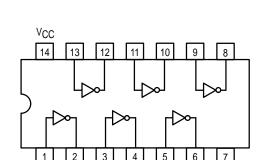


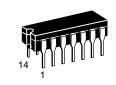
HEX INVERTER



GND

SN54/74LS04

HEX INVERTER LOW POWER SCHOTTKY



J SUFFIX CERAMIC CASE 632-08



N SUFFIX PLASTIC CASE 646-06



D SUFFIX SOIC CASE 751A-02

ORDERING INFORMATION

SN54LSXXJ SN74LSXXN SN74LSXXD Ceramic Plastic SOIC

GUARANTEED OPERATING RANGES

| Symbol | Parameter | | Min | Тур | Max | Unit |
|----------------|-------------------------------------|----------|-------------|------------|-------------|------|
| Vcc | Supply Voltage | 54 74 | 4.5 4.75 | 5.0 5.0 | 5.5 5.25 | V |
| T _A | Operating Ambient Temperature Range | 54 74 | -55 0 | 25 25 | 125 70 | °C |
| loh | Output Current — High | 54, 74 | | | -0.4 | mA |
| lOL | Output Current — Low | 54 74 | | | 4.0 8.0 | mA |

SN54/74LS04

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

| | | | Limits | | | | | |
|------------------|---|--------|--------|-------|------|--------------------------|---|--|
| Symbol | Parameter | | Min | Тур | Max | Unit | Test Conditions | |
| VIH | Input HIGH Voltage | | 2.0 | | | V | Guaranteed Input HIGH Voltage for All Inputs | |
| VIL | Input LOW Voltage 54 74 | 54 | | | 0.7 | V | Guaranteed Input LOW Voltage for All Inputs | |
| | | 74 | | | 0.8 | | | |
| VIK | Input Clamp Diode Voltage | _ | | -0.65 | -1.5 | V | $V_{CC} = MIN$, $I_{IN} = -18 \text{ mA}$ | |
| VOH | 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 | | |
| VOL | 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} |
| | | 74 | | 0.35 | 0.5 | V | I _{OL} = 8.0 mA | per Truth Table |
| | Input HIGH Current | | | | 20 | μΑ | $V_{CC} = MAX$, $V_{IN} = 2.7 V$ | |
| ¹ıн | | | | | 0.1 | mA | $V_{CC} = MAX$, $V_{IN} = 7.0 V$ | |
| I _I L | Input LOW Current | | | | -0.4 | mA | $V_{CC} = MAX$, $V_{IN} = 0.4 V$ | |
| los | Short Circuit Current (Note 1) | | -20 | | -100 | mA | V _{CC} = MAX | |
| Icc | Power Supply Current Total, Output HIGH Total, Output LOW | | | | 2.4 | mA V _{CC} = MAX | | |
| | | | | | 6.6 | | | |

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

AC CHARACTERISTICS $(T_A = 25^{\circ}C)$

| | | Limits | | Limits | | | |
|------------------|---------------------------------|--------|-----|--------|------|-------------------------|--|
| Symbol | Parameter | Min | Тур | Max | Unit | Test Conditions | |
| tPLH | Turn-Off Delay, Input to Output | | 9.0 | 15 | ns | V _{CC} = 5.0 V | |
| ^t PHL | Turn-On Delay, Input to Output | | 10 | 15 | ns | C _L = 15 pF | |