

**54/74132**  
**54S/74S132**  
**54LS/74LS132**

**QUAD 2-INPUT  
SCHMITT TRIGGER NAND GATE**

**ORDERING CODE:** See Section 9

| PKGS            | PIN OUT | COMMERCIAL GRADE  | MILITARY GRADE  | PKG TYPE |
|-----------------|---------|---|---|----------|
|                 |         | $V_{CC} = +5.0\text{ V} \pm 5\%$ ,<br>$T_A = 0^\circ\text{C to } +70^\circ\text{C}$ | $V_{CC} = +5.0\text{ V} \pm 10\%$ ,<br>$T_A = -55^\circ\text{C to } +125^\circ\text{C}$ |          |
| Plastic DIP (P) | A       | 74132PC, 74S132PC<br>74LS132PC  |   | 9A       |
| Ceramic DIP (D) | A       | 74132DC, 74S132DC<br>74LS132DC  | 54132DM, 54S132DM<br>54LS132DM  | 6A       |
| Flatpak (F)     | A       | 74132FC, 74S132FC<br>74LS132FC  | 54132FM, 54S132FM<br>54LS132FM  | 3I       |

**INPUT LOADING/FAN-OUT:** See Section 3 for U.L. definitions

| PINS    | 54/74 (U.L.)<br>HIGH/LOW | 54/74S (U.L.)<br>HIGH/LOW | 54/74LS (U.L.)<br>HIGH/LOW |
|---------|--------------------------|---------------------------|----------------------------|
| Inputs  | 1.0/0.75                 | 1.25/1.25                 | 0.5/0.25                   |
| Outputs | 20/10                    | 25/12.5                   | 10/5.0<br>(2.5)            |

**DC AND AC CHARACTERISTICS:** See Section 3\*

| SYMBOL                 | PARAMETER                                 | 54/74    | 54/74S     | 54/74LS  | UNITS | CONDITIONS  |
|------------------------|---|----------|------------|----------|-------|---|
|                        |   | Min Max  | Min Max    | Min Max  |       |   |
| $V_{T+}$               | Positive-going Threshold Voltage          | 1.5 2.0  | 1.6 1.9    | 1.4 1.9  | V     | $V_{CC} = +5.0\text{ V}$  |
| $V_{T-}$               | Negative-going Threshold Voltage          | 0.6 1.1  | 1.1 1.4    | 0.5 1.0  | V     | $V_{CC} = +5.0\text{ V}$  |
| $V_{T+} - V_{T-}$      | Hysteresis Voltage                        | 0.4      | 0.2        | 0.4      | V     | $V_{CC} = +5.0\text{ V}$  |
| $I_{T+}$               | Input Current at Positive-going Threshold | -0.43**  | -0.9 **    | -0.14**  | mA    | $V_{CC} = +5.0\text{ V}$ , $V_{IN} = V_{T+}$                          |
| $I_{T-}$               | Input Current at Negative-going Threshold | -0.56**  | -1.1 **    | -0.18**  | mA    | $V_{CC} = +5.0\text{ V}$ , $V_{IN} = V_{T-}$                          |
| $I_{OS}$               | Output Short Circuit Current              | -18 -55  |            |          | mA    | $V_{CC} = \text{Max}$ , $V_{OUT} = 0\text{ V}$                        |
| $I_{CCH}$<br>$I_{CCL}$ | Power Supply Current                      | 24<br>40 | 44<br>68   | 11<br>14 | mA    | $V_{IN} = \text{Gnd}$<br>$V_{IN} = \text{Open}$ $V_{CC} = \text{Max}$ |
| $t_{PLH}$<br>$t_{PHL}$ | Propagation Delay                         | 22<br>22 | 10.5<br>13 | 20<br>20 | ns    | Figs. 3-1, 3-4  |

\*DC limits apply over operating temperature range; AC limits apply at  $T_A = +25^\circ\text{C}$  and  $V_{CC} = +5.0\text{ V}$ . \*\*Typical Value

**CONNECTION DIAGRAM  
PINOUT A**

