

# MC14001B Series

## B-Suffix Series CMOS Gates

MC14001B, MC14011B, MC14023B,  
MC14025B, MC14071B, MC14073B,  
MC14081B, MC14082B

The B Series logic gates are constructed with P and N channel enhancement mode devices in a single monolithic structure (Complementary MOS). Their primary use is where low power dissipation and/or high noise immunity is desired.

- Supply Voltage Range = 3.0 Vdc to 18 Vdc
- All Outputs Buffered
- Capable of Driving Two Low-power TTL Loads or One Low-power Schottky TTL Load Over the Rated Temperature Range.
- Double Diode Protection on All Inputs Except: Triple Diode Protection on MC14011B and MC14081B
- Pin-for-Pin Replacements for Corresponding CD4000 Series B Suffix Devices

### MAXIMUM RATINGS (Voltages Referenced to $V_{SS}$ ) (Note 1)

| Symbol               | Parameter                                         | Value                   | Unit |
|----------------------|---------------------------------------------------|-------------------------|------|
| $V_{DD}$             | DC Supply Voltage Range                           | - 0.5 to +18.0          | V    |
| $V_{in}$ , $V_{out}$ | Input or Output Voltage Range (DC or Transient)   | - 0.5 to $V_{DD} + 0.5$ | V    |
| $I_{in}$ , $I_{out}$ | Input or Output Current (DC or Transient) per Pin | $\pm 10$                | mA   |
| $P_D$                | Power Dissipation, per Package (Note 2)           | 500                     | mW   |
| $T_A$                | Ambient Temperature Range                         | - 55 to +125            | °C   |
| $T_{stg}$            | Storage Temperature Range                         | - 65 to +150            | °C   |
| $T_L$                | Lead Temperature (8-Second Soldering)             | 260                     | °C   |

1. Maximum Ratings are those values beyond which damage to the device may occur.
2. Temperature Derating:  
Plastic "P and D/DW" Packages: - 7.0 mW/°C From 65°C To 125°C

This device contains protection circuitry to guard against damage due to high static voltages or electric fields. However, precautions must be taken to avoid applications of any voltage higher than maximum rated voltages to this high-impedance circuit. For proper operation,  $V_{in}$  and  $V_{out}$  should be constrained to the range  $V_{SS} \leq (V_{in} \text{ or } V_{out}) \leq V_{DD}$ .

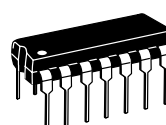
Unused inputs must always be tied to an appropriate logic voltage level (e.g., either  $V_{SS}$  or  $V_{DD}$ ). Unused outputs must be left open.



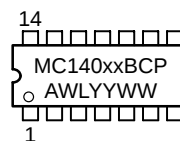
ON Semiconductor®

<http://onsemi.com>

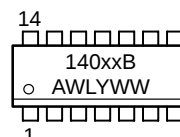
### MARKING DIAGRAMS



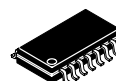
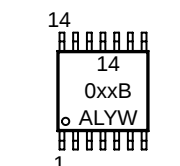
PDIP-14  
P SUFFIX  
CASE 646



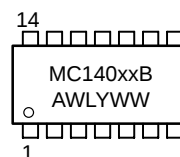
SOIC-14  
D SUFFIX  
CASE 751A



TSSOP-14  
DT SUFFIX  
CASE 948G



SOEIAJ-14  
F SUFFIX  
CASE 965



xx = Specific Device Code  
A = Assembly Location  
WL, L = Wafer Lot  
YY, Y = Year  
WW, W = Work Week

### DEVICE INFORMATION

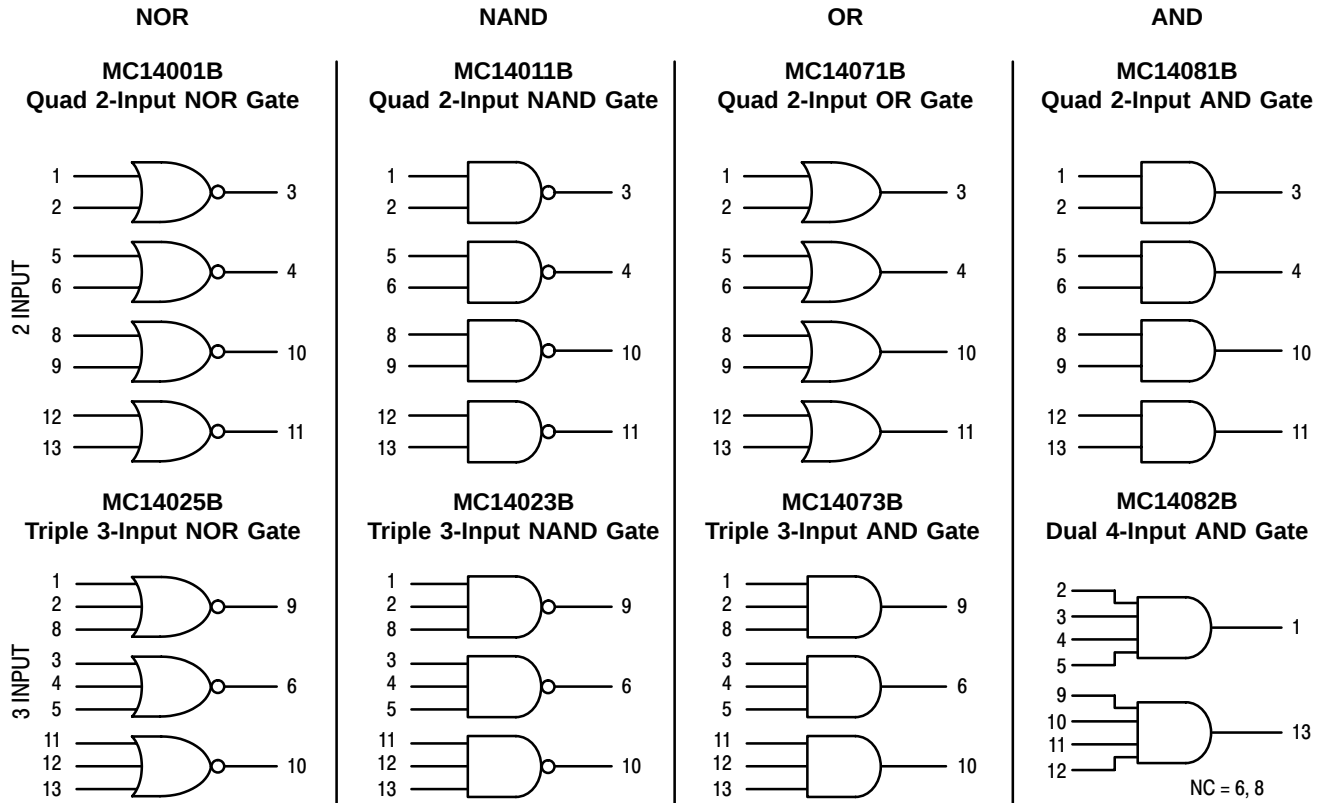
| Device   | Description              |
|----------|--------------------------|
| MC14001B | Quad 2-Input NOR Gate    |
| MC14011B | Quad 2-Input NAND Gate   |
| MC14023B | Triple 3-Input NAND Gate |
| MC14025B | Triple 3-Input NOR Gate  |
| MC14071B | Quad 2-Input OR Gate     |
| MC14073B | Triple 3-Input AND Gate  |
| MC14081B | Quad 2-Input AND Gate    |
| MC14082B | Dual 4-Input AND Gate    |

### ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 11 of this data sheet.

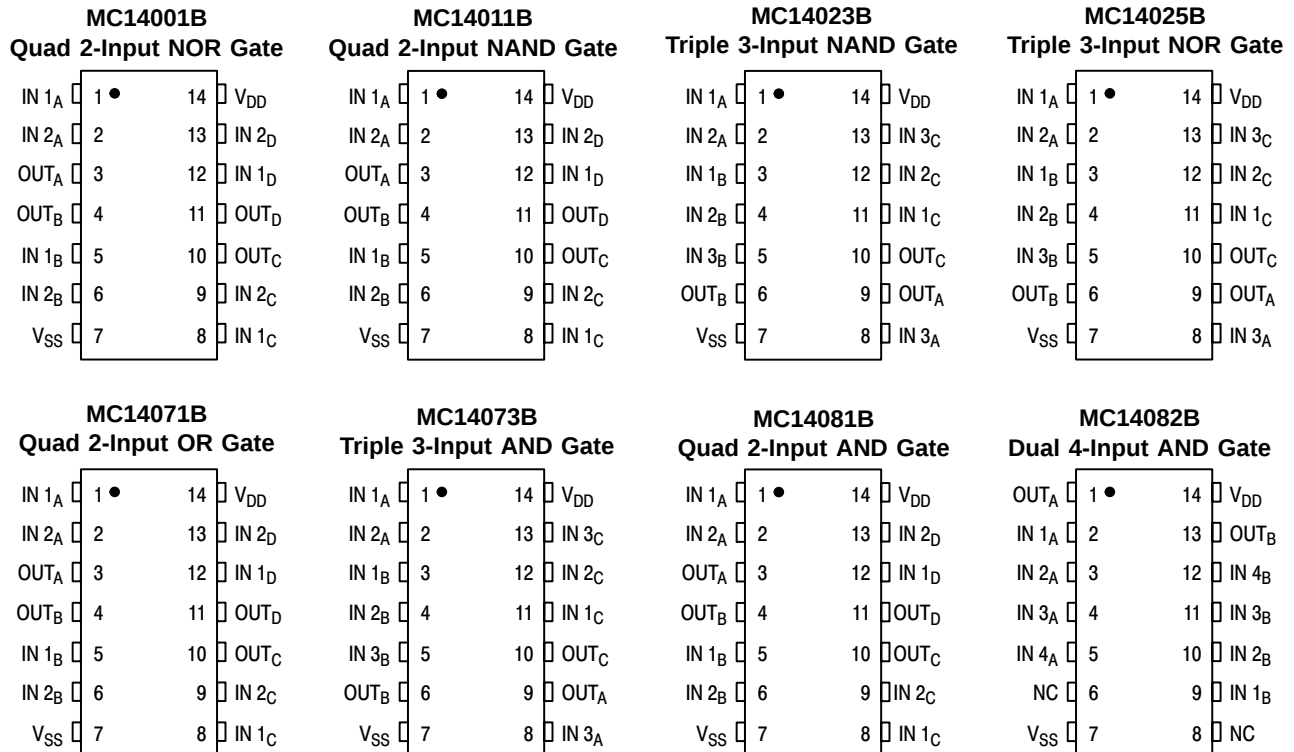
# MC14001B Series

## LOGIC DIAGRAMS



$V_{DD}$  = PIN 14  
 $V_{SS}$  = PIN 7  
 FOR ALL DEVICES

## PIN ASSIGNMENTS



NC = NO CONNECTION

# MC14001B Series

## ELECTRICAL CHARACTERISTICS (Voltages Referenced to V<sub>SS</sub>)

| Characteristic                                                                                                                                    | Symbol                    | V <sub>DD</sub><br>Vdc | - 55°C                                                                                                                                                               |       | 25°C   |                    |       | 125°C  |       | Unit |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|--------------------|-------|--------|-------|------|
|                                                                                                                                                   |                           |                        | Min                                                                                                                                                                  | Max   | Min    | Typ <sup>(3)</sup> | Max   | Min    | Max   |      |
| Output Voltage<br>V <sub>in</sub> = V <sub>DD</sub> or 0                                                                                          | V <sub>OL</sub>           | 5.0                    | —                                                                                                                                                                    | 0.05  | —      | 0                  | 0.05  | —      | 0.05  | Vdc  |
|                                                                                                                                                   |                           | 10                     | —                                                                                                                                                                    | 0.05  | —      | 0                  | 0.05  | —      | 0.05  |      |
|                                                                                                                                                   |                           | 15                     | —                                                                                                                                                                    | 0.05  | —      | 0                  | 0.05  | —      | 0.05  |      |
|                                                                                                                                                   | V <sub>OH</sub>           | 5.0                    | 4.95                                                                                                                                                                 | —     | 4.95   | 5.0                | —     | 4.95   | —     | Vdc  |
|                                                                                                                                                   |                           | 10                     | 9.95                                                                                                                                                                 | —     | 9.95   | 10                 | —     | 9.95   | —     |      |
|                                                                                                                                                   |                           | 15                     | 14.95                                                                                                                                                                | —     | 14.95  | 15                 | —     | 14.95  | —     |      |
| Input Voltage<br>(V <sub>O</sub> = 4.5 or 0.5 Vdc)<br>(V <sub>O</sub> = 9.0 or 1.0 Vdc)<br>(V <sub>O</sub> = 13.5 or 1.5 Vdc)                     | V <sub>IL</sub>           | 5.0                    | —                                                                                                                                                                    | 1.5   | —      | 2.25               | 1.5   | —      | 1.5   | Vdc  |
|                                                                                                                                                   |                           | 10                     | —                                                                                                                                                                    | 3.0   | —      | 4.50               | 3.0   | —      | 3.0   |      |
|                                                                                                                                                   |                           | 15                     | —                                                                                                                                                                    | 4.0   | —      | 6.75               | 4.0   | —      | 4.0   |      |
|                                                                                                                                                   | V <sub>IH</sub>           | 5.0                    | 3.5                                                                                                                                                                  | —     | 3.5    | 2.75               | —     | 3.5    | —     | Vdc  |
|                                                                                                                                                   |                           | 10                     | 7.0                                                                                                                                                                  | —     | 7.0    | 5.50               | —     | 7.0    | —     |      |
|                                                                                                                                                   |                           | 15                     | 11                                                                                                                                                                   | —     | 11     | 8.25               | —     | 11     | —     |      |
| Output Drive Current<br>(V <sub>OH</sub> = 2.5 Vdc)<br>(V <sub>OH</sub> = 4.6 Vdc)<br>(V <sub>OH</sub> = 9.5 Vdc)<br>(V <sub>OH</sub> = 13.5 Vdc) | Source<br>I <sub>OH</sub> | 5.0                    | - 3.0                                                                                                                                                                | —     | - 2.4  | - 4.2              | —     | - 1.7  | —     | mAdc |
|                                                                                                                                                   |                           | 5.0                    | - 0.64                                                                                                                                                               | —     | - 0.51 | - 0.88             | —     | - 0.36 | —     |      |
|                                                                                                                                                   |                           | 10                     | - 1.6                                                                                                                                                                | —     | - 1.3  | - 2.25             | —     | - 0.9  | —     |      |
|                                                                                                                                                   |                           | 15                     | - 4.2                                                                                                                                                                | —     | - 3.4  | - 8.8              | —     | - 2.4  | —     |      |
|                                                                                                                                                   | Sink<br>I <sub>OL</sub>   | 5.0                    | 0.64                                                                                                                                                                 | —     | 0.51   | 0.88               | —     | 0.36   | —     | mAdc |
|                                                                                                                                                   |                           | 10                     | 1.6                                                                                                                                                                  | —     | 1.3    | 2.25               | —     | 0.9    | —     |      |
|                                                                                                                                                   |                           | 15                     | 4.2                                                                                                                                                                  | —     | 3.4    | 8.8                | —     | 2.4    | —     |      |
| Input Current                                                                                                                                     | I <sub>in</sub>           | 15                     | —                                                                                                                                                                    | ± 0.1 | —      | ± 0.00001          | ± 0.1 | —      | ± 1.0 | µAdc |
| Input Capacitance<br>(V <sub>in</sub> = 0)                                                                                                        | C <sub>in</sub>           | —                      | —                                                                                                                                                                    | —     | —      | 5.0                | 7.5   | —      | —     | pF   |
| Quiescent Current<br>(Per Package)                                                                                                                | I <sub>DD</sub>           | 5.0                    | —                                                                                                                                                                    | 0.25  | —      | 0.0005             | 0.25  | —      | 7.5   | µAdc |
|                                                                                                                                                   |                           | 10                     | —                                                                                                                                                                    | 0.5   | —      | 0.0010             | 0.5   | —      | 15    |      |
|                                                                                                                                                   |                           | 15                     | —                                                                                                                                                                    | 1.0   | —      | 0.0015             | 1.0   | —      | 30    |      |
| Total Supply Current <sup>(4) (5)</sup><br>(Dynamic plus Quiescent,<br>Per Gate, C <sub>L</sub> = 50 pF)                                          | I <sub>T</sub>            | 5.0                    | I <sub>T</sub> = (0.3 µA/kHz) f + I <sub>DD</sub> /N<br>I <sub>T</sub> = (0.6 µA/kHz) f + I <sub>DD</sub> /N<br>I <sub>T</sub> = (0.9 µA/kHz) f + I <sub>DD</sub> /N |       |        |                    |       |        |       | µAdc |

3. Data labelled "Typ" is not to be used for design purposes but is intended as an indication of the IC's potential performance.

4. The formulas given are for the typical characteristics only at 25°C.

5. To calculate total supply current at loads other than 50 pF:

$$I_T(C_L) = I_T(50 \text{ pF}) + (C_L - 50) \text{ Vfk}$$

where: I<sub>T</sub> is in µA (per package), C<sub>L</sub> in pF, V = (V<sub>DD</sub> - V<sub>SS</sub>) in volts, f in kHz is input frequency, and k = 0.001 x the number of exercised gates per package.

# MC14001B Series

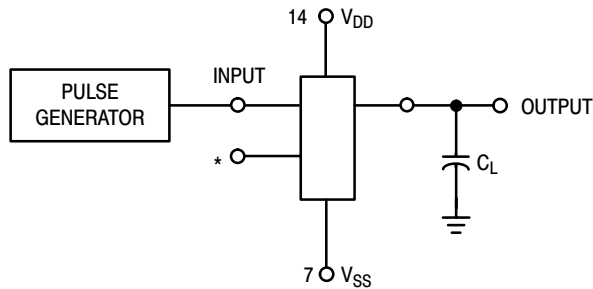
## B-SERIES GATE SWITCHING TIMES

### SWITCHING CHARACTERISTICS <sup>(6)</sup> ( $C_L = 50 \text{ pF}$ , $T_A = 25^\circ\text{C}$ )

| Characteristic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Symbol             | $V_{DD}$<br>Vdc                                               | Min                                               | Typ <sup>(7)</sup>                                            | Max                                                                | Unit |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------|------|
| Output Rise Time, All B-Series Gates<br>$t_{TLH} = (1.35 \text{ ns/pF}) C_L + 33 \text{ ns}$<br>$t_{TLH} = (0.60 \text{ ns/pF}) C_L + 20 \text{ ns}$<br>$t_{TLH} = (0.40 \text{ ns/pF}) C_L + 20 \text{ ns}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | $t_{TLH}$          | 5.0<br>10<br>15                                               | —<br>—<br>—                                       | 100<br>50<br>40                                               | 200<br>100<br>80                                                   | ns   |
| Output Fall Time, All B-Series Gates<br>$t_{THL} = (1.35 \text{ ns/pF}) C_L + 33 \text{ ns}$<br>$t_{THL} = (0.60 \text{ ns/pF}) C_L + 20 \text{ ns}$<br>$t_{THL} = (0.40 \text{ ns/pF}) C_L + 20 \text{ ns}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | $t_{THL}$          | 5.0<br>10<br>15                                               | —<br>—<br>—                                       | 100<br>50<br>40                                               | 200<br>100<br>80                                                   | ns   |
| Propagation Delay Time<br>MC14001B, MC14011B only<br>$t_{PLH}, t_{PHL} = (0.90 \text{ ns/pF}) C_L + 80 \text{ ns}$<br>$t_{PLH}, t_{PHL} = (0.36 \text{ ns/pF}) C_L + 32 \text{ ns}$<br>$t_{PLH}, t_{PHL} = (0.26 \text{ ns/pF}) C_L + 27 \text{ ns}$<br>All Other 2, 3, and 4 Input Gates<br>$t_{PLH}, t_{PHL} = (0.90 \text{ ns/pF}) C_L + 115 \text{ ns}$<br>$t_{PLH}, t_{PHL} = (0.36 \text{ ns/pF}) C_L + 47 \text{ ns}$<br>$t_{PLH}, t_{PHL} = (0.26 \text{ ns/pF}) C_L + 37 \text{ ns}$<br>8-Input Gates (MC14068B, MC14078B)<br>$t_{PLH}, t_{PHL} = (0.90 \text{ ns/pF}) C_L + 155 \text{ ns}$<br>$t_{PLH}, t_{PHL} = (0.36 \text{ ns/pF}) C_L + 62 \text{ ns}$<br>$t_{PLH}, t_{PHL} = (0.26 \text{ ns/pF}) C_L + 47 \text{ ns}$ | $t_{PLH}, t_{PHL}$ | 5.0<br>10<br>15<br><br>5.0<br>10<br>15<br><br>5.0<br>10<br>15 | —<br>—<br>—<br><br>—<br>—<br>—<br><br>—<br>—<br>— | 125<br>50<br>40<br><br>160<br>65<br>50<br><br>200<br>80<br>60 | 250<br>100<br>80<br><br>300<br>130<br>100<br><br>350<br>150<br>110 | ns   |

6. The formulas given are for the typical characteristics only at  $25^\circ\text{C}$ .

7. Data labelled "Typ" is not to be used for design purposes but is intended as an indication of the IC's potential performance.



\*All unused inputs of AND, NAND gates must be connected to  $V_{DD}$ .  
 All unused inputs of OR, NOR gates must be connected to  $V_{SS}$ .

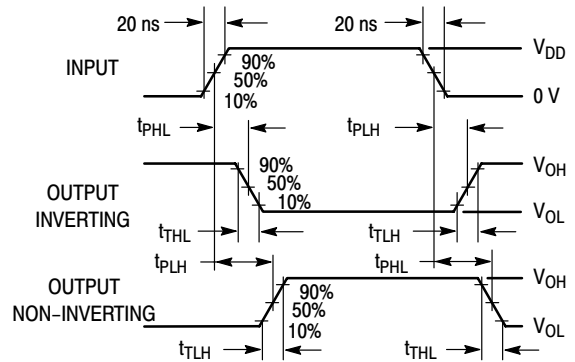
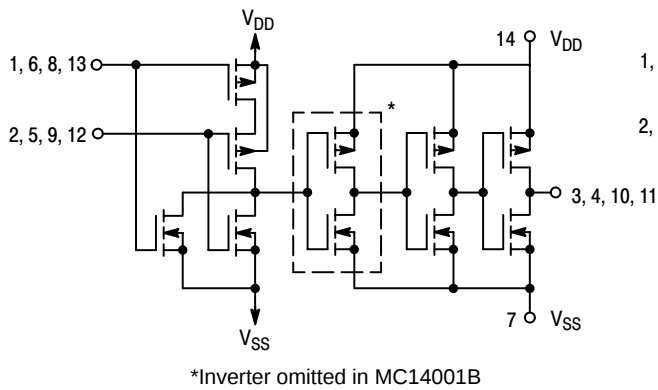


Figure 1. Switching Time Test Circuit and Waveforms

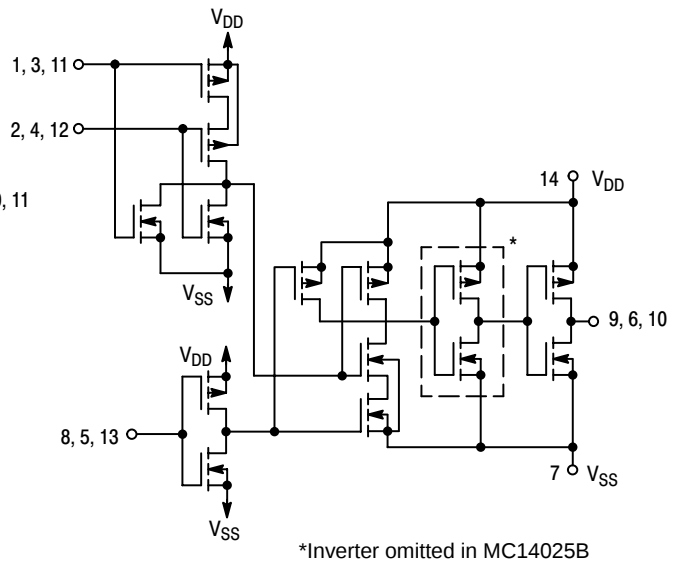
## MC14001B Series

### CIRCUIT SCHEMATIC NOR, OR GATES

**MC14001B, MC14071B**  
One of Four Gates Shown

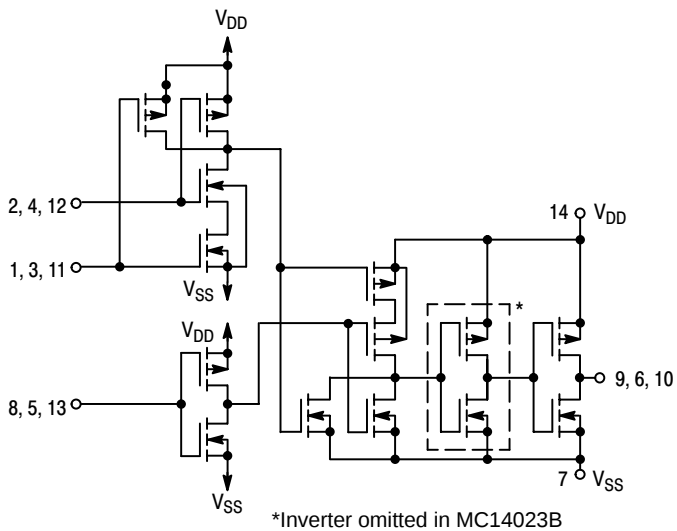


**MC14025B**  
One of Three Gates Shown

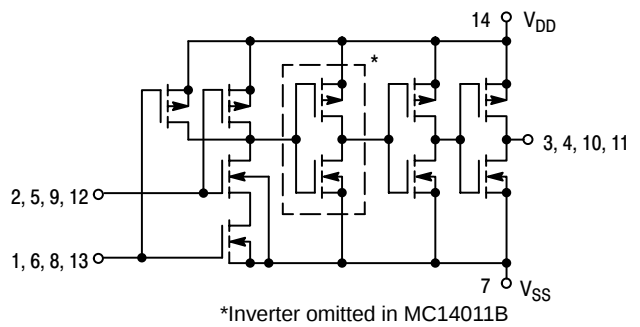


### CIRCUIT SCHEMATIC NAND, AND GATES

**MC14023B, MC14073B**  
One of Three Gates Shown



**MC14011B, MC14081B**  
One of Four Gates Shown



TYPICAL B-SERIES GATE CHARACTERISTICS

N-CHANNEL DRAIN CURRENT (SINK)

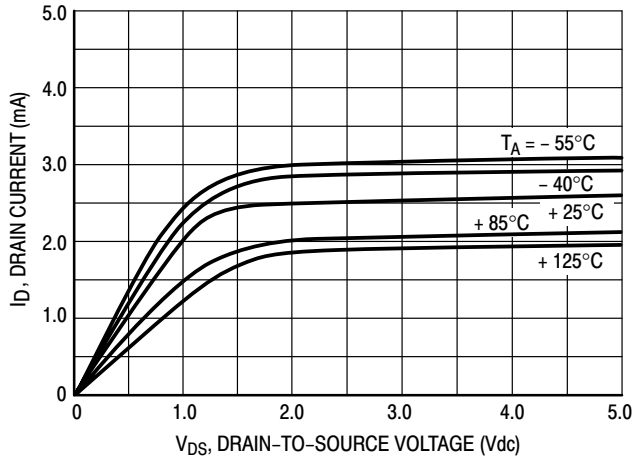


Figure 2.  $V_{GS} = 5.0$  Vdc

P-CHANNEL DRAIN CURRENT (SOURCE)

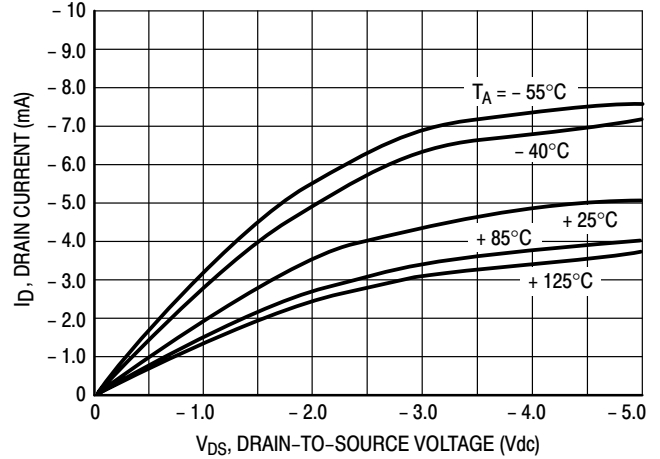


Figure 3.  $V_{GS} = -5.0$  Vdc

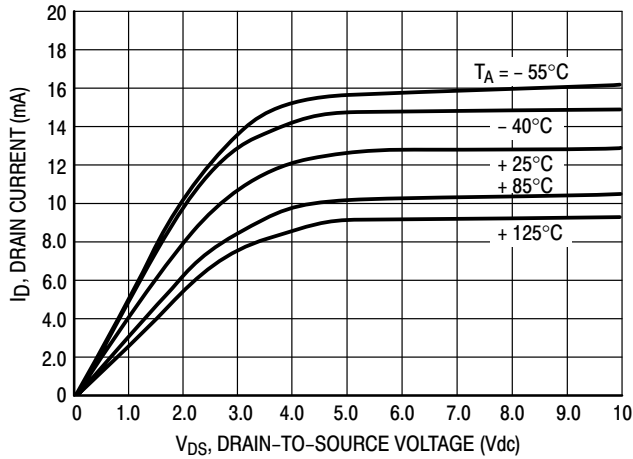


Figure 4.  $V_{GS} = 10$  Vdc

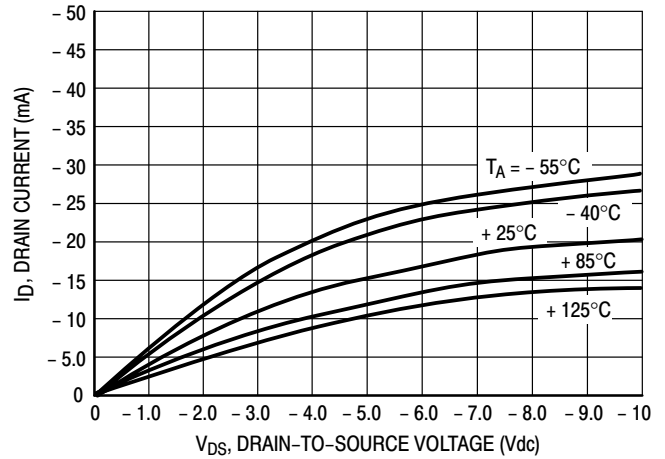


Figure 5.  $V_{GS} = -10$  Vdc

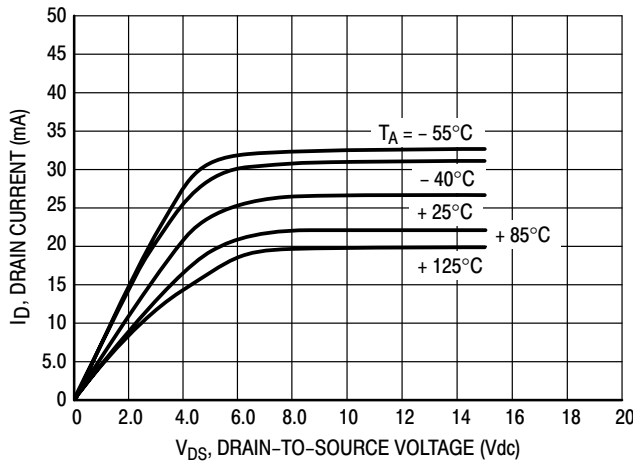


Figure 6.  $V_{GS} = 15$  Vdc

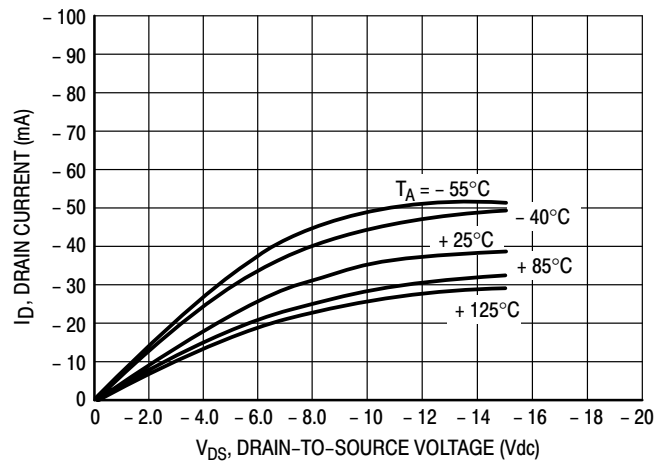


Figure 7.  $V_{GS} = -15$  Vdc

These typical curves are not guarantees, but are design aids.  
Caution: The maximum rating for output current is 10 mA per pin.

# MC14001B Series

## TYPICAL B-SERIES GATE CHARACTERISTICS (cont'd)

### VOLTAGE TRANSFER CHARACTERISTICS

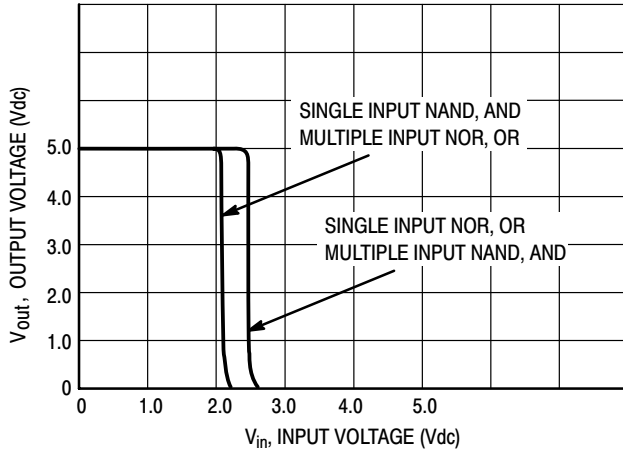


Figure 8.  $V_{DD} = 5.0 \text{ Vdc}$

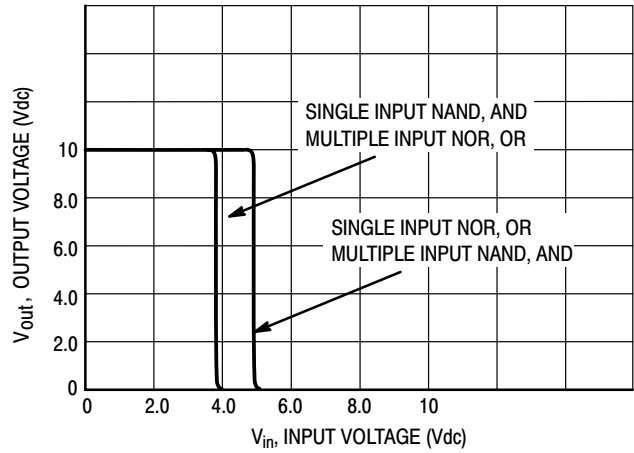


Figure 9.  $V_{DD} = 10 \text{ Vdc}$

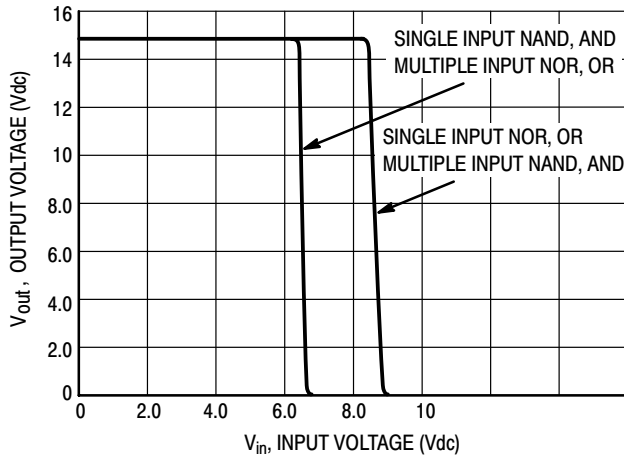


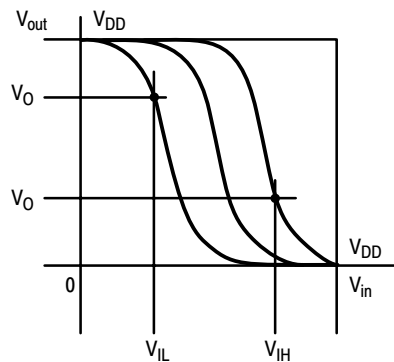
Figure 10.  $V_{DD} = 15 \text{ Vdc}$

### DC NOISE MARGIN

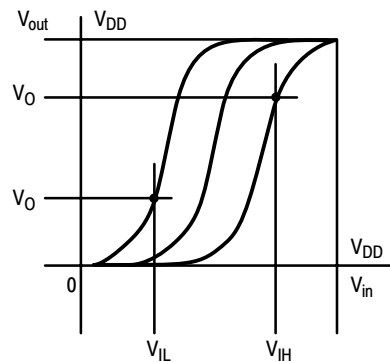
The DC noise margin is defined as the input voltage range from an ideal "1" or "0" input level which does not produce output state change(s). The typical and guaranteed limit values of the input values  $V_{IL}$  and  $V_{IH}$  for the output(s) to be at a fixed voltage  $V_O$  are given in the Electrical Characteristics table.  $V_{IL}$  and  $V_{IH}$  are presented graphically in Figure 11.

Guaranteed minimum noise margins for both the "1" and "0" levels =

- 1.0 V with a 5.0 V supply
- 2.0 V with a 10.0 V supply
- 2.5 V with a 15.0 V supply



(a) Inverting Function



(b) Non-Inverting Function

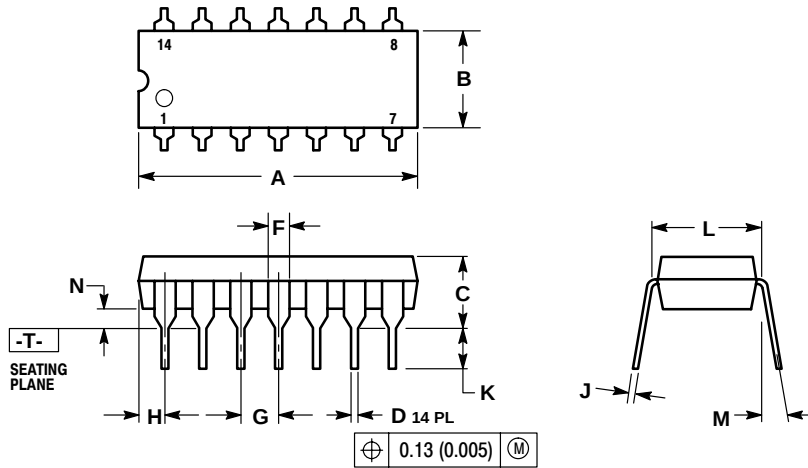
$V_{SS} = 0 \text{ VOLTS DC}$

Figure 11. DC Noise Immunity

# MC14001B Series

## PACKAGE DIMENSIONS

### P SUFFIX PLASTIC DIP PACKAGE CASE 646-06 ISSUE M

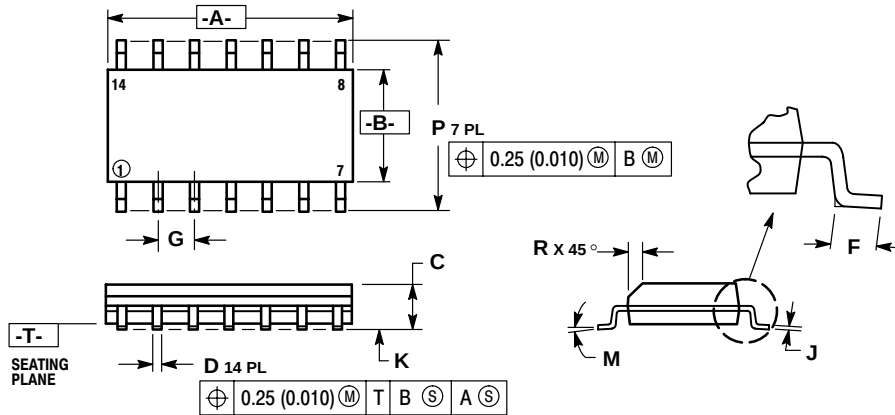


#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
4. DIMENSION B DOES NOT INCLUDE MOLD FLASH.
5. ROUNDED CORNERS OPTIONAL.

| DIM | INCHES    |       | MILLIMETERS |       |
|-----|-----------|-------|-------------|-------|
|     | MIN       | MAX   | MIN         | MAX   |
| A   | 0.715     | 0.770 | 18.16       | 18.80 |
| B   | 0.240     | 0.260 | 6.10        | 6.60  |
| C   | 0.145     | 0.185 | 3.69        | 4.69  |
| D   | 0.015     | 0.021 | 0.38        | 0.53  |
| F   | 0.040     | 0.070 | 1.02        | 1.78  |
| G   | 0.100 BSC |       | 2.54 BSC    |       |
| H   | 0.052     | 0.095 | 1.32        | 2.41  |
| J   | 0.008     | 0.015 | 0.20        | 0.38  |
| K   | 0.115     | 0.135 | 2.92        | 3.43  |
| L   | 0.290     | 0.310 | 7.37        | 7.87  |
| M   | 10°       |       | 10°         |       |
| N   | 0.015     | 0.039 | 0.38        | 1.01  |

### D SUFFIX PLASTIC SOIC PACKAGE CASE 751A-03 ISSUE F



#### NOTES:

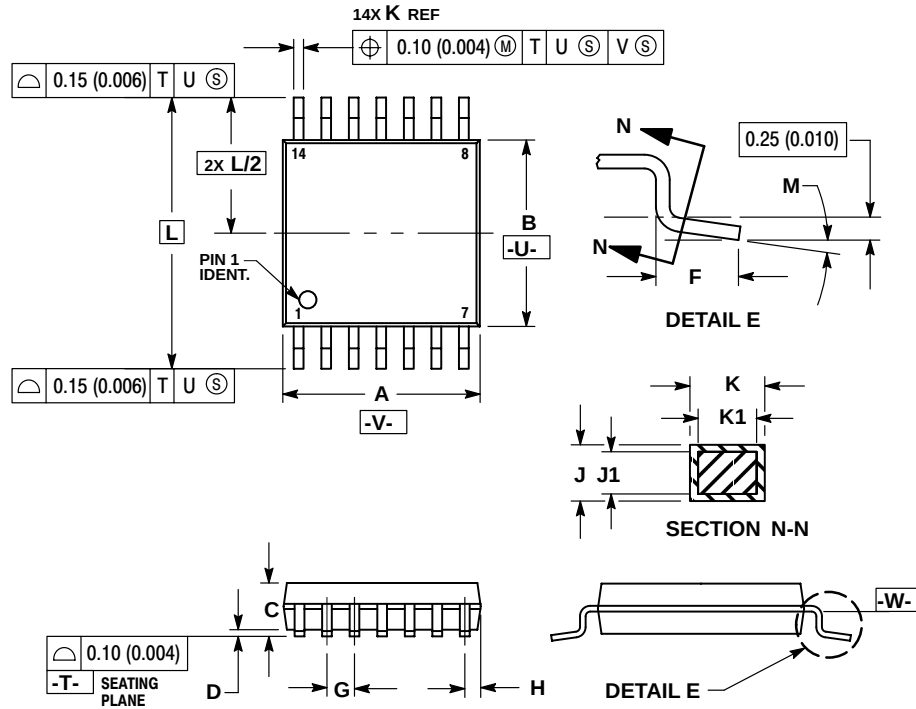
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

| DIM | MILLIMETERS |      | INCHES    |       |
|-----|-------------|------|-----------|-------|
|     | MIN         | MAX  | MIN       | MAX   |
| A   | 8.55        | 8.75 | 0.337     | 0.344 |
| B   | 3.80        | 4.00 | 0.150     | 0.157 |
| C   | 1.35        | 1.75 | 0.054     | 0.068 |
| D   | 0.35        | 0.49 | 0.014     | 0.019 |
| F   | 0.40        | 1.25 | 0.016     | 0.049 |
| G   | 1.27 BSC    |      | 0.050 BSC |       |
| J   | 0.19        | 0.25 | 0.008     | 0.009 |
| K   | 0.10        | 0.25 | 0.004     | 0.009 |
| M   | 0°          | 7°   | 0°        | 7°    |
| P   | 5.80        | 6.20 | 0.228     | 0.244 |
| R   | 0.25        | 0.50 | 0.010     | 0.019 |

# MC14001B Series

## PACKAGE DIMENSIONS

DT SUFFIX  
PLASTIC TSSOP PACKAGE  
CASE 948G-01  
ISSUE O



### NOTES:

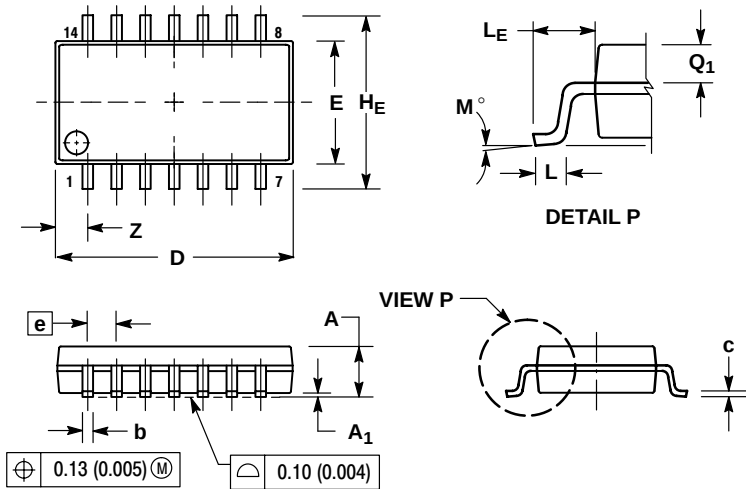
- 1 DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2 CONTROLLING DIMENSION: MILLIMETER.
- 3 DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
- 4 DIMENSION B DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010) PER SIDE.
- 5 DIMENSION K DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE K DIMENSION AT MAXIMUM MATERIAL CONDITION.
- 6 TERMINAL NUMBERS ARE SHOWN FOR REFERENCE ONLY.
- 7 DIMENSION A AND B ARE TO BE DETERMINED AT DATUM PLANE -W-.

| DIM | MILLIMETERS |      | INCHES    |       |
|-----|-------------|------|-----------|-------|
|     | MIN         | MAX  | MIN       | MAX   |
| A   | 4.90        | 5.10 | 0.193     | 0.200 |
| B   | 4.30        | 4.50 | 0.169     | 0.177 |
| C   | ---         | 1.20 | ---       | 0.047 |
| D   | 0.05        | 0.15 | 0.002     | 0.006 |
| F   | 0.50        | 0.75 | 0.020     | 0.030 |
| G   | 0.65 BSC    |      | 0.026 BSC |       |
| H   | 0.50        | 0.60 | 0.020     | 0.024 |
| J   | 0.09        | 0.20 | 0.004     | 0.008 |
| J1  | 0.09        | 0.16 | 0.004     | 0.006 |
| K   | 0.19        | 0.30 | 0.007     | 0.012 |
| K1  | 0.19        | 0.25 | 0.007     | 0.010 |
| L   | 6.40 BSC    |      | 0.252 BSC |       |
| M   | 0°          | 8°   | 0°        | 8°    |

# MC14001B Series

## PACKAGE DIMENSIONS

### F SUFFIX PLASTIC EIAJ SOIC PACKAGE CASE 965-01 ISSUE O



#### NOTES:

- 1 DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2 CONTROLLING DIMENSION: MILLIMETER.
- 3 DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS AND ARE MEASURED AT THE PARTING LINE. MOLD FLASH OR PROTRUSIONS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
- 4 TERMINAL NUMBERS ARE SHOWN FOR REFERENCE ONLY.
- 5 THE LEAD WIDTH DIMENSION (b) DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE LEAD WIDTH DIMENSION AT MAXIMUM MATERIAL CONDITION. DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE FOOT. MINIMUM SPACE BETWEEN PROTRUSIONS AND ADJACENT LEAD TO BE 0.46 (0.018).

| DIM            | MILLIMETERS |       | INCHES    |       |
|----------------|-------------|-------|-----------|-------|
|                | MIN         | MAX   | MIN       | MAX   |
| A              | ---         | 2.05  | ---       | 0.081 |
| A <sub>1</sub> | 0.05        | 0.20  | 0.002     | 0.008 |
| b              | 0.35        | 0.50  | 0.014     | 0.020 |
| c              | 0.18        | 0.27  | 0.007     | 0.011 |
| D              | 9.90        | 10.50 | 0.390     | 0.413 |
| E              | 5.10        | 5.45  | 0.201     | 0.215 |
| e              | 1.27 BSC    |       | 0.050 BSC |       |
| HE             | 7.40        | 8.20  | 0.291     | 0.323 |
| 0.50           | 0.50        | 0.85  | 0.020     | 0.033 |
| LE             | 1.10        | 1.50  | 0.043     | 0.059 |
| M              | 0°          | 10°   | 0°        | 10°   |
| Q <sub>1</sub> | 0.70        | 0.90  | 0.028     | 0.035 |
| Z              | ---         | 1.42  | ---       | 0.056 |

## MC14001B Series

### ORDERING & SHIPPING INFORMATION:

| Device       | Package  | Shipping                 |
|--------------|----------|--------------------------|
| MC14001BCP   | PDIP-14  | 2000 Units per Box       |
| MC14001BD    | SOIC-14  | 2750 Units per Box       |
| MC14001BDR2  | SOIC-14  | 2500 Units / Tape & Reel |
| MC14001BDT   | TSSOP-14 | 96 Units per Rail        |
| MC14001BDTR2 | TSSOP-14 | 2500 Units / Tape & Reel |
|              |          |                          |
| MC14011BCP   | PDIP-14  | 2000 Units per Box       |
| MC14011BD    | SOIC-14  | 2750 Units per Box       |
| MC14011BDR2  | SOIC-14  | 2500 Units / Tape & Reel |
| MC14011BDT   | TSSOP-14 | 96 Units per Rail        |
| MC14011BDTEL | TSSOP-14 | 2000 Units / Tape & Reel |
| MC14011BDTR2 | TSSOP-14 | 2500 Units / Tape & Reel |
|              |          |                          |
| MC14023BCP   | PDIP-14  | 2000 Units per Box       |
| MC14023BD    | SOIC-14  | 2750 Units per Box       |
| MC14023BDR2  | SOIC-14  | 2500 Units / Tape & Reel |
|              |          |                          |
| MC14025BCP   | PDIP-14  | 2000 Units per Box       |
| MC14025BD    | SOIC-14  | 2750 Units per Box       |
| MC14025BDR2  | SOIC-14  | 2500 Units / Tape & Reel |

### ORDERING & SHIPPING INFORMATION:

| Device       | Package  | Shipping                 |
|--------------|----------|--------------------------|
| MC14071BCP   | PDIP-14  | 2000 Units per Box       |
| MC14071BD    | SOIC-14  | 55 Units per Rail        |
| MC14071BDR2  | SOIC-14  | 2500 Units / Tape & Reel |
| MC14071BDT   | TSSOP-14 | 96 Units per Rail        |
| MC14071BDTR2 | TSSOP-14 | 2500 Units / Tape & Reel |
|              |          |                          |
| MC14073BCP   | PDIP-14  | 2000 Units per Box       |
| MC14073BD    | SOIC-14  | 55 Units per Rail        |
| MC14073BDR2  | SOIC-14  | 2500 Units / Tape & Reel |
|              |          |                          |
| MC14081BCP   | PDIP-14  | 2000 Units per Box       |
| MC14081BD    | SOIC-14  | 55 Units per Rail        |
| MC14081BDR2  | SOIC-14  | 2500 Units / Tape & Reel |
| MC14081BDT   | TSSOP-14 | 96 Units per Rail        |
| MC14081BDTR2 | TSSOP-14 | 2500 Units / Tape & Reel |
|              |          |                          |
| MC14082BCP   | PDIP-14  | 2000 Units per Box       |
| MC14082BD    | SOIC-14  | 55 Units per Rail        |
| MC14082BDR2  | SOIC-14  | 2500 Units / Tape & Reel |

For ordering information on the EIAJ version of the SOIC packages, please contact your local ON Semiconductor representative.

## MC14001B Series

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