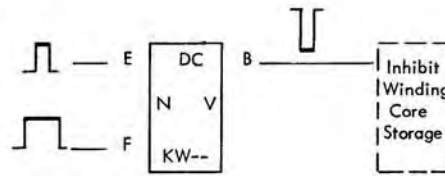
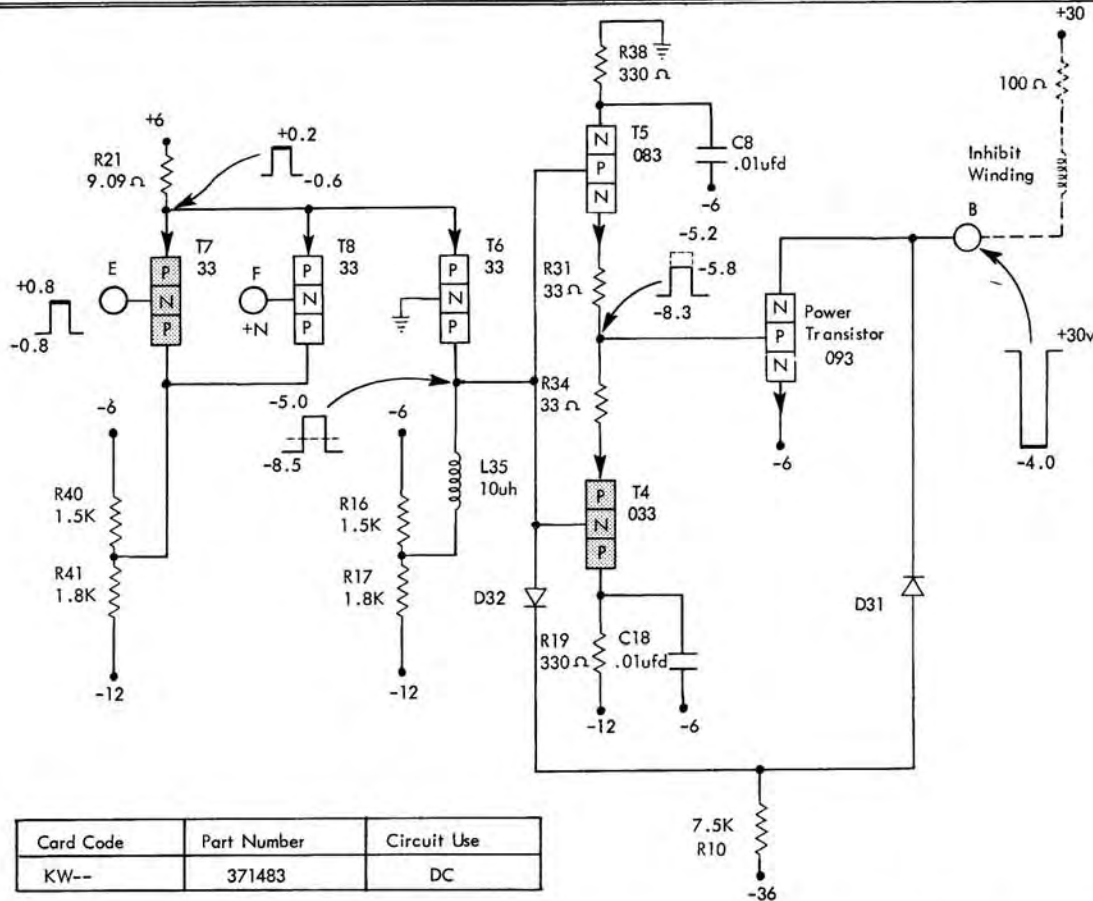


Possible ALD Configurations



Logic Application



Card Code	Part Number	Circuit Use
KW--	371483	DC

**Core Driver**

The kw-card is a core driver circuit that drives the inhibit windings used in the core storage area. This driver circuit is made up of a basic + AND circuit, a complementary emitter follower, and a power diffused transistor. Coincidence of + N levels is required at both inputs to permit output current to flow.

*Circuit Description*

Assume the starting condition noted. With a -N input at pin E, the base of T7 becomes more forward-biased than the reference transistor T6. T7 turns on and current flow through R21 clamps the emitter voltage of T7 to -0.6v. T8 and T6 are reverse-biased off. With T6 held off, its collector voltage nears -8.5v set by current flow from the -36v supply through R10, D32 and L5 into the collector coupling network. T4 is forward-biased on, and T5 is reverse-biased off. The base of the power transistor follows this swing (-8.3v) and holds the power transistor off as its emitter is returned to -6v.

No current flows into the inhibit winding, and the output seen at pin B at this time is near 30v.

When coincidence of +N levels occurs at both input pins, T7 and T8 become reverse-biased off and T6 is biased on. Current flow through T6 causes the base voltage of the complementary emitter followers to increase to -5.0v. T5 now becomes forward-biased and T4 is reverse biased. Conduction through T5 quickly raises the base voltage of the power transistor toward -5.2v. When the base voltage reaches -5.8v, the power transistor turns on and supplies current (up to 400ma) to the inhibit windings. D32 and D31 clamp the output voltage swing to about -4v. This prevents the power transistor from operating in saturation and results in faster switching of the output current pulses. The complementary emitter follower is used to provide sharp rise and fall characteristics of the voltage signal controlling the power transistor, which also reduces the switching time.

*Application*

This driver is used in the core storage area of the IBM 7070 Data Processing System.