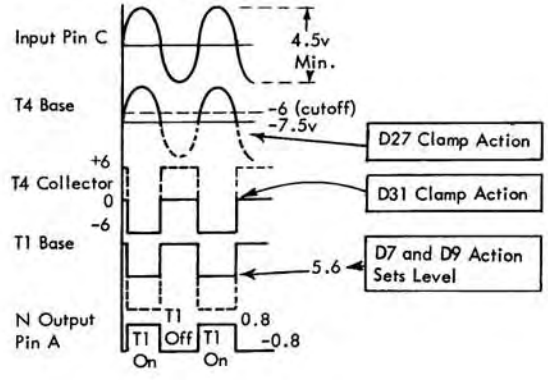
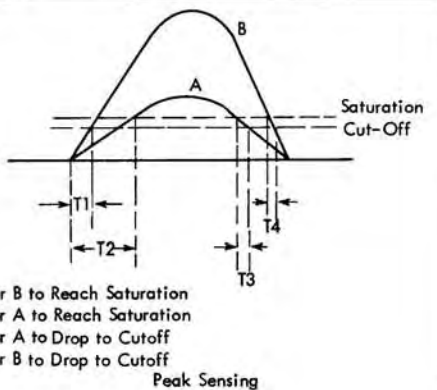


Card Code	Part No.
GT--	371525



Drum Sense Shaper

The drum sense shaper (ds) consists of a two-stage capacity-coupled amplifier operated at 250kc. The sinusoidal signal from a drum sense amplifier is converted to an N line square wave which drives current mode logic blocks.

To insure a reliable square wave output, the sinusoidal input must have a peak-to-peak swing of at least 4.5v.

Circuit Description

In the quiescent state, the base level of T4 is set at -7.5v by the input divider networks. T1 is on and has its base level near +5.6v. The output at pin A is +0.8v.

When the input signal is applied to pin C, the negative voltage swing coupled through C30 is clamped to -7.5v by D27 and D26. The use of D26 (1.5v stabistor) keeps the base of T1 1.5v more negative than the emitter, and makes the circuit less sensitive to noise variations. As the signal level increases above -6v, T4 turns on and its collector voltage drops to -6v. This negative swing is cou-

pled through C3 and is clamped at the +5.6v level by D7 and D9 (.4v stabistor). This clamping action prevents T1 from operating in saturation and results in a quicker turn-off time. The output from T1 stays at +0.8v.

When T4 is cut off, its collector voltage increases toward +6v but is clamped at 0v by D31, resulting in a fast rise time of the signal. This sharp positive swing is coupled to the base of T1 and is sufficient to reverse-bias and cut off the 033 transistor. With T1 off, the output drops to -0.8v.

Because of slight variations in the amplitude of the input signals to T4, "peak sensing" is used and the turn-off (instead of turn-on) of T4 is used to control T1 and give more accurate timings of the output. The figure above shows that the time for T4 to reach saturation is dependent on the input signal amplitude, whereas once T4 is driven into saturation, the time required for the transistor to drop from saturation to cut-off is relatively the same regardless of the input signal amplitude.