

# CD4071B, CD4072B, CD4075B Types

## CMOS OR Gates

### High-Voltage Types (20-Volt Rating)

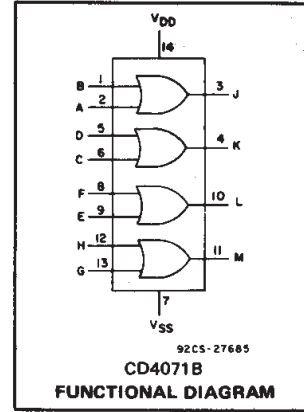
CD4071B Quad 2-Input OR Gate  
CD4072B Dual 4-Input OR Gate  
CD4075B Triple 3-Input OR Gate

■ CD4071B, CD4072B, and CD4075B OR gates provide the system designer with direct implementation of the positive-logic OR function and supplement the existing family of CMOS gates.

The CD4071B, CD4072B, and CD4075B types are supplied in 14-lead hermetic dual-in-line ceramic packages (F3A suffix), 14-lead dual-in-line plastic packages (E suffix), 14-lead small-outline packages (M, MT, M96, and NSR suffixes), and 14-lead thin shrink small-outline packages (PW and PWR suffixes).

### Features:

- Medium-Speed Operation- $t_{pLH}$ ,  $t_{pHL} = 60$  ns (typ.) at  $V_{DD} = 10$  V
- 100% tested for quiescent current at 20 V
- Maximum input current of  $1 \mu A$  at 18 V over full package-temperature range; 100 nA at 18 V and 25°C
- Standardized, symmetrical output characteristics
- Noise margin (over full package temperature range)
  - 1 V at  $V_{DD} = 5$  V
  - 2 V at  $V_{DD} = 10$  V
  - 2.5 V at  $V_{DD} = 15$  V
- 5-V, 10-V, and 15-V parametric ratings
- Meets all requirements of JEDEC Tentative Standard No. 13B, "Standard Specifications for Description of 'B' Series CMOS Devices"



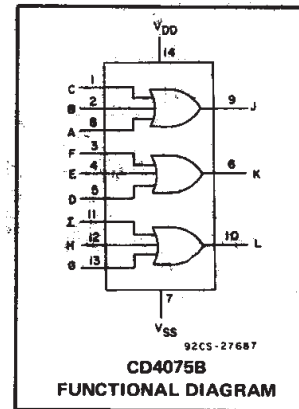
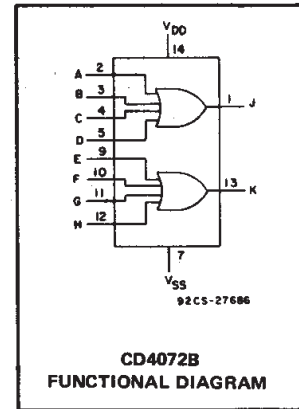
### RECOMMENDED OPERATING CONDITIONS

For maximum reliability, nominal operating conditions should be selected so that operation is always within the following ranges:

| CHARACTERISTIC  | LIMITS |      | UNITS |
|---|--------|------|-------|
|   | MIN.   | MAX. |       |
| Supply-Voltage Range (For $T_A =$ Full Package-Temperature Range) | 3      | 18   | V     |

### STATIC ELECTRICAL CHARACTERISTICS

| CHARACTERISTIC                              | CONDITIONS |              |              | LIMITS AT INDICATED TEMPERATURES (°C) |           |         |         |       |               |           | UNITS   |
|---|------------|--------------|--------------|---------------------------------------|-----------|---------|---------|-------|---------------|-----------|---------|
|   | $V_O$ (V)  | $V_{IN}$ (V) | $V_{DD}$ (V) | -55                                   | -40       | +85     | +125    | +25   |               |           |         |
|   |            |              |              |                                       |           |         |         | Min.  | Typ.          | Max.      |         |
| Quiescent Device Current, $I_{DD}$ Max.     | -          | 0.5          | 5            | 0.25                                  | 0.25      | 7.5     | 7.5     | -     | 0.01          | 0.25      | $\mu A$ |
|   | -          | 0.10         | 10           | 0.5                                   | 0.5       | 15      | 15      | -     | 0.01          | 0.5       |         |
|   | -          | 0.15         | 15           | 1                                     | 1         | 30      | 30      | -     | 0.01          | 1         |         |
|   | -          | 0.20         | 20           | 5                                     | 5         | 150     | 150     | -     | 0.02          | 5         |         |
| Output Low (Sink) Current $I_{OL}$ Min.     | 0.4        | 0.5          | 5            | 0.64                                  | 0.61      | 0.42    | 0.36    | 0.51  | 1             | -         | $m A$   |
|   | 0.5        | 0.10         | 10           | 1.6                                   | 1.5       | 1.1     | 0.9     | 1.3   | 2.6           | -         |         |
|   | 1.5        | 0.15         | 15           | 4.2                                   | 4         | 2.8     | 2.4     | 3.4   | 6.8           | -         |         |
|   | 1.5        | 0.15         | 15           | 4.2                                   | 4         | 2.8     | 2.4     | 3.4   | 6.8           | -         |         |
| Output High (Source) Current, $I_{OH}$ Min. | 4.6        | 0.5          | 5            | -0.64                                 | -0.61     | -0.42   | -0.36   | -0.51 | -1            | -         | $m A$   |
|   | 2.5        | 0.5          | 5            | -2                                    | -1.8      | -1.3    | -1.15   | -1.6  | -3.2          | -         |         |
|   | 9.5        | 0.10         | 10           | -1.6                                  | -1.5      | -1.1    | -0.9    | -1.3  | -2.6          | -         |         |
|   | 13.5       | 0.15         | 15           | -4.2                                  | -4        | -2.8    | -2.4    | -3.4  | -6.8          | -         |         |
| Output Voltage: Low-Level, $V_{OL}$ Max.    | -          | 0.5          | 5            | 0.05                                  |           |         |         | -     | 0             | 0.05      | V       |
|   | -          | 0.10         | 10           | 0.05                                  |           |         |         | -     | 0             | 0.05      |         |
|   | -          | 0.15         | 15           | 0.05                                  |           |         |         | -     | 0             | 0.05      |         |
| Output Voltage: High-Level, $V_{OH}$ Min.   | -          | 0.5          | 5            | 4.95                                  |           |         |         | 4.95  | 5             | -         | V       |
|   | -          | 0.10         | 10           | 9.95                                  |           |         |         | 9.95  | 10            | -         |         |
|   | -          | 0.15         | 15           | 14.95                                 |           |         |         | 14.95 | 15            | -         |         |
| Input Low Voltage, $V_{IL}$ Max.            | 0.5, 4.5   | -            | 5            | 1.5                                   |           |         |         | -     | -             | 1.5       | V       |
|   | 1, 9       | -            | 10           | 3                                     |           |         |         | -     | -             | 3         |         |
|   | 1.5, 13.5  | -            | 15           | 4                                     |           |         |         | -     | -             | 4         |         |
| Input High Voltage, $V_{IH}$ Min.           | 4.5        | -            | 5            | 3.5                                   |           |         |         | 3.5   | -             | -         | V       |
|   | 9          | -            | 10           | 7                                     |           |         |         | 7     | -             | -         |         |
|   | 13.5       | -            | 15           | 11                                    |           |         |         | 11    | -             | -         |         |
| Input Current $I_{IN}$ Max.                 |            | 0.18         | 18           | $\pm 0.1$                             | $\pm 0.1$ | $\pm 1$ | $\pm 1$ | -     | $\pm 10^{-5}$ | $\pm 0.1$ | $\mu A$ |



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## MAXIMUM RATINGS, Absolute-Maximum Values:

### DC SUPPLY-VOLTAGE RANGE, ( $V_{DD}$ )

Voltages referenced to  $V_{SS}$  Terminal ..... -0.5V to +20V

INPUT VOLTAGE RANGE, ALL INPUTS ..... -0.5V to  $V_{DD}$  +0.5V

DC INPUT CURRENT, ANY ONE INPUT .....  $\pm 10$ mA

### POWER DISSIPATION PER PACKAGE ( $P_D$ ):

For  $T_A = -55^\circ\text{C}$  to  $+100^\circ\text{C}$  ..... 500mW

For  $T_A = +100^\circ\text{C}$  to  $+125^\circ\text{C}$  ..... Derate Linearly at 12mW/ $^\circ\text{C}$  to 200mW

### DEVICE DISSIPATION PER OUTPUT TRANSISTOR

FOR  $T_A = \text{FULL PACKAGE-TEMPERATURE RANGE (All Package Types)}$  ..... 100mW

OPERATING-TEMPERATURE RANGE ( $T_A$ ) .....  $-55^\circ\text{C}$  to  $+125^\circ\text{C}$

STORAGE TEMPERATURE RANGE ( $T_{stg}$ ) .....  $-65^\circ\text{C}$  to  $+150^\circ\text{C}$

### LEAD TEMPERATURE (DURING SOLDERING):

At distance  $1/16 \pm 1/32$  inch ( $1.59 \pm 0.79$ mm) from case for 10s max .....  $+265^\circ\text{C}$

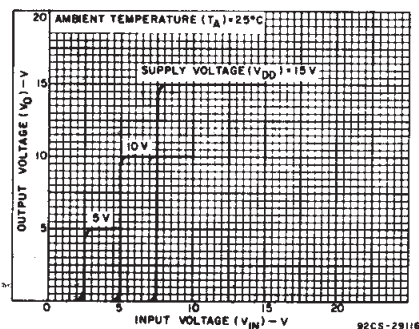


Fig. 1 - Typical voltage transfer characteristics.

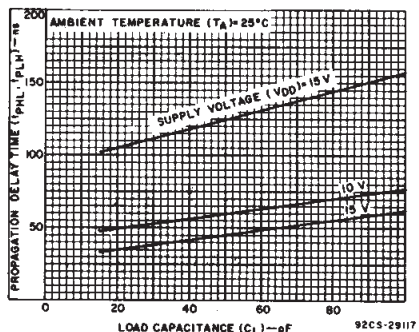


Fig. 2 - Typical propagation delay time as a function of load capacitance.

## DYNAMIC ELECTRICAL CHARACTERISTICS at $T_A = 25^\circ\text{C}$ , Input $t_r, t_f = 20$ ns, and $C_L = 50$ pF, $R_L = 200$ k $\Omega$

| CHARACTERISTIC                             | TEST CONDITIONS | ALL TYPES LIMITS |      |      | UNITS |
|--|-----------------|------------------|------|------|-------|
|  |                 | $V_{DD}$ VOLTS   | TYP. | MAX. |       |
| Propagation Delay Time, $t_{PHL}, t_{PLH}$ |                 | 5                | 125  | 250  | ns    |
|  |                 | 10               | 60   | 120  |       |
|  |                 | 15               | 45   | 90   |       |
| Transition Time, $t_{THL}, t_{TLH}$        |                 | 5                | 100  | 200  | ns    |
|  |                 | 10               | 50   | 100  |       |
|  |                 | 15               | 40   | 80   |       |
| Input Capacitance, $C_{IN}$                | Any Input       | —                | 5    | 7.5  | pF    |

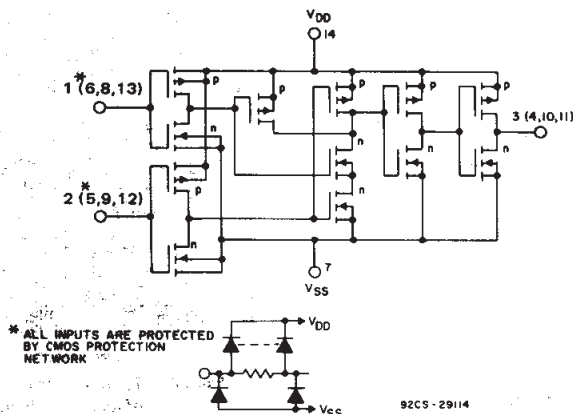


Fig. 3 - Schematic diagram for CD4071B (1 of 4 identical gates).

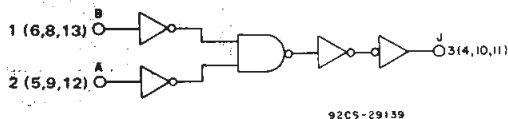


Fig. 5 - Logic diagram for CD4071B (1 of 4 identical gates).

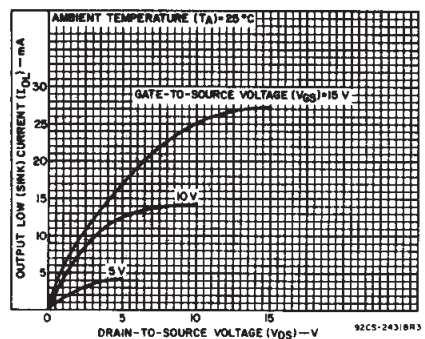


Fig. 4 - Typical output low (sink) current characteristics.

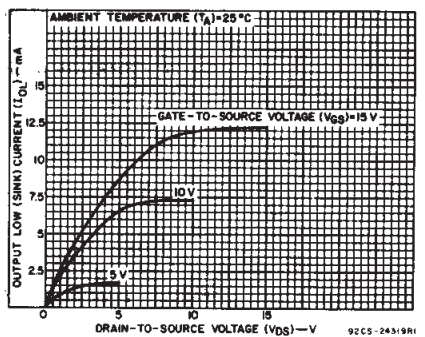


Fig. 6 - Minimum output low (sink) current characteristics.

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# CD4071B, CD4072B, CD4075B Types



\* INVERTERS 2,3 AND 4 ARE IDENTICAL TO INVERTER 1.  
**Fig. 7 — Schematic diagram for CD4072B (1 of 2 identical gates).**



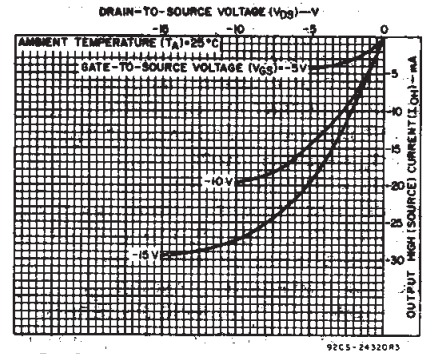
**Fig. 9 — Logic diagram for CD4072B (1 of 2 identical gates).**



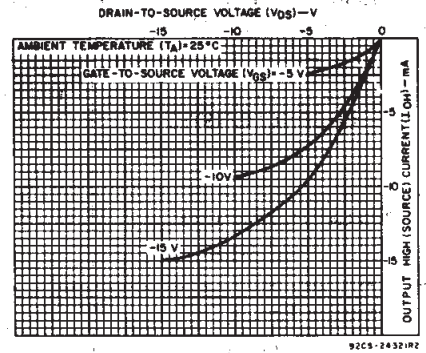
**Fig. 11 — Schematic diagram for CD4075B (1 of 3 identical gates).**



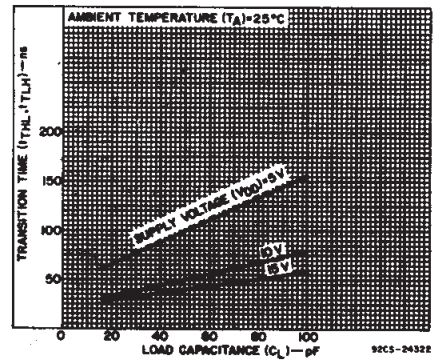
**Fig. 13 — Logic diagram for CD4075B (1 of 3 identical gates).**



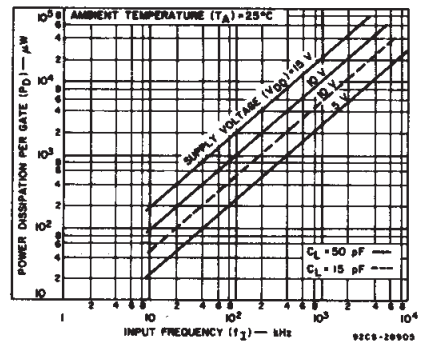
**Fig. 8 — Typical output high (source) current characteristics.**



**Fig. 10 — Minimum output high (source) current characteristics.**



**Fig. 12 — Typical transition time as a function of load capacitance.**



**Fig. 14 — Typical dynamic power dissipation as a function of frequency.**

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## TERMINAL ASSIGNMENTS (TOP VIEW)

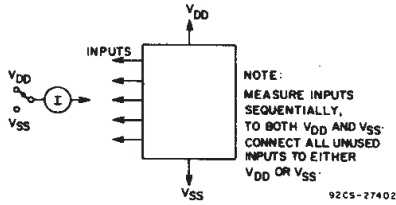
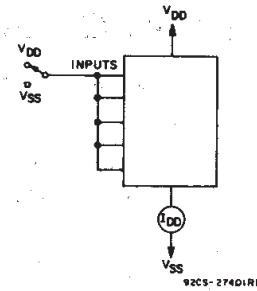
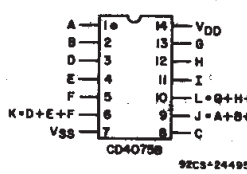
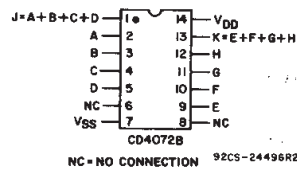
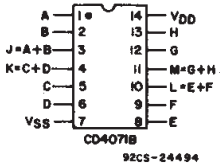


Fig. 16 - Input current test circuit.

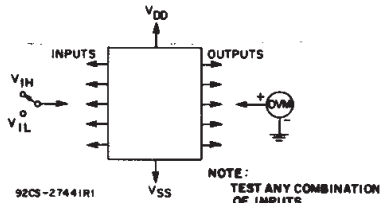
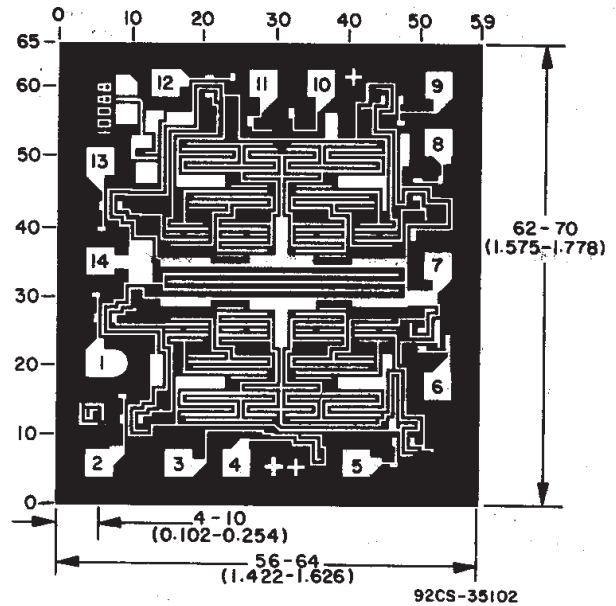
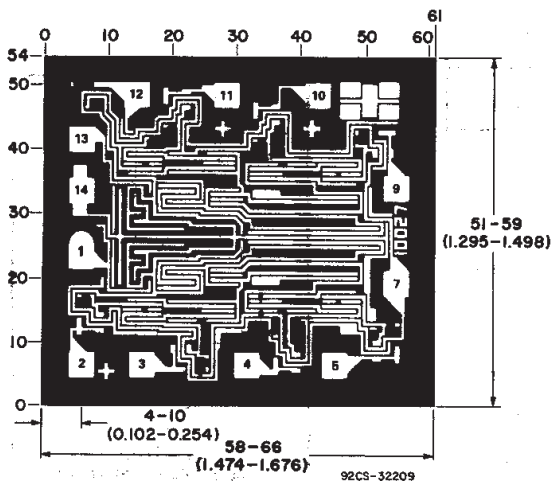


Fig. 17 - Input-voltage test circuit.

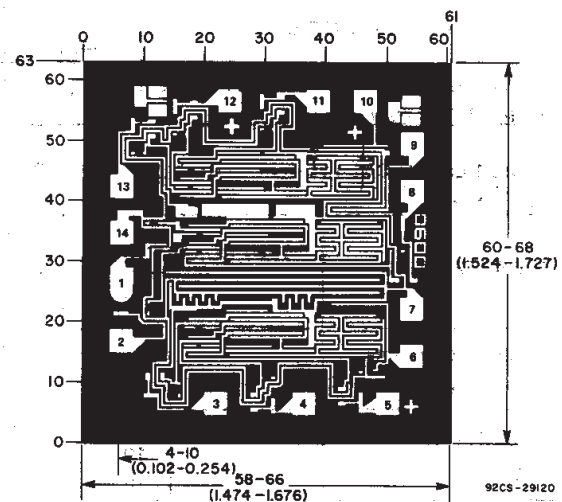
Dimensions in parentheses are in millimeters and are derived from the basic inch dimensions as indicated. Grid graduations are in mils ( $10^{-3}$  inch).



Chip dimensions and pad layout for CD4071B.



Chip dimensions and pad layout for CD4072B.



Chip dimensions and pad layout for CD4075B.

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**PACKAGING INFORMATION**

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup> | Lead/Ball Finish | MSL Peak Temp <sup>(3)</sup> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| 7706002CA        | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |
| CD4071BE         | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| CD4071BEE4       | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| CD4071BF         | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |
| CD4071BF3A       | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |
| CD4071BF3AS2534  | OBSOLETE              | CDIP         | J               | 14   |             | TBD                     | Call TI          | Call TI                      |
| CD4071BM         | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BM96       | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BM96E4     | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BM96G4     | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BME4       | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BMG4       | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BMT        | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BMTE4      | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BMTG4      | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BNSR       | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BNSRE4     | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BNSRG4     | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BPW        | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BPWE4      | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BPWG4      | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BPWR       | ACTIVE                | TSSOP        | PW              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BPWRE4     | ACTIVE                | TSSOP        | PW              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4071BPWRG4     | ACTIVE                | TSSOP        | PW              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BE         | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| CD4072BEE4       | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| CD4072BF         | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup> | Lead/Ball Finish | MSL Peak Temp <sup>(3)</sup> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| CD4072BF3A       | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |
| CD4072BM         | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BM96       | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BM96E4     | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BM96G4     | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BME4       | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BMG4       | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BMT        | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BMTE4      | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BMTG4      | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BNSR       | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BNSRE4     | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BNSRG4     | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BPW        | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BPWE4      | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4072BPWG4      | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BE         | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| CD4075BEE4       | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| CD4075BF         | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |
| CD4075BF3A       | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |
| CD4075BM         | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BM96       | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BM96E4     | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BM96G4     | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BME4       | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BMG4       | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BMT        | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup> | Lead/Ball Finish | MSL Peak Temp <sup>(3)</sup> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| CD4075BMTE4      | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BMTG4      | ACTIVE                | SOIC         | D               | 14   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BNSR       | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BNSRE4     | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BNSRG4     | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BPW        | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BPWE4      | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BPWG4      | ACTIVE                | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BPWR       | ACTIVE                | TSSOP        | PW              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BPWRE4     | ACTIVE                | TSSOP        | PW              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| CD4075BPWRG4     | ACTIVE                | TSSOP        | PW              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| JM38510/17101BCA | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |
| JM38510/17103BCA | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42              | N / A for Pkg Type           |

<sup>(1)</sup> The marketing status values are defined as follows:

**ACTIVE:** Product device recommended for new designs.

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**PREVIEW:** Device has been announced but is not in production. Samples may or may not be available.

**OBSELETE:** TI has discontinued the production of the device.

<sup>(2)</sup> Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check <http://www.ti.com/productcontent> for the latest availability information and additional product content details.

**TBD:** The Pb-Free/Green conversion plan has not been defined.

**Pb-Free (RoHS):** TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

**Pb-Free (RoHS Exempt):** This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

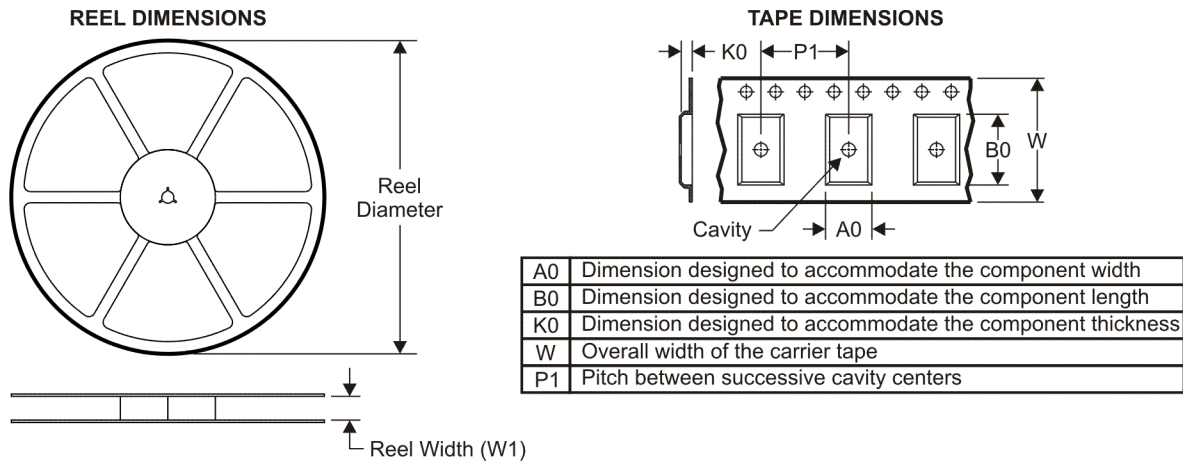
**Green (RoHS & no Sb/Br):** TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

<sup>(3)</sup> MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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**TAPE AND REEL INFORMATION**

**QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE**


\*All dimensions are nominal

| Device     | Package Type | Package Drawing | Pins | SPQ  | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| CD4071BM96 | SOIC         | D               | 14   | 2500 | 330.0              | 16.4               | 6.5     | 9.0     | 2.1     | 8.0     | 16.0   | Q1            |
| CD4071BNSR | SO           | NS              | 14   | 2000 | 330.0              | 16.4               | 8.2     | 10.5    | 2.5     | 12.0    | 16.0   | Q1            |
| CD4071BPWR | TSSOP        | PW              | 14   | 2000 | 330.0              | 12.4               | 7.0     | 5.6     | 1.6     | 8.0     | 12.0   | Q1            |
| CD4072BM96 | SOIC         | D               | 14   | 2500 | 330.0              | 16.4               | 6.5     | 9.0     | 2.1     | 8.0     | 16.0   | Q1            |
| CD4072BNSR | SO           | NS              | 14   | 2000 | 330.0              | 16.4               | 8.2     | 10.5    | 2.5     | 12.0    | 16.0   | Q1            |
| CD4075BM96 | SOIC         | D               | 14   | 2500 | 330.0              | 16.4               | 6.5     | 9.0     | 2.1     | 8.0     | 16.0   | Q1            |
| CD4075BNSR | SO           | NS              | 14   | 2000 | 330.0              | 16.4               | 8.2     | 10.5    | 2.5     | 12.0    | 16.0   | Q1            |
| CD4075BPWR | TSSOP        | PW              | 14   | 2000 | 330.0              | 12.4               | 7.0     | 5.6     | 1.6     | 8.0     | 12.0   | Q1            |

**TAPE AND REEL BOX DIMENSIONS**


\*All dimensions are nominal

| Device     | Package Type | Package Drawing | Pins | SPQ  | Length (mm) | Width (mm) | Height (mm) |
|------------|--------------|-----------------|------|------|-------------|------------|-------------|
| CD4071BM96 | SOIC         | D               | 14   | 2500 | 346.0       | 346.0      | 33.0        |
| CD4071BNSR | SO           | NS              | 14   | 2000 | 346.0       | 346.0      | 33.0        |
| CD4071BPWR | TSSOP        | PW              | 14   | 2000 | 346.0       | 346.0      | 29.0        |
| CD4072BM96 | SOIC         | D               | 14   | 2500 | 346.0       | 346.0      | 33.0        |
| CD4072BNSR | SO           | NS              | 14   | 2000 | 346.0       | 346.0      | 33.0        |
| CD4075BM96 | SOIC         | D               | 14   | 2500 | 346.0       | 346.0      | 33.0        |
| CD4075BNSR | SO           | NS              | 14   | 2000 | 346.0       | 346.0      | 33.0        |
| CD4075BPWR | TSSOP        | PW              | 14   | 2000 | 346.0       | 346.0      | 29.0        |



## MECHANICAL DATA

**NS (R-PDSO-G\*\*)**

**PLASTIC SMALL-OUTLINE PACKAGE**

**14-PINS SHOWN**



- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15.

PW (R-PDSO-G\*\*)

PLASTIC SMALL-OUTLINE PACKAGE

14 PINS SHOWN

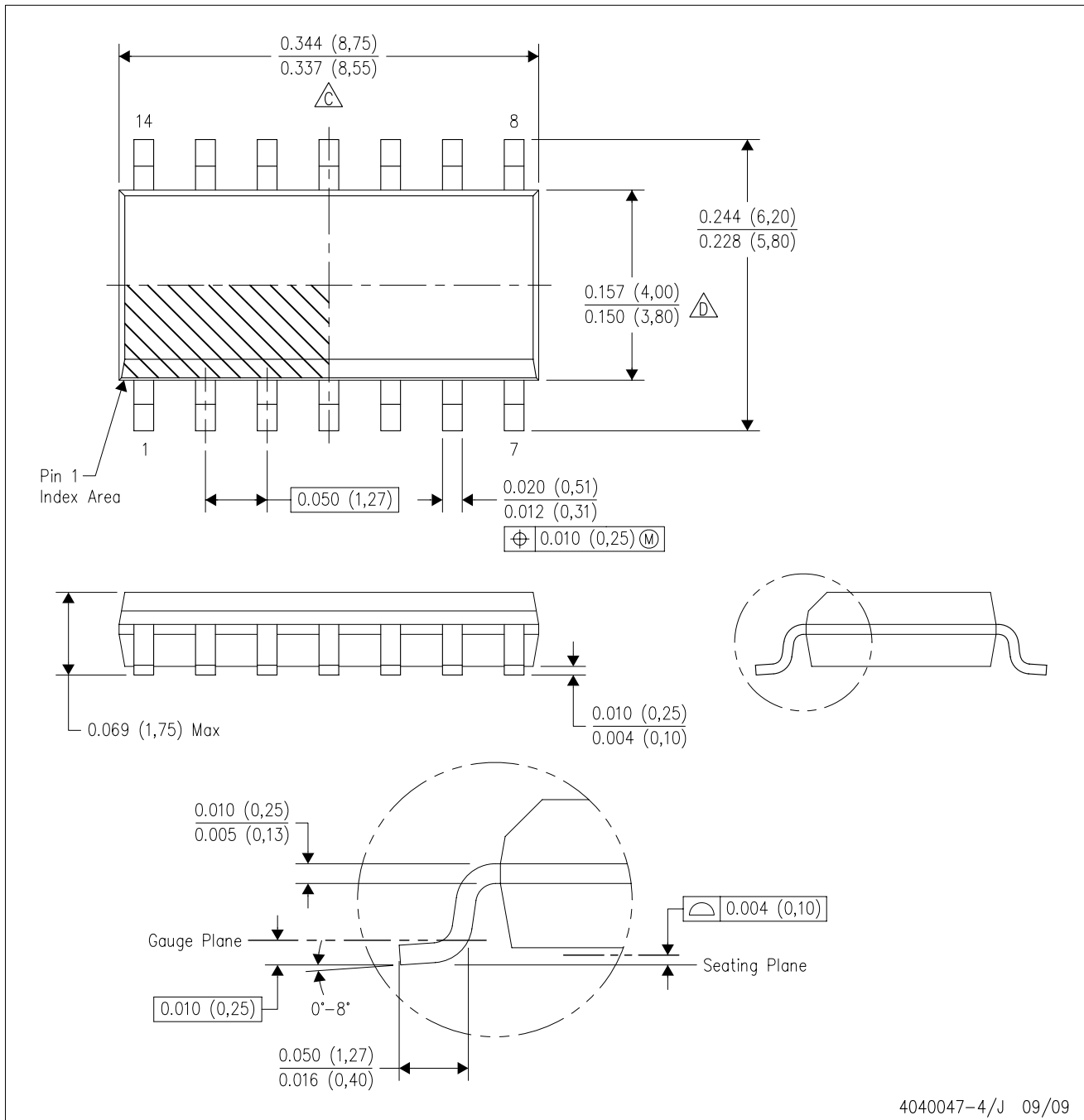


4040064/F 01/97

- NOTES: A. All linear dimensions are in millimeters.  
 B. This drawing is subject to change without notice.  
 C. Body dimensions do not include mold flash or protrusion not to exceed 0,15.  
 D. Falls within JEDEC MO-153

D (R-PDSO-G14)

PLASTIC SMALL-OUTLINE PACKAGE



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - $\triangle C$  Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed .006 (0,15) per end.
  - $\triangle D$  Body width does not include interlead flash. Interlead flash shall not exceed .017 (0,43) per side.
  - E. Reference JEDEC MS-012 variation AB.

N (R-PDIP-T\*\*)

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
  - The 20 pin end lead shoulder width is a vendor option, either half or full width.

**PACKAGING INFORMATION**

| Orderable Device | Status<br>(1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan<br>(2)            | Lead/Ball Finish<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5) | Samples                 |
|------------------|---------------|--------------|-----------------|------|-------------|----------------------------|-------------------------|----------------------|--------------|-------------------------|-------------------------|
| 7706002CA        | ACTIVE        | CDIP         | J               | 14   | 1           | TBD                        | A42                     | N / A for Pkg Type   | -55 to 125   | 7706002CA<br>CD4072BF3A | <a href="#">Samples</a> |
| CD4071BE         | ACTIVE        | PDIP         | N               | 14   | 25          | Pb-Free<br>(RoHS)          | CU NIPDAU               | N / A for Pkg Type   | -55 to 125   | CD4071BE                | <a href="#">Samples</a> |
| CD4071BEE4       | ACTIVE        | PDIP         | N               | 14   | 25          | Pb-Free<br>(RoHS)          | CU NIPDAU               | N / A for Pkg Type   | -55 to 125   | CD4071BE                | <a href="#">Samples</a> |
| CD4071BF         | ACTIVE        | CDIP         | J               | 14   | 1           | TBD                        | A42                     | N / A for Pkg Type   | -55 to 125   | CD4071BF                | <a href="#">Samples</a> |
| CD4071BF3A       | ACTIVE        | CDIP         | J               | 14   | 1           | TBD                        | A42                     | N / A for Pkg Type   | -55 to 125   | CD4071BF3A              | <a href="#">Samples</a> |
| CD4071BM         | ACTIVE        | SOIC         | D               | 14   | 50          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4071BM                | <a href="#">Samples</a> |
| CD4071BM96       | ACTIVE        | SOIC         | D               | 14   | 2500        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4071BM                | <a href="#">Samples</a> |
| CD4071BM96G4     | ACTIVE        | SOIC         | D               | 14   | 2500        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4071BM                | <a href="#">Samples</a> |
| CD4071BMG4       | ACTIVE        | SOIC         | D               | 14   | 50          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4071BM                | <a href="#">Samples</a> |
| CD4071BMT        | ACTIVE        | SOIC         | D               | 14   | 250         | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4071BM                | <a href="#">Samples</a> |
| CD4071BNSR       | ACTIVE        | SO           | NS              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4071B                 | <a href="#">Samples</a> |
| CD4071BNSRG4     | ACTIVE        | SO           | NS              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4071B                 | <a href="#">Samples</a> |
| CD4071BPW        | ACTIVE        | TSSOP        | PW              | 14   | 90          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM071B                  | <a href="#">Samples</a> |
| CD4071BPWE4      | ACTIVE        | TSSOP        | PW              | 14   | 90          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM071B                  | <a href="#">Samples</a> |
| CD4071BPWR       | ACTIVE        | TSSOP        | PW              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM071B                  | <a href="#">Samples</a> |
| CD4071BPWRE4     | ACTIVE        | TSSOP        | PW              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM071B                  | <a href="#">Samples</a> |
| CD4072BE         | ACTIVE        | PDIP         | N               | 14   | 25          | Pb-Free<br>(RoHS)          | CU NIPDAU               | N / A for Pkg Type   | -55 to 125   | CD4072BE                | <a href="#">Samples</a> |



| Orderable Device | Status<br>(1) | Package Type | Package<br>Drawing | Pins | Package<br>Qty | Eco Plan<br>(2)            | Lead/Ball Finish<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5) | Samples                 |
|------------------|---------------|--------------|--------------------|------|----------------|----------------------------|-------------------------|----------------------|--------------|-------------------------|-------------------------|
| CD4072BEE4       | ACTIVE        | PDIP         | N                  | 14   | 25             | Pb-Free<br>(RoHS)          | CU NIPDAU               | N / A for Pkg Type   | -55 to 125   | CD4072BE                | <a href="#">Samples</a> |
| CD4072BF         | ACTIVE        | CDIP         | J                  | 14   | 1              | TBD                        | A42                     | N / A for Pkg Type   | -55 to 125   | CD4072BF                | <a href="#">Samples</a> |
| CD4072BF3A       | ACTIVE        | CDIP         | J                  | 14   | 1              | TBD                        | A42                     | N / A for Pkg Type   | -55 to 125   | 7706002CA<br>CD4072BF3A | <a href="#">Samples</a> |
| CD4072BM         | ACTIVE        | SOIC         | D                  | 14   | 50             | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4072BM                | <a href="#">Samples</a> |
| CD4072BM96       | ACTIVE        | SOIC         | D                  | 14   | 2500           | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4072BM                | <a href="#">Samples</a> |
| CD4072BM96G4     | ACTIVE        | SOIC         | D                  | 14   | 2500           | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4072BM                | <a href="#">Samples</a> |
| CD4072BME4       | ACTIVE        | SOIC         | D                  | 14   | 50             | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4072BM                | <a href="#">Samples</a> |
| CD4072BMT        | ACTIVE        | SOIC         | D                  | 14   | 250            | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4072BM                | <a href="#">Samples</a> |
| CD4072BNSR       | ACTIVE        | SO           | NS                 | 14   | 2000           | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4072B                 | <a href="#">Samples</a> |
| CD4072BNSRE4     | ACTIVE        | SO           | NS                 | 14   | 2000           | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4072B                 | <a href="#">Samples</a> |
| CD4072BNSRG4     | ACTIVE        | SO           | NS                 | 14   | 2000           | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4072B                 | <a href="#">Samples</a> |
| CD4072BPW        | ACTIVE        | TSSOP        | PW                 | 14   | 90             | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM072B                  | <a href="#">Samples</a> |
| CD4072BPWG4      | ACTIVE        | TSSOP        | PW                 | 14   | 90             | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM072B                  | <a href="#">Samples</a> |
| CD4075BE         | ACTIVE        | PDIP         | N                  | 14   | 25             | Pb-Free<br>(RoHS)          | CU NIPDAU               | N / A for Pkg Type   | -55 to 125   | CD4075BE                | <a href="#">Samples</a> |
| CD4075BEE4       | ACTIVE        | PDIP         | N                  | 14   | 25             | Pb-Free<br>(RoHS)          | CU NIPDAU               | N / A for Pkg Type   | -55 to 125   | CD4075BE                | <a href="#">Samples</a> |
| CD4075BF         | ACTIVE        | CDIP         | J                  | 14   | 1              | TBD                        | A42                     | N / A for Pkg Type   | -55 to 125   | CD4075BF                | <a href="#">Samples</a> |
| CD4075BF3A       | ACTIVE        | CDIP         | J                  | 14   | 1              | TBD                        | A42                     | N / A for Pkg Type   | -55 to 125   | CD4075BF3A              | <a href="#">Samples</a> |
| CD4075BM         | ACTIVE        | SOIC         | D                  | 14   | 50             | Green (RoHS<br>& no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4075BM                | <a href="#">Samples</a> |

| Orderable Device | Status<br>(1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan<br>(2)         | Lead/Ball Finish<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5) | Samples                 |
|------------------|---------------|--------------|-----------------|------|-------------|-------------------------|-------------------------|----------------------|--------------|-------------------------|-------------------------|
| CD4075BM96       | ACTIVE        | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4075BM                | <a href="#">Samples</a> |
| CD4075BM96G4     | ACTIVE        | SOIC         | D               | 14   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4075BM                | <a href="#">Samples</a> |
| CD4075BNSR       | ACTIVE        | SO           | NS              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CD4075B                 | <a href="#">Samples</a> |
| CD4075BPW        | ACTIVE        | TSSOP        | PW              | 14   | 90          | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM075B                  | <a href="#">Samples</a> |
| CD4075BPWR       | ACTIVE        | TSSOP        | PW              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM075B                  | <a href="#">Samples</a> |
| CD4075BPWRE4     | ACTIVE        | TSSOP        | PW              | 14   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -55 to 125   | CM075B                  | <a href="#">Samples</a> |
| JM38510/17101BCA | ACTIVE        | CDIP         | J               | 14   | 1           | TBD                     | A42                     | N / A for Pkg Type   | -55 to 125   | JM38510/<br>17101BCA    | <a href="#">Samples</a> |
| JM38510/17103BCA | ACTIVE        | CDIP         | J               | 14   | 1           | TBD                     | A42                     | N / A for Pkg Type   | -55 to 125   | JM38510/<br>17103BCA    | <a href="#">Samples</a> |
| M38510/17101BCA  | ACTIVE        | CDIP         | J               | 14   | 1           | TBD                     | A42                     | N / A for Pkg Type   | -55 to 125   | JM38510/<br>17101BCA    | <a href="#">Samples</a> |
| M38510/17103BCA  | ACTIVE        | CDIP         | J               | 14   | 1           | TBD                     | A42                     | N / A for Pkg Type   | -55 to 125   | JM38510/<br>17103BCA    | <a href="#">Samples</a> |

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- (3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.
- (4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.
- (5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.
- (6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

**Important Information and Disclaimer:**The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

**OTHER QUALIFIED VERSIONS OF CD4071B, CD4071B-MIL, CD4072B, CD4072B-MIL, CD4075B, CD4075B-MIL :**

- Catalog: [CD4071B](#), [CD4072B](#), [CD4075B](#)
- Military: [CD4071B-MIL](#), [CD4072B-MIL](#), [CD4075B-MIL](#)

NOTE: Qualified Version Definitions:

- Catalog - TI's standard catalog product
- Military - QML certified for Military and Defense Applications

**TAPE AND REEL INFORMATION**

**QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE**


\*All dimensions are nominal

| Device     | Package Type | Package Drawing | Pins | SPQ  | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| CD4071BM96 | SOIC         | D               | 14   | 2500 | 330.0              | 16.4               | 6.5     | 9.0     | 2.1     | 8.0     | 16.0   | Q1            |
| CD4071BMT  | SOIC         | D               | 14   | 250  | 330.0              | 16.4               | 6.5     | 9.0     | 2.1     | 8.0     | 16.0   | Q1            |
| CD4071BNSR | SO           | NS              | 14   | 2000 | 330.0              | 16.4               | 8.2     | 10.5    | 2.5     | 12.0    | 16.0   | Q1            |
| CD4071BPWR | TSSOP        | PW              | 14   | 2000 | 330.0              | 12.4               | 6.9     | 5.6     | 1.6     | 8.0     | 12.0   | Q1            |
| CD4072BM96 | SOIC         | D               | 14   | 2500 | 330.0              | 16.4               | 6.5     | 9.0     | 2.1     | 8.0     | 16.0   | Q1            |
| CD4072BMT  | SOIC         | D               | 14   | 250  | 330.0              | 16.4               | 6.5     | 9.0     | 2.1     | 8.0     | 16.0   | Q1            |
| CD4072BNSR | SO           | NS              | 14   | 2000 | 330.0              | 16.4               | 8.2     | 10.5    | 2.5     | 12.0    | 16.0   | Q1            |
| CD4075BM96 | SOIC         | D               | 14   | 2500 | 330.0              | 16.4               | 6.5     | 9.0     | 2.1     | 8.0     | 16.0   | Q1            |
| CD4075BNSR | SO           | NS              | 14   | 2000 | 330.0              | 16.4               | 8.2     | 10.5    | 2.5     | 12.0    | 16.0   | Q1            |
| CD4075BPWR | TSSOP        | PW              | 14   | 2000 | 330.0              | 12.4               | 6.9     | 5.6     | 1.6     | 8.0     | 12.0   | Q1            |

**TAPE AND REEL BOX DIMENSIONS**


\*All dimensions are nominal

| Device     | Package Type | Package Drawing | Pins | SPQ  | Length (mm) | Width (mm) | Height (mm) |
|------------|--------------|-----------------|------|------|-------------|------------|-------------|
| CD4071BM96 | SOIC         | D               | 14   | 2500 | 367.0       | 367.0      | 38.0        |
| CD4071BMT  | SOIC         | D               | 14   | 250  | 367.0       | 367.0      | 38.0        |
| CD4071BNSR | SO           | NS              | 14   | 2000 | 367.0       | 367.0      | 38.0        |
| CD4071BPWR | TSSOP        | PW              | 14   | 2000 | 367.0       | 367.0      | 35.0        |
| CD4072BM96 | SOIC         | D               | 14   | 2500 | 367.0       | 367.0      | 38.0        |
| CD4072BMT  | SOIC         | D               | 14   | 250  | 367.0       | 367.0      | 38.0        |
| CD4072BNSR | SO           | NS              | 14   | 2000 | 367.0       | 367.0      | 38.0        |
| CD4075BM96 | SOIC         | D               | 14   | 2500 | 367.0       | 367.0      | 38.0        |
| CD4075BNSR | SO           | NS              | 14   | 2000 | 367.0       | 367.0      | 38.0        |
| CD4075BPWR | TSSOP        | PW              | 14   | 2000 | 367.0       | 367.0      | 35.0        |

## MECHANICAL DATA

NS (R-PDSO-G\*\*)

PLASTIC SMALL-OUTLINE PACKAGE

14-PINS SHOWN



- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15.

J (R-GDIP-T\*\*)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



| DIM \ PINS ** | 14                     | 16                     | 18                     | 20                     |
|---------------|------------------------|------------------------|------------------------|------------------------|
| A             | 0.300<br>(7,62)<br>BSC | 0.300<br>(7,62)<br>BSC | 0.300<br>(7,62)<br>BSC | 0.300<br>(7,62)<br>BSC |
| B MAX         | 0.785<br>(19,94)       | .840<br>(21,34)        | 0.960<br>(24,38)       | 1.060<br>(26,92)       |
| B MIN         | —                      | —                      | —                      | —                      |
| C MAX         | 0.300<br>(7,62)        | 0.300<br>(7,62)        | 0.310<br>(7,87)        | 0.300<br>(7,62)        |
| C MIN         | 0.245<br>(6,22)        | 0.245<br>(6,22)        | 0.220<br>(5,59)        | 0.245<br>(6,22)        |



4040083/F 03/03

- NOTES:
- All linear dimensions are in inches (millimeters).
  - This drawing is subject to change without notice.
  - This package is hermetically sealed with a ceramic lid using glass frit.
  - Index point is provided on cap for terminal identification only on press ceramic glass frit seal only.
  - Falls within MIL STD 1835 GDIP1-T14, GDIP1-T16, GDIP1-T18 and GDIP1-T20.

D (R-PDSO-G14)

PLASTIC SMALL OUTLINE



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.006 (0,15) each side.
  - Body width does not include interlead flash. Interlead flash shall not exceed 0.017 (0,43) each side.
  - E. Reference JEDEC MS-012 variation AB.



D (R-PDSO-G14)

PLASTIC SMALL OUTLINE



4211283-3/E 08/12

- NOTES:
- All linear dimensions are in millimeters.
  - This drawing is subject to change without notice.
  - Publication IPC-7351 is recommended for alternate designs.
  - Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
  - Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.

PW (R-PDSO-G14)

PLASTIC SMALL OUTLINE



- NOTES:
- A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M-1994.
  - B. This drawing is subject to change without notice.
  - C. Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0,15 each side.
  - D. Body width does not include interlead flash. Interlead flash shall not exceed 0,25 each side.
  - E. Falls within JEDEC MO-153

PW (R-PDSO-G14)

PLASTIC SMALL OUTLINE



4211284-2/G 08/15

- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Publication IPC-7351 is recommended for alternate designs.
  - D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
  - E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.

N (R-PDIP-T\*\*)

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - $\triangle C$  Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
  - $\triangle D$  The 20 pin end lead shoulder width is a vendor option, either half or full width.

4040049/E 12/2002

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