

A54HSC670

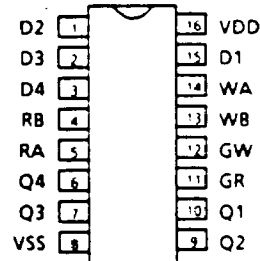
4 x 4 Register Files with Tri-state Outputs (Preliminary data)

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General Description

The A54HSC670 is a register storing 4 words of 4 bits each. Separate on-chip decoding is provided for addressing the four word locations to either write or retrieve data. This allows simultaneous writing into one location and reading from another location.

Pin Out



Function Tables

WRITE

| WRITE INPUTS | | | WORD | | | |
|--------------|----|----|-------|-------|-------|-------|
| WB | WA | GW | 1 | 2 | 3 | 4 |
| L | L | L | Q = D | Q0 | Q0 | Q0 |
| L | H | L | Q0 | Q = D | Q0 | Q0 |
| H | L | L | Q0 | Q0 | Q = D | Q0 |
| H | H | L | Q0 | Q0 | Q0 | Q = D |
| X | X | H | Q0 | Q0 | Q0 | Q0 |

Q0 = Level of Q before inputs were established

READ

| READ INPUTS | | | OUTPUTS | | | |
|-------------|----|----|---------|------|------|------|
| RB | RA | GR | Q1 | Q2 | Q3 | Q4 |
| L | L | L | W1D1 | W1D2 | W1D3 | W1D4 |
| L | H | L | W2D1 | W2D2 | W2D3 | W2D4 |
| H | L | L | W3D1 | W3D2 | W3D3 | W3D4 |
| H | H | L | W4D1 | W4D2 | W4D3 | W4D4 |
| X | X | H | Z | Z | Z | Z |

H = high level. L = low level. Z = high impedance

Switching Characteristics

$V_{CC} = 5V$, $T_{MAX} = 125^{\circ}C$, $C_L = 50pF$

| Symbol | Parameter | Typ. | Max. | Units |
|-----------|-------------------|------------------|------|-------|
| t_{PLH} | Propagation delay | | 25 | ns |
| t_{PHL} | Read select to Q | | 25 | ns |
| t_{PLH} | Propagation delay | | 35 | ns |
| t_{PHL} | Write Enable to Q | | 35 | ns |
| t_{PLH} | Propagation delay | | 35 | ns |
| t_{PHL} | Data to Q | | 35 | ns |
| t_{pZH} | Propagation delay | | 25 | ns |
| t_{pZL} | | | 25 | ns |
| t_{pHZ} | | Read Enable to Q | | 25 |
| t_{pLZ} | | | 25 | ns |

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