2.4	—	V _{p-p}	
Preamp open-loop voltage gain	G _{VO}	64.0	72.5	—	dB	R _{NF} = 330kΩ
Preamp input-referred noise voltage	V _{Npre}	—	3.4	6.0	μVrms	DIN Audio R _g = 22k
Schmitt trigger input bias voltage	V _{Bsh}	1.6	2.0	2.4	V	
Schmitt circuit hysteresis width I	V _{hys I}	±70	—	±130	mV _{OP}	
Schmitt circuit hysteresis width II	V _{hys II}	±200	—	±360	mV _{OP}	
Schmitt circuit output level	V _{ohys}	5.1	6.6	—	V _{p-p}	R _L = 10kΩ

The risetime for switching from REC mode to PB mode is 1s maximum.

When power is applied, the risetime is 3s maximum.