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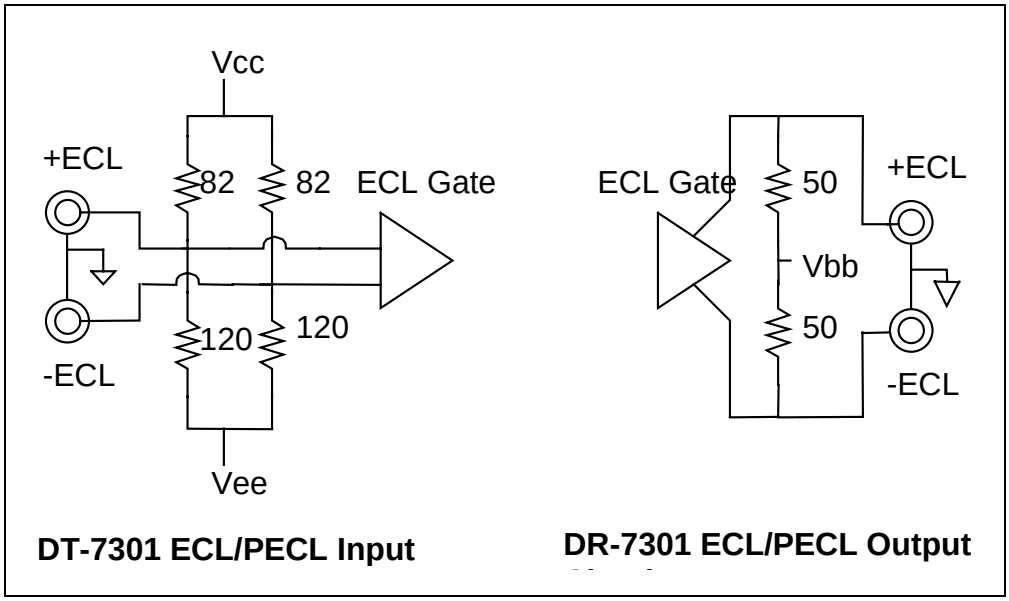
Application Note:
Interfacing of the DT/DR-7301

ECL or PECL Interface

The interface to the DT-7301, DR-7301 can be set into the ECL/PECL mode via front panel dip switch. When in this mode the interface is a biased configuration as shown below:



In ECL mode, the voltages are as follows;

Vcc = 0 Volts
Vee = -5 Volts
Vbb = -2 Volt

In PECL mode, the voltages are as follows;

Vcc = +5 Volts
Vee = 0 Volts
Vbb = +2 Volt

Since the input is already biased, the unit should be driven by a standard emitter follower or directly from an ECL gate. The combined input impedance is 50 ohms. Similarly, the output is biased from a Vbb source that is of the correct value for either ECL or PECL as selected. The output load should also be 50 ohms.

Any coaxial cables used to interconnect ECL or PECL signals should have characteristic impedance of 50 ohms. Using cables of any other impedance may result in ringing or distorted signals.

TTL Interface

The interface to the DT-7301, DR-7301 can be set into the TTL mode via front panel dip switch. The input impedance for the DT-7301 is DIP switch selectable for either standard TTL or 50 ohm TTL. In the standard mode, the input is a TTL gate with approximately 3K of resistance. In the 50 ohm TTL mode the input impedance is 50 ohms and any source has to be able to produce at least 2.4 volts across this impedance.

The output impedance of the DR-7301 in the standard mode will drive a standard TTL load. The output impedance in the 50 ohm mode is designed to drive a 50 ohm load.

Note that the standard mode operates at an impedance of 3K ohms. This may effect the speed of operation depending on the connecting cables used. When high speed is desired, the 50 ohm mode should always be used and any coaxial cables should have a characteristic impedance of 50 ohms. Using cables of any other impedance may result in ringing or distorted signals.