



T-52-07-00

## DM74AS808B Hex 2-Input AND Driver

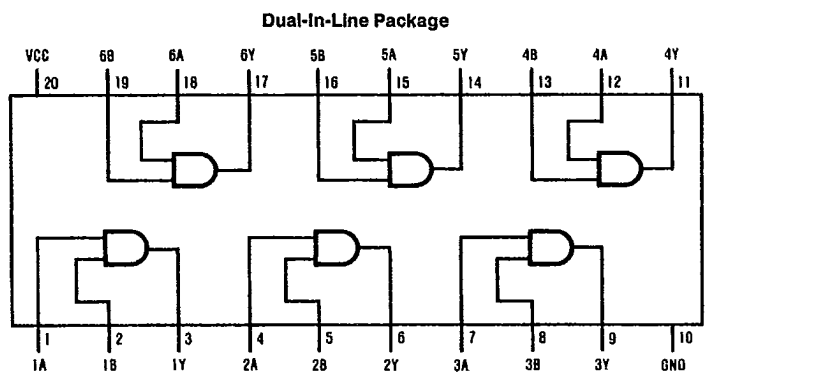
### General Description

This device contains six independent drivers, each of which performs the logic AND function. Each driver has increased output drive capability to allow the driving of high capacitive loads.

### Features

- Switching specifications at 50 pF
- Switching specifications guaranteed over full temperature and  $V_{CC}$  range
- Advanced oxide-isolated, ion-implanted Schottky TTL process
- Functionally and pin for pin compatible with advanced low power Schottky TTL counterpart

### Connection Diagram



Order Number DM74AS808BWM or DM74AS808BN  
See NS Package Number M20B or N20A

### Function Table

$$Y = AB$$

| Inputs |   | Output |
|--------|---|--------|
| A      | B | Y      |
| L      | L | L      |
| L      | H | L      |
| H      | L | L      |
| H      | H | H      |

H = High Logic Level  
L = Low Logic Level

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**Absolute Maximum Ratings**

|                                      |                 |
|--------------------------------------|-----------------|
| Supply Voltage                       | 7V              |
| Input Voltage                        | 7V              |
| Operating Free Air Temperature Range | 0°C to +70°C    |
| Storage Temperature Range            | -65°C to +150°C |
| Typical $\theta_{JA}$                |                 |
| N Package                            | 58.3 °C/W       |
| M Package                            | 154.0 °C/W      |

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Note: The "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the "Electrical Characteristics" table are not guaranteed at the absolute maximum ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

**Recommended Operating Conditions**

| Symbol   | Parameter                      | Min | Nom | Max | Units |
|----------|--------------------------------|-----|-----|-----|-------|
| $V_{CC}$ | Supply Voltage                 | 4.5 | 5   | 5.5 | V     |
| $V_{IH}$ | High Level Input Voltage       | 2   |     |     | V     |
| $V_{IL}$ | Low Level Input Voltage        |     |     | 0.8 | V     |
| $I_{OH}$ | High Level Output Current      |     |     | -48 | mA    |
| $I_{OL}$ | Low Level Output Current       |     |     | 48  | mA    |
| $T_A$    | Free Air Operating Temperature | 0   |     | 70  | °C    |

**Electrical Characteristics**

over recommended operating free air temperature range. All typical values are measured at  $V_{CC} = 5V$ ,  $T_A = 25^\circ C$ .

| Symbol   | Parameter                         | Conditions                                          | Min          | Typ  | Max  | Units   |
|----------|-----------------------------------|-----------------------------------------------------|--------------|------|------|---------|
| $V_{IK}$ | Input Clamp Voltage               | $V_{CC} = 4.5V$ , $I_I = -18\text{ mA}$             |              |      | -1.2 | V       |
| $V_{OH}$ | High Level Output Voltage         | $I_{OH} = -2\text{ mA}$ , $V_{CC} = 4.5V$ to $5.5V$ | $V_{CC} - 2$ |      |      | V       |
|          |                                   | $I_{OH} = -3\text{ mA}$ , $V_{CC} = 4.5V$           | 2.4          |      |      |         |
|          |                                   | $I_{OH} = \text{Max}$ , $V_{CC} = 4.5V$             | 2            |      |      |         |
| $V_{OL}$ | Low Level Output Voltage          | $V_{CC} = 4.5V$ , $I_{OL} = \text{Max}$             |              | 0.35 | 0.5  | V       |
| $I_I$    | Input Current @ Max Input Voltage | $V_{CC} = 5.5V$ , $V_{IH} = 7V$                     |              |      | 0.1  | mA      |
| $I_{IH}$ | High Level Input Current          | $V_{CC} = 5.5V$ , $V_{IH} = 2.7V$                   |              |      | 20   | $\mu A$ |
| $I_{IL}$ | Low Level Input Current           | $V_{CC} = 5.5V$ , $V_{IL} = 0.4V$                   |              |      | -0.5 | mA      |
| $I_O$    | Output Drive Current              | $V_{CC} = 5.5V$ , $V_O = 2.25V$                     | -50          | -135 | -200 | mA      |
| $I_{CC}$ | Supply Current                    | $V_{CC} = 5.5V$                                     |              |      |      |         |
|          |                                   | Outputs High                                        |              | 8    | 13   | mA      |
|          |                                   | Outputs Low                                         |              | 20   | 33   | mA      |

**Switching Characteristics** over recommended operating free air temperature range (Note 1)

| Symbol    | Parameter                                       | Conditions                                                             | Min | Max | Units |
|-----------|-------------------------------------------------|------------------------------------------------------------------------|-----|-----|-------|
| $t_{PLH}$ | Propagation Delay Time Low to High Level Output | $V_{CC} = 4.5V$ to $5.5V$<br>$R_L = 500\Omega$<br>$C_L = 50\text{ pF}$ | 1   | 6   | ns    |
| $t_{PHL}$ | Propagation Delay Time High to Low Level Output |                                                                        | 1   | 6   | ns    |

Note 1: See Section 1 for test waveforms and output load.