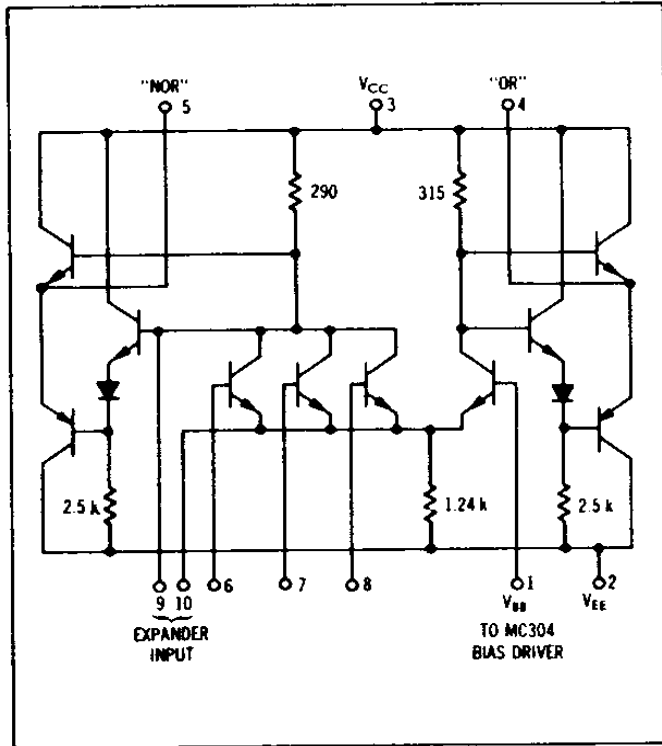
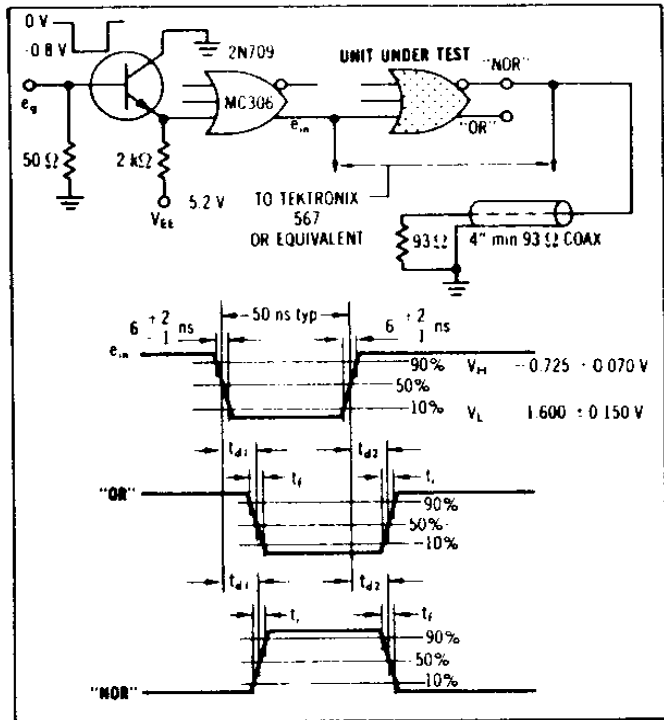


MC315

Line driver for driving lines of 93 ohms or greater while providing the positive logic "NOR" function and its complement simultaneously.



SWITCHING TIMES TEST CIRCUIT AND WAVEFORMS



ELECTRICAL CHARACTERISTICS

| Characteristic                   | Test Conditions<br>Vdc ± 1% |                              |                          |                            |                           |                           | Test Limits |                     |                  |                  |                  |                  | Unit            |               |
|----------------------------------|-----------------------------|------------------------------|--------------------------|----------------------------|---------------------------|---------------------------|-------------|---------------------|------------------|------------------|------------------|------------------|-----------------|---------------|
|                                  | @ Test Temperature          |                              |                          |                            |                           |                           | -55°C       |                     | +25°C            |                  | +125°C           |                  |                 |               |
|                                  | V <sub>H</sub><br>Pin No    | V <sub>I max</sub><br>Pin No | V <sub>L</sub><br>Pin No | V <sub>EE</sub><br>Pin No  | V <sub>BB</sub><br>Pin No | I <sub>DD</sub><br>Pin No | Min         | Max                 | Min              | Max              | Min              | Max              |                 |               |
| Power Supply Drain Current       | —                           | —                            | —                        | 2.6, 7, 8                  | 1                         | 4, 5                      | 3           | 45                  | —                | 45               | —                | 45               | mAdc            |               |
| Input Current                    | 6, 7, 8                     | —                            | —                        | 2.7, 8<br>2.6, 8<br>2.6, 7 | 1<br>1<br>1               | —<br>—<br>—               | 3<br>3<br>3 | —<br>—<br>—         | —<br>—<br>—      | 100<br>↓         | —<br>—<br>—      | —<br>—<br>—      | μAdc<br>↓       |               |
| "NOR" Logical "1" Output Voltage | —                           | —                            | 6, 7, 8                  | 2.7, 8<br>2.6, 8<br>2.6, 7 | 1<br>1<br>1               | 4.5<br>4.5<br>4.5         | 3<br>3<br>3 | 0.805<br>↓<br>↓     | -0.945<br>↓<br>↓ | -0.670<br>↓<br>↓ | 0.795<br>↓<br>↓  | 0.505<br>↓<br>↓  | 0.655<br>↓<br>↓ | Vdc<br>↓<br>↓ |
| "NOR" Logical "0" Output Voltage | —                           | 6, 7, 8                      | —                        | 2.7, 8<br>2.6, 8<br>2.6, 7 | 1<br>1<br>1               | 4.5<br>4.5<br>4.5         | 3<br>3<br>3 | -1.540<br>↓<br>↓    | 1.850<br>↓<br>↓  | 1.450<br>↓<br>↓  | -1.750<br>↓<br>↓ | -1.320<br>↓<br>↓ | 1.675<br>↓<br>↓ | Vdc<br>↓<br>↓ |
| "OR" Logical "1" Output Voltage  | —                           | —                            | 6, 7, 8                  | 2.7, 8<br>2.6, 8<br>2.6, 7 | 1<br>1<br>1               | 4.5<br>4.5<br>4.5         | 3<br>3<br>3 | 0.805<br>↓<br>↓     | -0.945<br>↓<br>↓ | 0.670<br>↓<br>↓  | 0.795<br>↓<br>↓  | 0.505<br>↓<br>↓  | 0.655<br>↓<br>↓ | Vdc<br>↓<br>↓ |
| "OR" Logical "0" Output Voltage  | —                           | —                            | 6, 7, 8                  | 2.7, 8<br>2.6, 8<br>2.6, 7 | 1<br>1<br>1               | 4.5<br>4.5<br>4.5         | 3<br>3<br>3 | -1.540<br>↓<br>↓    | 1.850<br>↓<br>↓  | 1.450<br>↓<br>↓  | -1.750<br>↓<br>↓ | -1.320<br>↓<br>↓ | 1.675<br>↓<br>↓ | Vdc<br>↓<br>↓ |
| Switching Times                  | Pulse In                    | Pulse Out                    | —                        | —                          | —                         | —                         | —           | Typ                 | Max              | Typ              | Max              | Typ              | Max             | ns            |
| Propagation Delay Time           | 6                           | 5                            | —                        | 2.7, 8                     | 1                         | —                         | 3           | t <sub>d1</sub> (5) | 10.0             | 20.0             | 10.0             | 15.0             | 30.0            | ↓             |
|                                  | 6                           | 4                            | —                        | 2.7, 8                     | 1                         | —                         | 3           | t <sub>d1</sub> (4) | 12.0             | 25.0             | 12.0             | 17.0             | 34.0            |               |
|                                  | 6                           | 5                            | —                        | 2.7, 8                     | 1                         | —                         | 3           | t <sub>d1</sub> (5) | 12.0             | 25.0             | 12.0             | 25.0             | 30.0            |               |
|                                  | 6                           | 4                            | —                        | 2.7, 8                     | 1                         | —                         | 3           | t <sub>d1</sub> (4) | 10.0             | 20.0             | 10.0             | 11.0             | 25.0            |               |
| Rise Time                        | 6                           | 5                            | —                        | 2.7, 8                     | 1                         | —                         | 3           | t <sub>r</sub> (5)  | 13.0             | 25.0             | 13.0             | 16.0             | 31.0            |               |
|                                  | 6                           | 4                            | —                        | 2.7, 8                     | 1                         | —                         | 3           | t <sub>r</sub> (4)  | 10.0             | 20.0             | 10.0             | 14.5             | 26.0            |               |
| Fall Time                        | 6                           | 5                            | —                        | 2.7, 8                     | 1                         | —                         | 3           | t <sub>f</sub> (5)  | 15.0             | 35.0             | 15.0             | 20.0             | 40.0            |               |
|                                  | 6                           | 4                            | —                        | 2.7, 8                     | 1                         | —                         | 3           | t <sub>f</sub> (4)  | 15.0             | 35.0             | 15.0             | 20.0             | 40.0            |               |

Pins not listed are left open. ⊙ Output is loaded with a 93-ohm resistor.