

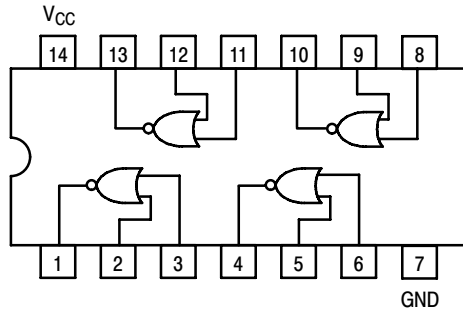
SN74LS02

QUAD 2-INPUT NOR GATE

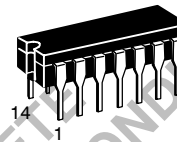


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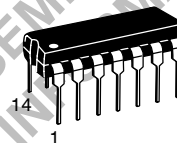
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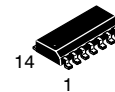
QUAD 2-INPUT NOR GATE LOW POWER SCHOTTKY



J SUFFIX
CERAMIC
CASE 632-08



N SUFFIX
PLASTIC
CASE 646-06



D SUFFIX
SOIC
CASE 751A-02

ORDERING INFORMATION

| | |
|-----------|---------|
| SN54LSXXJ | Ceramic |
| SN74LSXXN | Plastic |
| SN74LSXXD | SOIC |

GUARANTEED OPERATING RANGES

| Symbol | Parameter | | Min | Typ | Max | Unit |
|-----------------|-------------------------------------|--------|------|-----|------|------|
| V _{CC} | Supply Voltage | 54 | 4.5 | 5.0 | 5.5 | V |
| | | 74 | 4.75 | 5.0 | 5.25 | |
| T _A | Operating Ambient Temperature Range | 54 | -55 | 25 | 125 | °C |
| | | 74 | 0 | 25 | 70 | |
| I _{OH} | Output Current — High | 54, 74 | | | -0.4 | mA |
| I _{OL} | Output Current — Low | 54 | | | 4.0 | mA |
| | | 74 | | | 8.0 | |

SN74LS02

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

| Symbol | Parameter | Limits | | | Unit | Test Conditions | |
|-----------------|---|--------|-------|------|------|--|---|
| | | Min | Typ | Max | | | |
| 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 | 2.5 | 3.5 | V | V _{CC} = MIN, I _{OH} = MAX, V _{IN} = V _{IH} or V _{IL} per Truth Table | |
| | | 74 | 2.7 | 3.5 | V | | |
| V _{OL} | Output LOW Voltage | 54, 74 | | 0.25 | 0.4 | 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 | I _{OL} = 8.0 mA | |
| I _{IH} | Input HIGH Current | | | 20 | μA | V _{CC} = MAX, V _{IN} = 2.7 V | |
| | | | | 0.1 | mA | V _{CC} = MAX, V _{IN} = 7.0 V | |
| I _{IL} | Input LOW Current | | | -0.4 | mA | V _{CC} = MAX, V _{IN} = 0.4 V | |
| I _{OS} | Short Circuit Current (Note 1) | | -20 | -100 | mA | V _{CC} = MAX | |
| I _{CC} | Power Supply Current Total, Output HIGH | | | 3.2 | mA | V _{CC} = MAX | |
| | Total, Output LOW | | | 5.4 | | | |

Note 1: Not more than one output should be shorted at a time, nor for more than 1 second.

AC CHARACTERISTICS (T_A = 25°C)

| Symbol | Parameter | Limits | | | Unit | Test Conditions |
|------------------|---------------------------------|--------|-----|-----|------|---|
| | | Min | Typ | Max | | |
| t _{PLH} | Turn-Off Delay, Input to Output | | 10 | 15 | ns | V _{CC} = 5.0 V C _L = 15 pF |
| t _{PHL} | Turn-On Delay, Input to Output | | 10 | 15 | ns | |

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