

FLANCHER 5

(dark)

FLANCHER 5 DARK (FL5D) is a voltage controlled, stereo, analog, delay device. It can produce reverb-style effect due to its very progressive feedback, but can also do chorus/wobble effects. It will also self-oscillate, in a pleasant/musical way.

POWER SUPPLY (PSU)

A 9V DC negative center power supply rated at 410mA is required to operate the FL5D. Higher current ratings are acceptable, but lower currents will not suffice.

AUDIO I/O

FL5D supports various input configurations:

For stereo signals, you can use either two mono jacks in the INPUT L and INPUT R, or a stereo jack in the INPUT L.

For mono signals, connect your mono cable directly to INPUT R.

The signal is automatically duplicated to both channels.

For output, you can utilize both OUTPUT L and OUTPUT R with two mono jacks or a stereo jack connected to OUTPUT L.

VCAs

FL5D utilizes precision VCAs to simultaneously control audio gain for both left and right channels.

Adjust the DRY for the dry signal, WET for the BBD Delay signal, and FEED for the feedback amount.

Be careful when using the FEED knob at high values.

This can cause sudden and unpredictable build-ups of sound and volume, potentially leading to self-oscillation and distortion.

DELAY TIME

As the left and right channels operate independently, you can adjust the delay time for each side using the TIME L (left) and TIME R (right) knobs.

The delay time ranges from 16ms to 315ms (32ms to 630ms with DOUBLE enabled). Note that the quality of the delay signal degrades beyond 350ms providing a Alisasing/Lo-Fi effect.

LFO

FL5D's LFO offers variable waveform modulation, morphing from a triangle wave to a sine wave via the TRI/SINE knob.

The triangle wave has double the amplitude of the sine wave. The LFO frequency/period ranges from 20 seconds up to audio rate frequencies (500Hz) and is adjusted using the FREQ knob.

Control the depth of LFO applied to TIME L and TIME R with the DEPTH L and DEPTH R knobs respectively.

The PHASE knob allows for de-phasing of the LFO applied to TIME L compared to TIME R.

The Red/Green LEDs indicate the relationship between the LFOs on the left and right sides.

CV CONTROL

Each knob can be independently controlled by providing 0/5V signals to the appropriate mini-jack.

Plugging in a jack turns the associated knob into an attenuator, with a full range when turned clockwise.

For 0/10V signals, set the knob to NOON or lower.

An Expression Pedal to CV (0/5V) converter is provided for musicians not using modular synths.

Connect your Expression Pedal to the EXP input and use the provided mini-jack cable to control desired knobs.

DOUBLE

The DOUBLE button toggles between two time ranges:

Led On: 16ms to 315ms

Led Off: 32ms to 630ms

Switching between ranges produces octave up/down effects.

External control via DOUBLE input jack is possible.

X-FEEDBACK

The X-FEEDBACK button selects between normal and cross-feedback modes:

Normal: Each channel has its own feedback path.

Cross-feedback: Left channel output is fed into the right channel input and vice versa, creating a ping-pong delay effect.

MN3005

4096-STAGE LONG DELAY BBD

General description

The MN3005 is a world's first 4096-stage long delay BBD, 8 times longer than 512-stage BBD manufactured by using a P-channel low noise silicon gate process.

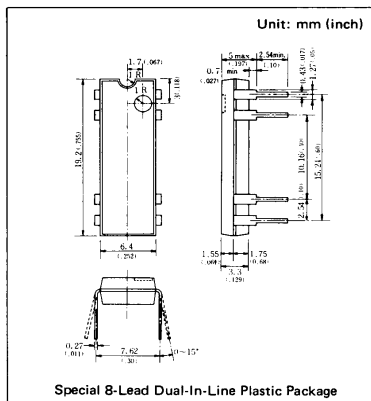
Long signal delay time 205ms can be obtained at clock frequency 10KHz. S/N is 75dB. S/N has been improved by more than 20dB in comparing with 8-connected 512-stage BBD's. The MN3005 is suitably used for reverberation and echo effects in electronic musical instruments such as electronic organ, guitar amplifier and music synthesizer which need long delay time.

Features

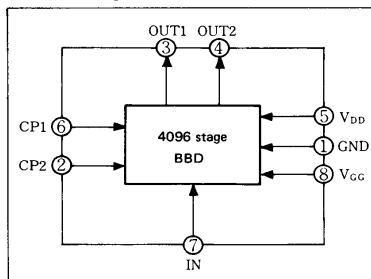
- 1 chip 4096 stage and wide range of variable delay times: 20.48 ~ 204.8ms.
- High S/N in spite of multi-stage and wide dynamic range: S/N \approx 75dB typ.
- No insertion loss since the loss occurring in the signal transfer is corrected by the MOS capacity of input and output. $L_i = 0$ dB.
- High integration and high reliability by using P channel low noise silicon gate process.
- Special 8 lead dual-in-line plastic package.

Applications

- Reverberation and echo effects in echo microphone and stereo equipment.
- Chorus effect in electronic musical instruments.
- Variable or fixed delay of analog signals.
- Telephone time compression and delay line for voice communication systems, etc.



Block Diagram



Quick Reference Data

Item	Symbol	Value	Unit
Supply Voltage	V_{DD}, V_{GG}	$-15, V_{DD} + 1$	V
Signal Delay Time	t_D	20.48~204.8	ms
Total Harmonic Distortion	THD	1	%
Signal to Noise Ratio	S/N	75	dB