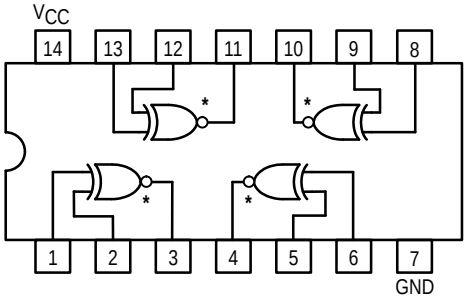
MOTOROLA

# QUAD 2-INPUT EXCLUSIVE NOR GATE

## SN54/74LS266

**QUAD 2-INPUT EXCLUSIVE NOR GATE**

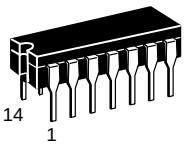
**LOW POWER SCHOTTKY**



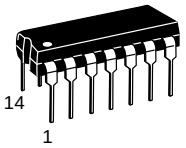

*OPEN COLLECTOR OUTPUTS

**TRUTH TABLE**

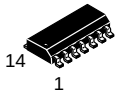
| IN | | OUT |
|---|---|---|
| **A** | **B** | **Z** |
| L | L | H |
| L | H | L |
| H | L | L |
| H | H | H |




**J SUFFIX**
CERAMIC
CASE 632-08




**N SUFFIX**
PLASTIC
CASE 646-06




**D SUFFIX**
SOIC
CASE 751A-02

**ORDERING INFORMATION**

| | |
|---|---|
| SN54LSXXXJ | Ceramic |
| SN74LSXXXN | Plastic |
| SN74LSXXXD | SOIC |

**GUARANTEED OPERATING RANGES**

| Symbol | Parameter | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{CC}$ | Supply Voltage | 54<br>74 | 4.5<br>4.75 | 5.0<br>5.0 | 5.5<br>5.25 | V |
| $T_A$ | Operating Ambient Temperature Range | 54<br>74 | –55<br>0 | 25<br>25 | 125<br>70 | °C |
| $V_{OH}$ | Output Voltage — High | 54, 74 | | | 5.5 | V |
| $I_{OL}$ | Output Current — Low | 54<br>74 | | | 4.0<br>8.0 | mA |

**DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE** (unless otherwise specified)

| Symbol | Parameter | | Limits Min | Limits Typ | Limits Max | Unit | Test Conditions | |
|---|---|---|---|---|---|---|---|---|
| $V_{IH}$ | Input HIGH Voltage | | 2.0 | | | V | Guaranteed Input HIGH Voltage for All Inputs | |
| $V_{IL}$ | Input LOW Voltage | 54 | | | 0.7 | V | Guaranteed Input LOW Voltage for All Inputs | |
| | | 74 | | | 0.8 | | | |
| $V_{IK}$ | Input Clamp Diode Voltage | | | –0.65 | –1.5 | V | $V_{CC}$ = MIN, $I_{IN}$ = –18 mA | |
| $V_{OH}$ | Output HIGH Voltage | 54, 74 | | | 100 | µA | $V_{CC}$ = MIN, $V_{OH}$ = MAX | |
| $V_{OL}$ | Output LOW Voltage | 54, 74 | | 0.25 | 0.4 | V | $I_{OL}$ = 4.0 mA | $V_{CC}$ = $V_{CC}$ MIN, $V_{IN}$ = $V_{IL}$ or $V_{IH}$ per Truth Table |
| | | 74 | | 0.35 | 0.5 | V | $I_{OL}$ = 8.0 mA | |
| $I_{IH}$ | Input HIGH Current | | | | 40 | µA | $V_{CC}$ = MAX, $V_{IN}$ = 2.7 V | |
| | | | | | 0.2 | mA | $V_{CC}$ = MAX, $V_{IN}$ = 7.0 V | |
| $I_{IL}$ | Input LOW Current | | | | –0.8 | mA | $V_{CC}$ = MAX, $V_{IN}$ = 0.4 V | |
| $I_{CC}$ | Power Supply Current | | | | 13 | mA | $V_{CC}$ = MAX | |

**AC CHARACTERISTICS** ($T_A$ = 25°C)

| Symbol | Parameter | Limits Min | Limits Typ | Limits Max | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| $t_{PLH}$<br>$t_{PHL}$ | Propagation Delay, Other Input LOW | | 18<br>18 | 30<br>30 | ns | $V_{CC}$ = 5.0 V<br>$C_L$ = 15 pF, $R_L$ = 2.0 kΩ |
| $t_{PLH}$<br>$t_{PHL}$ | Propagation Delay, Other Input HIGH | | 18<br>18 | 30<br>30 | ns | |