

absolute maximum ratings

| | |
|--------------------------------------|-----------------|
| V_{CC} | 7.0V |
| Input Voltage | 5.5V |
| Operating Temperature Range | |
| DM54154 | -55°C to +125°C |
| DM74154 | 0°C to 75°C |
| Storage Temperature Range | -65°C to +150°C |
| Lead Temperature (Soldering, 10 sec) | 300°C |

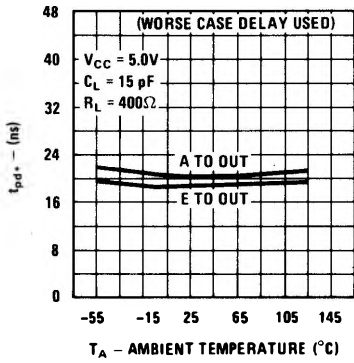
electrical characteristics (Note 1)

| PARAMETER | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|--|-----|------|------|---------|
| Input Diode Clamp Voltage | $V_{CC} = 5.0V, T_A = 25^\circ C$ $I_{IN} = -12 mA$ | | | -1.5 | V |
| Logical "1" Input Voltage | DM54154 $V_{CC} = 4.5V$ | 2.0 | | | V |
| | DM74154 $V_{CC} = 4.75V$ | | | | |
| Logical "0" Input Voltage | DM54154 $V_{CC} = 4.5V$ | | | 0.8 | V |
| | DM74154 $V_{CC} = 4.75V$ | | | | |
| Logical "1" Output Voltage | DM54154 $V_{CC} = 4.5V$ | 2.4 | 3.4 | | V |
| | DM74154 $V_{CC} = 4.75V, I_{OUT} = -800 \mu A$ | | | | |
| Logical "0" Output Voltage | DM54154 $V_{CC} = 4.5V$ | | 0.25 | 0.4 | V |
| | DM74154 $V_{CC} = 4.75V, I_{OUT} = 16 mA$ | | | | |
| Logical "1" Input Current | DM54154 $V_{CC} = 5.5V$ | | | 40 | μA |
| | DM74154 $V_{CC} = 5.25V, V_{IN} = 2.4V$ | | | | |
| Logical "1" Input Current | DM54154 $V_{CC} = 5.5V$ | | | 1 | mA |
| | DM74154 $V_{CC} = 5.25V, V_{IN} = 5.5V$ | | | | |
| Logical "0" Input Current | DM54154 $V_{CC} = 5.5V$ | | | -1.6 | mA |
| | DM74154 $V_{CC} = 5.25V, V_{IN} = 0.4V$ | | | | |
| Short Circuit Current | DM54154 $V_{CC} = 5.5V$ | -20 | -30 | -55 | mA |
| | DM74154 $V_{CC} = 5.25V$ | -18 | | -57 | mA |
| Supply Current | DM54154 $V_{CC} = 5.5V$ | | 34 | 49 | mA |
| | DM74154 $V_{CC} = 5.25V$ | | 34 | 56 | mA |
| Propagation Delay Time to Logical "1" from A,B,C or D | $V_{CC} = 5.0V, C_L = 15 pF, R_L = 400\Omega$ | | 18 | 36 | ns |
| Propagation Delay Time to Logical "0" from A,B,C or D | $V_{CC} = 5.0V, C_L = 15 pF, R_L = 400\Omega$ | | 21 | 33 | ns |
| Propagation Delay Time to Logical "1" from Strobe | $V_{CC} = 5.0V, C_L = 15 pF, R_L = 400\Omega$ | | 17 | 30 | ns |
| Propagation Delay Time to Logical "0" from Strobe | $V_{CC} = 5.0V, C_L = 15 pF, R_L = 400\Omega$ | | 18 | 27 | ns |

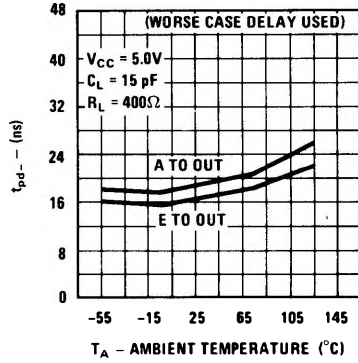
Note 1: Min/Max limits apply across the guaranteed temperature range unless otherwise specified. All typicals are given for $V_{CC} = 5.0V$ and $T_A = 25^\circ C$. Min/Max apply to absolute values.

typical performance characteristics

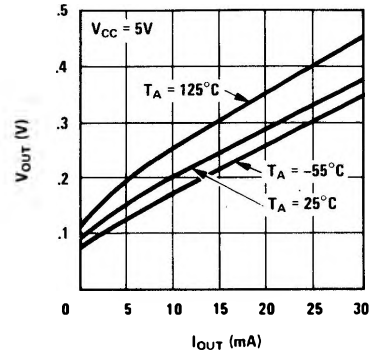
Propagation Delay to a Logical "0" (t_{pd0}) vs Temperature



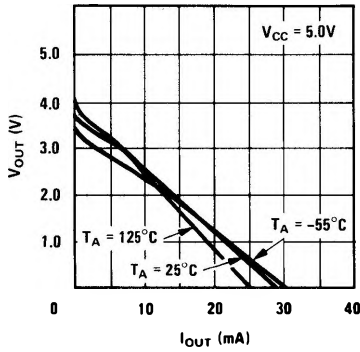
Propagation Delay to a Logical "1" (t_{pd1}) vs Temperature



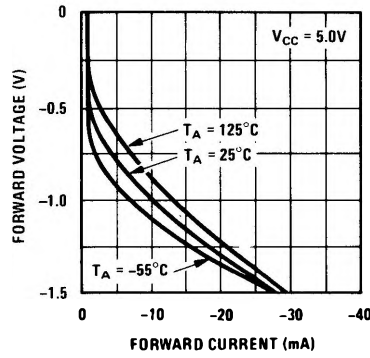
Logical "0" Output Voltage vs Sink Current



Logical "1" Output Voltage vs Source Current

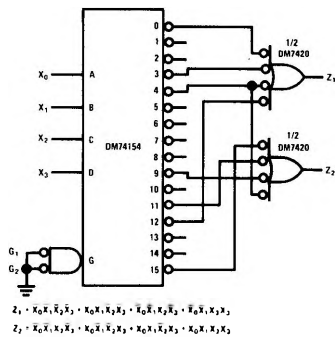


Input Clamp Diode

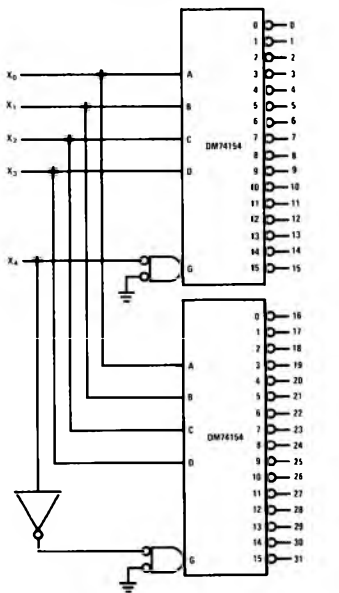


typical applications

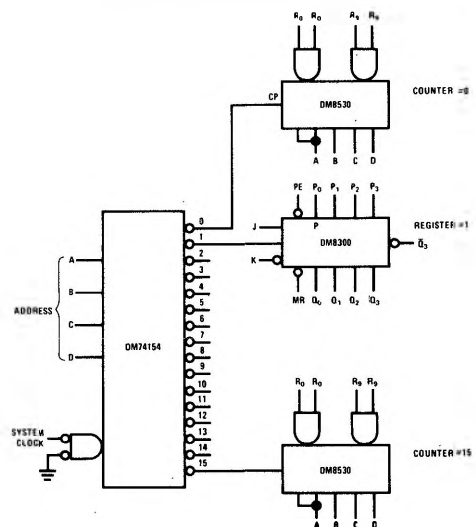
DM74154 Used as a Minterm Generator



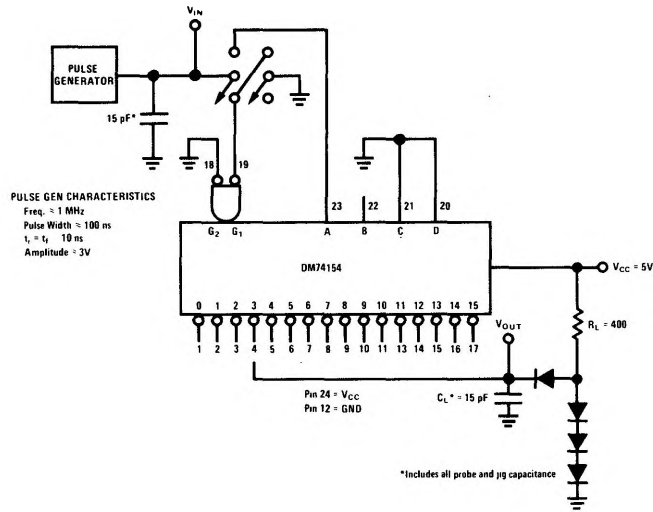
DM74154 Expanded to Perform 1 Out of 32 Decode Function



Demultiplexing System Clock



ac test circuit



switching time waveforms

