

FG / CTL amplifier

BA6305 / BA6305F

The BA6305 and BA6305F are fast-response wave-shaping preamplifiers for use in VCR CTL amplifiers. They meet the fast REC mode to PB mode response required in VCR CTL amplifiers. The ICs contain a fast-response preamplifier (with precharge function) and a noise-rejecting hysteresis amplifier that converts the CTL signal to a rectangular-wave output. The hysteresis width can be switched between two levels to maintain the S / N ratio, and provide compatibility with various tape speeds.

●Applications

VCR CTL amplifiers

VCR FG amplifiers

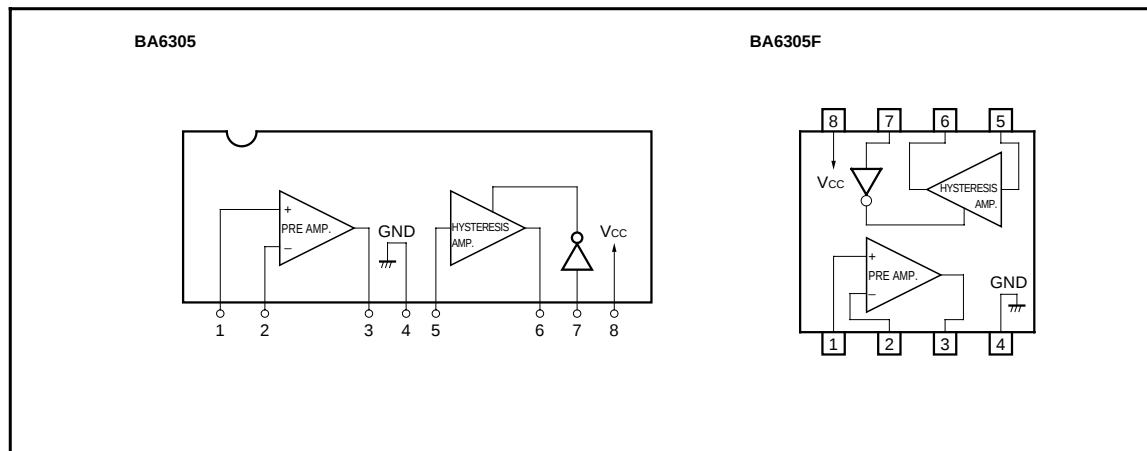
VCR DTP amplifiers

Other preamplifier and hysteresis amplifier applications

●Features

- 1) Fast response from strong input when recording to CTL signal playback when playing.
- 2) High gain.
- 3) Schmitt trigger circuit ensures high S / N ratio, and accurate hysteresis width and level.
- 4) The hysteresis comparator level can be switched to suit the CTL amplifier level.
- 5) Compact SIP8 pin and SOP8 pin packages.

●Block diagram



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Power 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

* Reduced by 4.0mW for each increase in Ta of 1°C over 25°C.

●Electrical characteristics (unless otherwise noted, Ta = 25°C and V_{CC} = 9V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Operating voltage	V _{CC}	4.5	—	13.0	V	—
Quiescent current	I _Q	0.6	1.5	2.6	mA	—
Preamplifier bias voltage	V _{B pre}	1.0	1.3	1.6	V	—
Small-signal preamplifier input resistance	R _{INS}	20	30	40	kΩ	V _{IN} = 1.0V
Large-signal preamplifier input resistance	R _{EN}	2.1	4.4	9.0	kΩ	V _{IN} = 5.0V
Preamplifier bias input current	I _{B pre}	—	30	300	nA	—
Preamplifier output level	V _{O pre}	2.0	2.4	—	V _{P-P}	—
Preamplifier open loop voltage gain	G _{VO}	64.0	72.5	—	dB	R _{NF} = 330kΩ
Preamplifier input conversion noise voltage	V _{N pre}	—	3.4	12.0	μV _{rms}	DIN Audio R _g = 2.2kΩ
Schmitt circuit input bias potential	V _{B hys}	1.6	2.0	2.4	V	—
Schmitt circuit hysteresis width 1	V _{hys 1}	± 70	± 90	± 130	mV _{O-P}	—
Schmitt circuit hysteresis width 2	V _{hys 2}	± 200	± 250	± 360	mV _{O-P}	—
Schmitt circuit output level	V _{ohys}	5.1	6.6	—	V _{P-P}	R _L = 20kΩ

The switching time from REC mode to PB mode is 1 sec. (Max.), and the power on start up time is 3 sec. (Max.).

●External dimensions (Units: mm)

