

# F10153 • F10553

## F10K VOLTAGE COMPENSATED ECL

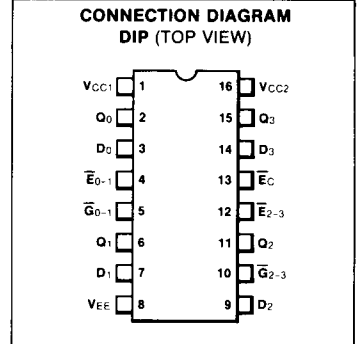
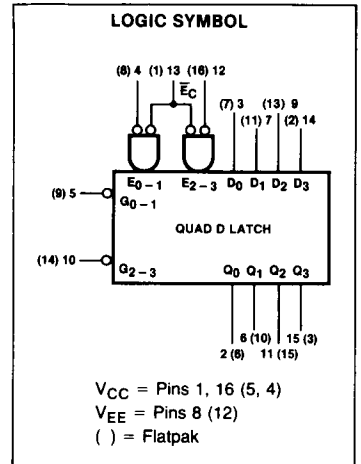
### QUAD D LATCH

**DESCRIPTION** – The F10153/F10553 are high-speed Quad D Latches consisting of four bistable latch circuits with D type inputs and gated Q outputs. The gated outputs allow direct wiring to a bus. When the enable is LOW, outputs will follow the D inputs. Information is latched on the positive-going transition of the enable.

- HIGH-SPEED . . . 4 ns TYP
- GATED OUTPUTS
- VOLTAGE COMPENSATED
- ENABLE IN PAIRS OR COMMON
- HIGH Z INPUTS

**PIN NAMES**

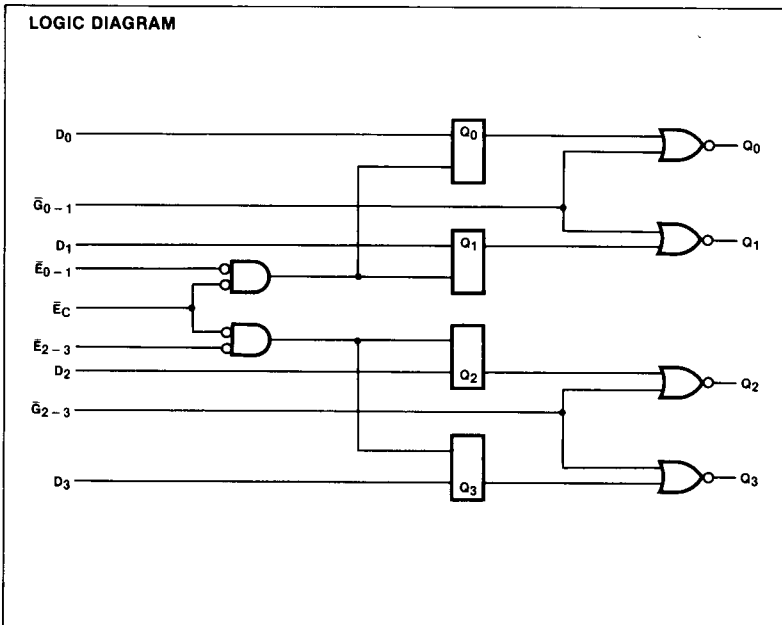
- $D_n$  Data Inputs
- $\overline{G}_n$  Gated Inputs (Active LOW)
- $\overline{E}_C$  Common Enable (Active LOW)
- $\overline{E}_n$  Enables (Active LOW)
- $Q_n$  Outputs



**TRUTH TABLE**

| $\overline{G}$ | $\overline{E}$ | D | $Q_{t+1}$ |
|----------------|----------------|---|-----------|
| H              | X              | X | L         |
| L              | H              | X | $Q_t$     |
| L              | L              | L | L         |
| L              | L              | H | H         |

H = HIGH Voltage Level  
 L = LOW Voltage Level  
 X = Don't Care  
 $E = E_C + E_n$



**DC CHARACTERISTICS:**  $V_{EE} = -5.2 \text{ V}$ ,  $V_{CC} = \text{GND}$

| SYMBOL   | CHARACTERISTIC  | LIMITS |     |                   | UNITS         | $T_A$ | CONDITIONS         |
|----------|---|--------|-----|-------------------|---------------|-------|--------------------|
|          |   | B      | TYP | A                 |               |       |                    |
| $I_{IH}$ | Input Current HIGH<br>$D_n$<br>$E_{0-1}, E_{2-3}$<br>$E_C, G_n$ |        |     | 245<br>265<br>350 | $\mu\text{A}$ | 25°C  | $V_{IN} = V_{IHA}$ |
| $I_{EE}$ | Power Supply Current  | -75    | -60 |                   | $\text{mA}$   | 25°C  | Inputs Open        |

**SWITCHING CHARACTERISTICS:**  $V_{EE} = -5.2 \text{ V}$ ,  $T_A = 25^\circ\text{C}$

| SYMBOL             | CHARACTERISTIC   | LIMITS |     |     | UNITS | CONDITIONS   |
|--------------------|--|--------|-----|-----|-------|--------------|
|                    |  | B      | TYP | A   |       |              |
| $t_{PLH}, t_{PHL}$ | Propagation Delay  | 1.0    | 4.0 | 5.4 | ns    | See Figure 1 |
| $t_{TLH}, t_{THL}$ | Output Transition Time<br>LOW to HIGH, HIGH to LOW<br>20% to 80%, 80% to 20% | 1.5    | 2.0 | 3.5 | ns    |              |

**SWITCHING CIRCUIT AND WAVEFORMS**

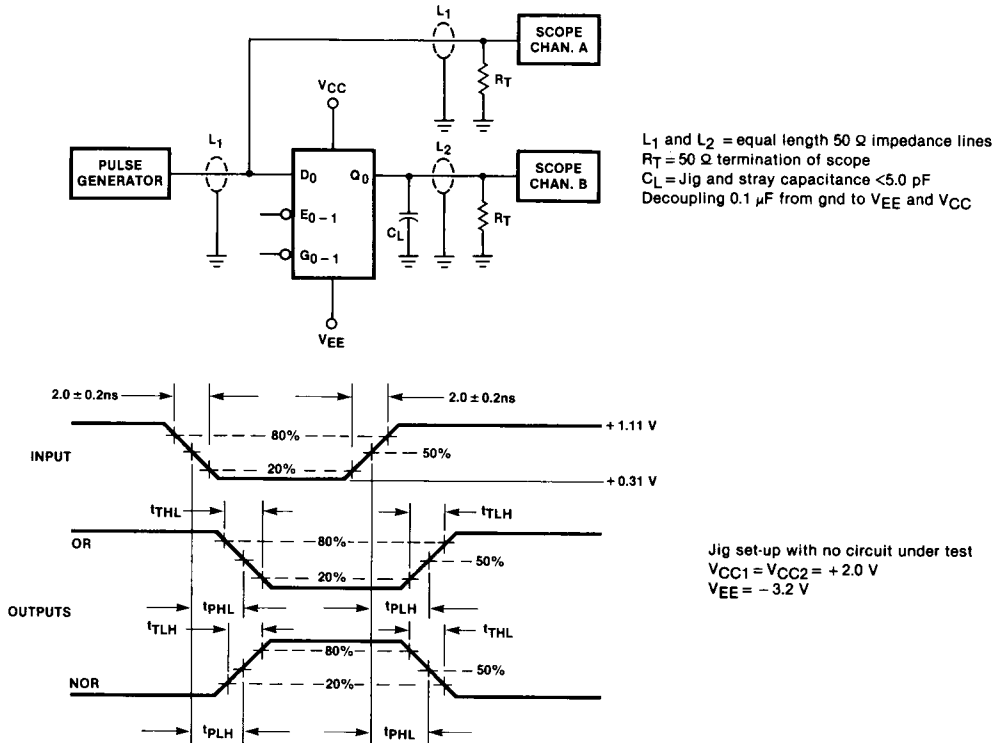


Fig.1