# SN54HC365 THRU SN54HC368
# SN74HC365 THRU SN74HC368
# HEX BUS DRIVERS WITH 3-STATE OUTPUTS

SCLS139 D2684, DECEMBER 1982—REVISED JUNE 1989

- **High-Current 3-State Outputs Drive Bus Lines, Buffer Memory Address Registers, or Up to 15 LSTTL Loads**
- **Choice of True or Inverting Outputs**
- **Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers, and Standard Plastic and Ceramic 300-mil DIPs**
- **Dependable Texas Instruments Quality and Reliability**

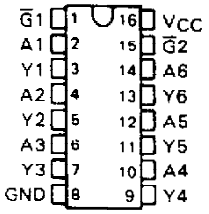
| | |
|---|---|
| **'HC365, HC367** | **True Outputs** |
| **'HC366, HC368** | **Inverting Outputs** |

## description

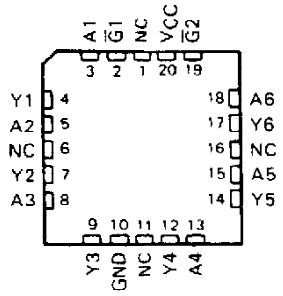
These Hex buffers and line drivers are designed specifically to improve both the performance and density of three-state memory address drivers, clock drivers, and bus-oriented receivers and transmitters. The designer has a choice of selected combinations of inverting and noninverting outputs, symmetrical G (active-low control) inputs.

The SN54HC' family is characterized for operation over the full military temperature range of −55°C to 125°C. The SN74HC' family is characterized for operation from −40°C to 85°C.

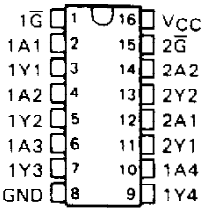
**SN54HC365, SN54HC366 . . . J PACKAGE**
**SN74HC365, SN74HC366 . . . D† OR N PACKAGE**
**(TOP VIEW)**



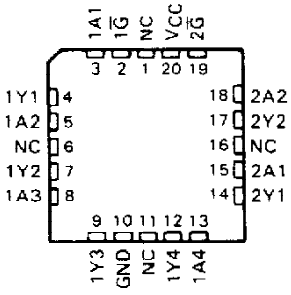

**SN54HC365, SN54HC366 . . . FK PACKAGE**
**(TOP VIEW)**




**SN54HC367, SN54HC368 . . . J PACKAGE**
**SN74HC367, SN74HC368 . . . D† OR N PACKAGE**
**(TOP VIEW)**




**SN54HC367, SN54HC368 . . . FK PACKAGE**
**(TOP VIEW)**




NC—No internal connection

† Contact the factory for D availability.

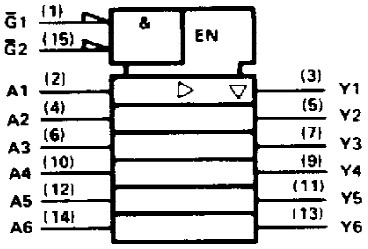
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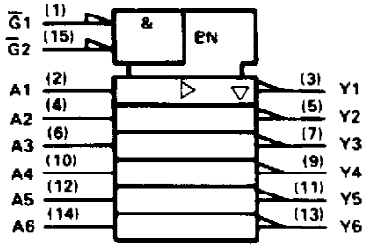
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## logic symbols†

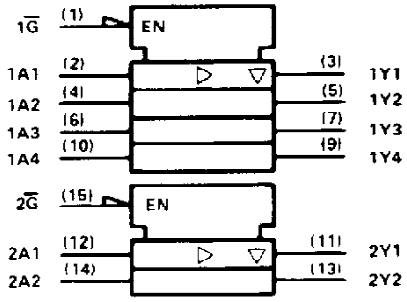
'HC365



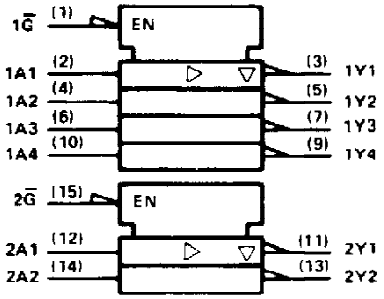

'HC366




'HC367

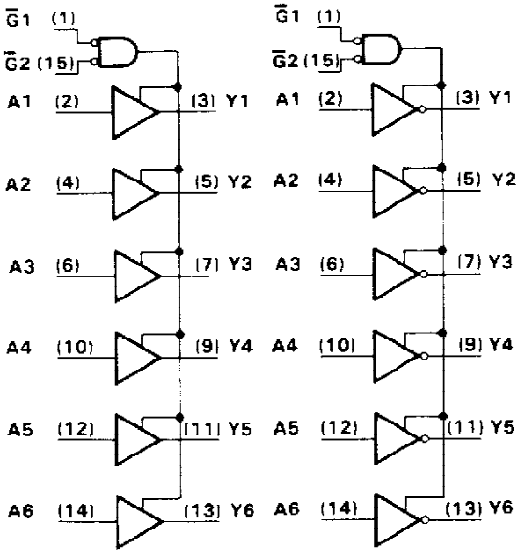



'HC368

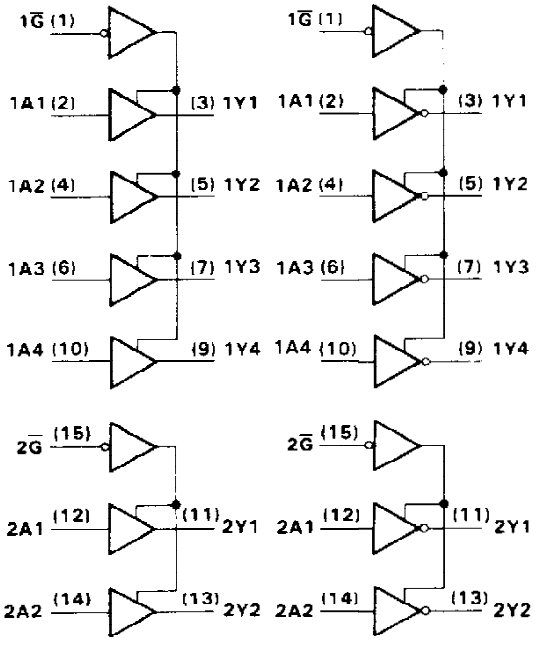



## logic diagrams (positive logic)

'HC365 'HC366




'HC367 'HC368




†These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.
Pin numbers shown are for D, J, and N packages.

### absolute maximum ratings over operating free-air temperature range†

Supply voltage, $V_{CC}$ . . . . . −0.5 V to 7 V
Input clamp current, $I_{IK}$ ($V_I < 0$ or $V_I > V_{CC}$) . . . . . ±20 mA
Output clamp current, $I_{OK}$ ($V_O < 0$ or $V_O > V_{CC}$) . . . . . ±20 mA
Continuous output current, $I_O$ ($V_O = 0$ to $V_{CC}$) . . . . . ±35 mA
Continuous current through $V_{CC}$ or GND pins . . . . . ±70 mA
Lead temperature 1,6 mm (1/16 in) from case for 60 s: FK or J package . . . . . 300°C
Lead temperature 1,6 mm (1/16 in) from case for 10 s: D or N package . . . . . 260°C
Storage temperature range . . . . . −65°C to 150°C

†Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

### recommended operating conditions

| | | | SN54HC365 thru SN54HC368 | | | SN74HC365 thru SN74HC368 | | | UNIT |
|---|---|---|---|---|---|---|---|---|---|
| | | | MIN | NOM | MAX | MIN | NOM | MAX | |
| $V_{CC}$ | Supply voltage | | 2 | 5 | 6 | 2 | 5 | 6 | V |
| $V_{IH}$ | High-level input voltage | $V_{CC}$ = 2 V | 1.5 | | | 1.5 | | | V |
| | | $V_{CC}$ = 4.5 V | 3.15 | | | 3.15 | | | |
| | | $V_{CC}$ = 6 V | 4.2 | | | 4.2 | | | |
| $V_{IL}$ | Low-level input voltage | $V_{CC}$ = 2 V | 0 | | 0.3 | 0 | | 0.3 | V |
| | | $V_{CC}$ = 4.5 V | 0 | | 0.9 | 0 | | 0.9 | |
| | | $V_{CC}$ = 6 V | 0 | | 1.2 | 0 | | 1.2 | |
| $V_I$ | Input voltage | | 0 | | $V_{CC}$ | 0 | | $V_{CC}$ | V |
| $V_O$ | Output voltage | | 0 | | $V_{CC}$ | 0 | | $V_{CC}$ | V |
| $t_t$ | Input transition (rise and fall) times | $V_{CC}$ = 2 V | 0 | | 1000 | 0 | | 1000 | ns |
| | | $V_{CC}$ = 4.5 V | 0 | | 500 | 0 | | 500 | |
| | | $V_{CC}$ = 6 V | 0 | | 400 | 0 | | 400 | |
| $T_A$ | Operating free-air temperature | | −55 | | 125 | −40 | | 85 | °C |

**electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)**

| PARAMETER | TEST CONDITIONS | $V_{CC}$ | $T_A$ = 25°C | | | SN54HC365 thru SN54HC368 | | SN74HC365 thru SN74HC368 | | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | MIN | TYP | MAX | MIN | MAX | MIN | MAX | |
| $V_{OH}$ | $V_I$ = $V_{IH}$ or $V_{IL}$, $I_{OH}$ = −20 μA | 2 V | 1.9 | 1.998 | | 1.9 | | 1.9 | | V |
| | | 4.5 V | 4.4 | 4.499 | | 4.4 | | 4.4 | | |
| | | 6 V | 5.9 | 5.999 | | 5.9 | | 5.9 | | |
| | $V_I$ = $V_{IH}$ or $V_{IL}$, $I_{OH}$ = −6 mA | 4.5 V | 3.98 | 4.30 | | 3.7 | | 3.84 | | |
| | $V_I$ = $V_{IH}$ or $V_{IL}$, $I_{OH}$ = −7.8 mA | 6 V | 5.48 | 5.80 | | 5.2 | | 5.34 | | |
| $V_{OL}$ | $V_I$ = $V_{IH}$ or $V_{IL}$, $I_{OL}$ = 20 μA | 2 V | | 0.002 | 0.1 | | 0.1 | | 0.1 | V |
| | | 4.5 V | | 0.001 | 0.1 | | 0.1 | | 0.1 | |
| | | 6 V | | 0.001 | 0.1 | | 0.1 | | 0.1 | |
| | $V_I$ = $V_{IH}$ or $V_{IL}$, $I_{OL}$ = 6 mA | 4.5 V | | 0.17 | 0.26 | | 0.4 | | 0.33 | |
| | $V_I$ = $V_{IH}$ or $V_{IL}$, $I_{OL}$ = 7.8 mA | 6 V | | 0.15 | 0.26 | | 0.4 | | 0.33 | |
| $I_I$ | $V_I$ = $V_{CC}$ or 0 | 6 V | | ±0.1 | ±100 | | ±1000 | | ±1000 | nA |
| $I_{OZ}$ | $V_O$ = $V_{CC}$ or 0 | 6 | | ±0.01 | ±0.5 | | ±10 | | ±5 | μA |
| $I_{CC}$ | $V_I$ = $V_{CC}$ or 0, $I_O$ = 0 | 6 V | | | 8 | | 160 | | 80 | μA |
| $C_i$ | | 2 to 6 V | | 3 | 10 | | 10 | | 10 | pF |

**switching characteristics over recommended operating free-air temperature range (unless otherwise noted), $C_L$ = 50 pF (see Note 1)**

| PARAMETER | FROM (INPUT) | TO (OUTPUT) | $V_{CC}$ | $T_A$ = 25°C | | | SN54HC' | | SN74HC' | | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MIN | TYP | MAX | MIN | MAX | MIN | MAX | |
| $t_{pd}$ | A | Y | 2 V | | 50 | 95 | | 145 | | 120 | ns |
| | | | 4.5 V | | 12 | 19 | | 29 | | 24 | |
| | | | 6 V | | 10 | 16 | | 25 | | 20 | |
| $t_{en}$ | $\overline{G}$ | Y | 2 V | | 100 | 190 | | 285 | | 238 | ns |
| | | | 4.5 V | | 26 | 38 | | 57 | | 48 | |
| | | | 6 V | | 21 | 32 | | 48 | | 41 | |
| $t_{dis}$ | $\overline{G}$ | Y | 2 V | | 50 | 175 | | 265 | | 240 | ns |
| | | | 4.5 V | | 21 | 35 | | 53 | | 48 | |
| | | | 6 V | | 19 | 30 | | 45 | | 41 | |
| $t_t$ | | Any | 2 V | | 28 | 60 | | 90 | | 75 | ns |
| | | | 4.5 V | | 8 | 12 | | 18 | | 15 | |
| | | | 6 V | | 6 | 10 | | 15 | | 13 | |

| | | | |
|---|---|---|---|
| $C_{pd}$ | Power dissipation capacitance per driver | No load, $T_A$ = 25°C | 35 pF typ |

**switching characteristics over recommended operating free-air temperature range (unless otherwise noted), $C_L$ = 150 pF (see Note 1)**

| PARAMETER | FROM (INPUT) | TO (OUTPUT) | $V_{CC}$ | $T_A$ = 25°C | | | SN54HC' | | SN74HC' | | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MIN | TYP | MAX | MIN | MAX | MIN | MAX | |
| $t_{pd}$ | A | Y | 2 V | | 70 | 120 | | 180 | | 150 | ns |
| | | | 4.5 V | | 17 | 24 | | 36 | | 30 | |
| | | | 6 V | | 14 | 20 | | 31 | | 25 | |
| $t_{en}$ | $\overline{G}$ | Y | 2 V | | 140 | 230 | | 345 | | 285 | ns |
| | | | 4.5 V | | 30 | 46 | | 69 | | 57 | |
| | | | 6 V | | 28 | 39 | | 59 | | 48 | |
| $t_t$ | | | 2 V | | 45 | 210 | | 315 | | 265 | ns |
| | | | 4.5 V | | 17 | 42 | | 63 | | 53 | |
| | | | 6 V | | 13 | 36 | | 53 | | 45 | |

NOTE 1: Load circuit and voltage waveforms are shown in Section 1.

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## PACKAGING INFORMATION

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead/Ball Finish | MSL Peak Temp (3) |
|---|---|---|---|---|---|---|---|---|
| 5962-86812012A | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 5962-8681201EA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 5962-8681201EA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 5962-86828012A | OBSOLETE | LCCC | FK | 20 | | TBD | Call TI | Call TI |
| 5962-86828012A | OBSOLETE | LCCC | FK | 20 | | TBD | Call TI | Call TI |
| 5962-8682801EA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 5962-8682801EA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 85001012A | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 85001012A | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 8500101EA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 8500101EA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 85002012A | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 85002012A | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 8500201EA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| 8500201EA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| JM38510/65706BEA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| JM38510/65706BEA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| JM38510/65708BEA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| JM38510/65708BEA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| JM38510/65708BFA | ACTIVE | CFP | W | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| JM38510/65708BFA | ACTIVE | CFP | W | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| JM38510/65709BEA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| JM38510/65709BEA | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN54HC365J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN54HC365J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN54HC366J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN54HC366J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN54HC367J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN54HC367J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN54HC368J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN54HC368J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SN74HC365D | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365D | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DE4 | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DE4 | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DR | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DR | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DRE4 | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & | CU NIPDAU | Level-1-260C-UNLIM |

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead/Ball Finish | MSL Peak Temp (3) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | no Sb/Br) | | |
| SN74HC365DRE4 | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DT | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DT | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DTE4 | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365DTE4 | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365N | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC365N | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC365NSR | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365NSR | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365NSRE4 | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365NSRE4 | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PW | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PW | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWE4 | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWE4 | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWR | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWR | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWRE4 | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWRE4 | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWT | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWT | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWTE4 | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC365PWTE4 | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367D | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367D | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead/Ball Finish | MSL Peak Temp (3) |
|---|---|---|---|---|---|---|---|---|
| SN74HC367DE4 | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DE4 | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DR | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DR | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DRE4 | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DRE4 | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DT | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DT | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DTE4 | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367DTE4 | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367N | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC367N | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC367NE4 | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC367NE4 | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC367NSR | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367NSR | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367NSRE4 | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367NSRE4 | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PW | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PW | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWE4 | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWE4 | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWR | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWR | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWRE4 | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWRE4 | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead/Ball Finish | MSL Peak Temp (3) |
|---|---|---|---|---|---|---|---|---|
| SN74HC367PWT | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWT | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWTE4 | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC367PWTE4 | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368D | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368D | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DBR | ACTIVE | SSOP | DB | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DBR | ACTIVE | SSOP | DB | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DBRE4 | ACTIVE | SSOP | DB | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DBRE4 | ACTIVE | SSOP | DB | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DE4 | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DE4 | ACTIVE | SOIC | D | 16 | 40 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DR | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DR | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DRE4 | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DRE4 | ACTIVE | SOIC | D | 16 | 2500 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DT | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DT | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DTE4 | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368DTE4 | ACTIVE | SOIC | D | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368N | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC368N | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC368NE4 | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC368NE4 | ACTIVE | PDIP | N | 16 | 25 | Pb-Free (RoHS) | CU NIPDAU | Level-NC-NC-NC |
| SN74HC368NSR | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368NSR | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead/Ball Finish | MSL Peak Temp (3) |
|---|---|---|---|---|---|---|---|---|
| SN74HC368NSRE4 | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368NSRE4 | ACTIVE | SO | NS | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PW | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PW | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWE4 | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWE4 | ACTIVE | TSSOP | PW | 16 | 90 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWR | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWR | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWRE4 | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWRE4 | ACTIVE | TSSOP | PW | 16 | 2000 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWT | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWT | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWTE4 | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SN74HC368PWTE4 | ACTIVE | TSSOP | PW | 16 | 250 | Green (RoHS & no Sb/Br) | CU NIPDAU | Level-1-260C-UNLIM |
| SNJ54HC365FK | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC365FK | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC365J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC365J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC366FK | OBSOLETE | | | 20 | | TBD | Call TI | Call TI |
| SNJ54HC366FK | OBSOLETE | | | 20 | | TBD | Call TI | Call TI |
| SNJ54HC366J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC366J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC367FK | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC367FK | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC367J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC367J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC368FK | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC368FK | ACTIVE | LCCC | FK | 20 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC368J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |
| SNJ54HC368J | ACTIVE | CDIP | J | 16 | 1 | TBD | Call TI | Level-NC-NC-NC |

(1) The marketing status values are defined as follows:
**ACTIVE:** Product device recommended for new designs.
**LIFEBUY:** TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
**NRND:** Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in

a new design.
**PREVIEW:** Device has been announced but is not in production. Samples may or may not be available.
**OBSOLETE:** TI has discontinued the production of the device.

**(2)** Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS) 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.
**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)

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

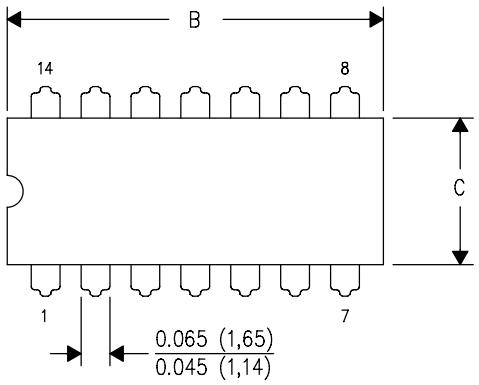
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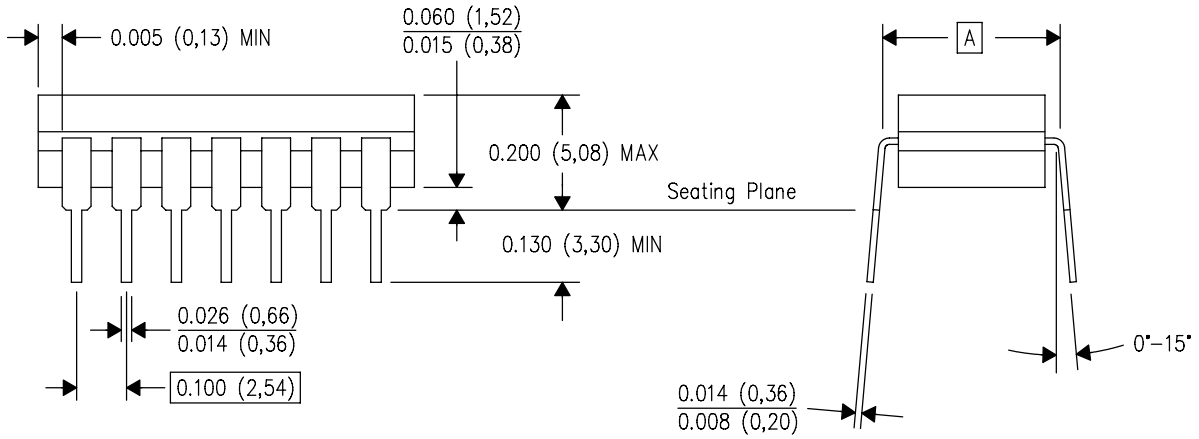
J (R–GDIP–T**)

14 LEADS SHOWN

# CERAMIC DUAL IN–LINE PACKAGE



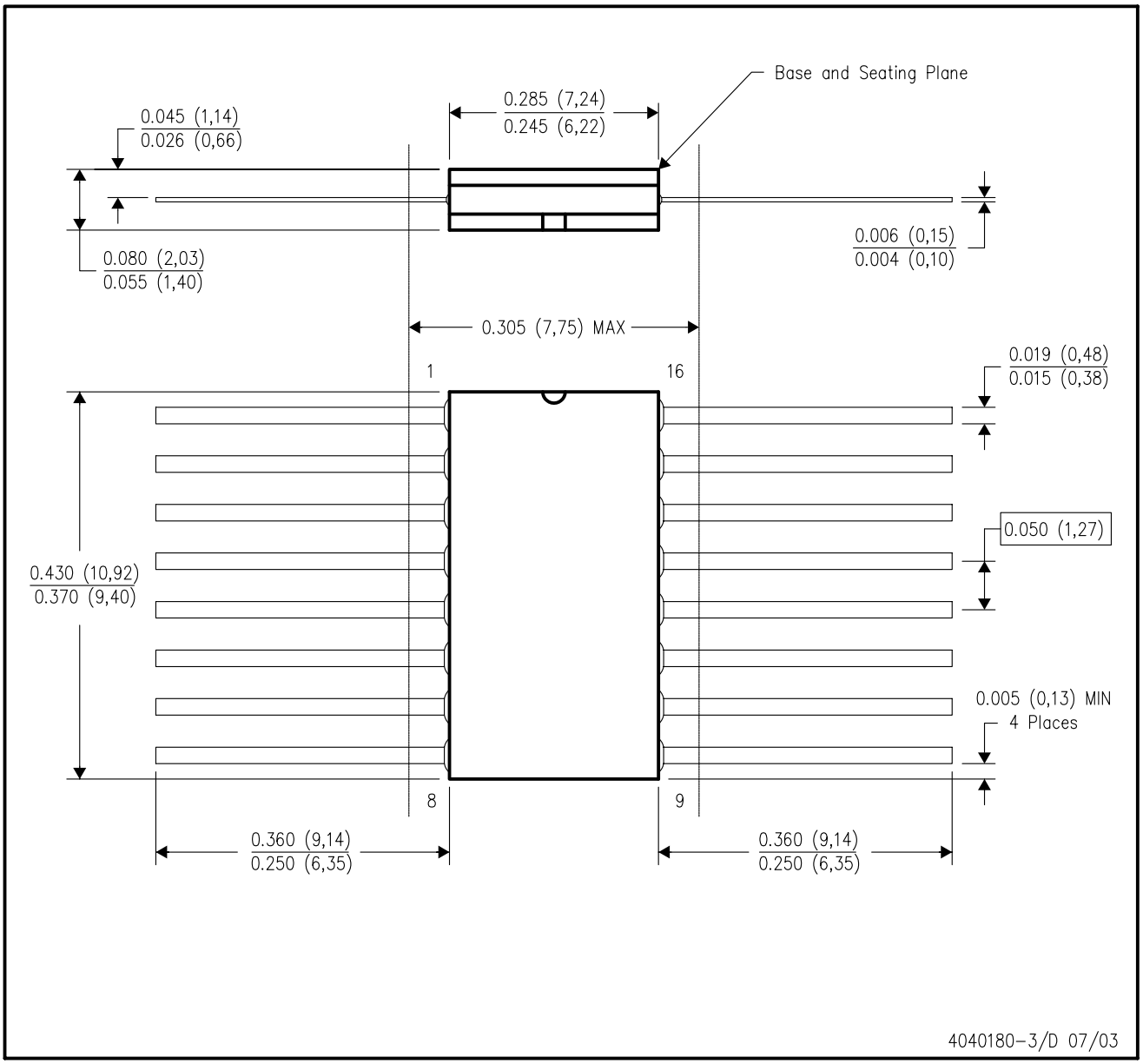

| DIM \ PINS ** | 14 | 16 | 18 | 20 |
|---|---|---|---|---|
| A | 0.300 (7,62) BSC | 0.300 (7,62) BSC | 0.300 (7,62) BSC | 0.300 (7,62) BSC |
| B MAX | 0.785 (19,94) | .840 (21,34) | 0.960 (24,38) | 1.060 (26,92) |
| B MIN | — | — | — | — |
| C MAX | 0.300 (7,62) | 0.300 (7,62) | 0.310 (7,87) | 0.300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




4040083/F 03/03

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

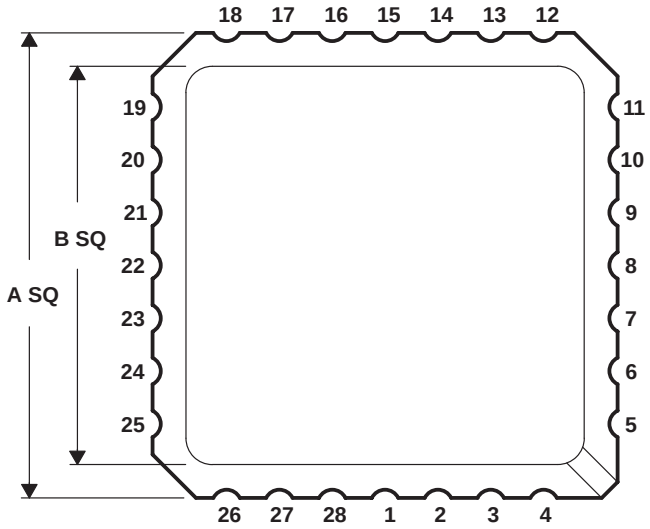
## W (R–GDFP–F16) CERAMIC DUAL FLATPACK



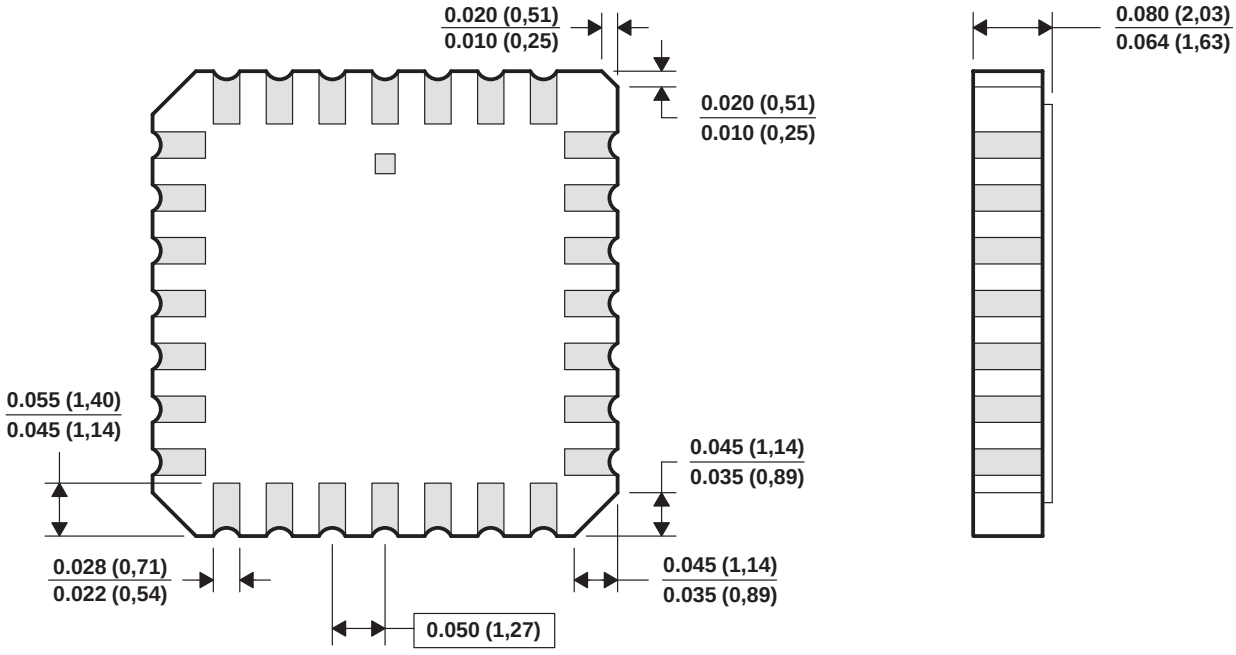

NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. This package can be hermetically sealed with a ceramic lid using glass frit.
D. Index point is provided on cap for terminal identification only.
E. Falls within MIL STD 1835 GDFP1–F16 and JEDEC MO–092AC

**FK (S-CQCC-N**)** **LEADLESS CERAMIC CHIP CARRIER**

**28 TERMINAL SHOWN**




| NO. OF TERMINALS ** | A | | B | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| 20 | 0.342 (8,69) | 0.358 (9,09) | 0.307 (7,80) | 0.358 (9,09) |
| 28 | 0.442 (11,23) | 0.458 (11,63) | 0.406 (10,31) | 0.458 (11,63) |
| 44 | 0.640 (16,26) | 0.660 (16,76) | 0.495 (12,58) | 0.560 (14,22) |
| 52 | 0.739 (18,78) | 0.761 (19,32) | 0.495 (12,58) | 0.560 (14,22) |
| 68 | 0.938 (23,83) | 0.962 (24,43) | 0.850 (21,6) | 0.858 (21,8) |
| 84 | 1.141 (28,99) | 1.165 (29,59) | 1.047 (26,6) | 1.063 (27,0) |



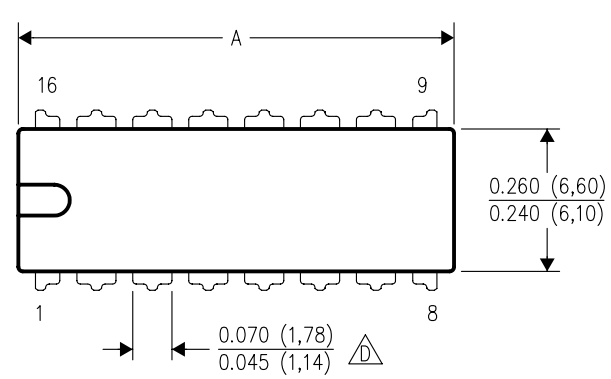

**4040140/D 10/96**

NOTES: A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. This package can be hermetically sealed with a metal lid.
D. The terminals are gold plated.
E. Falls within JEDEC MS-004

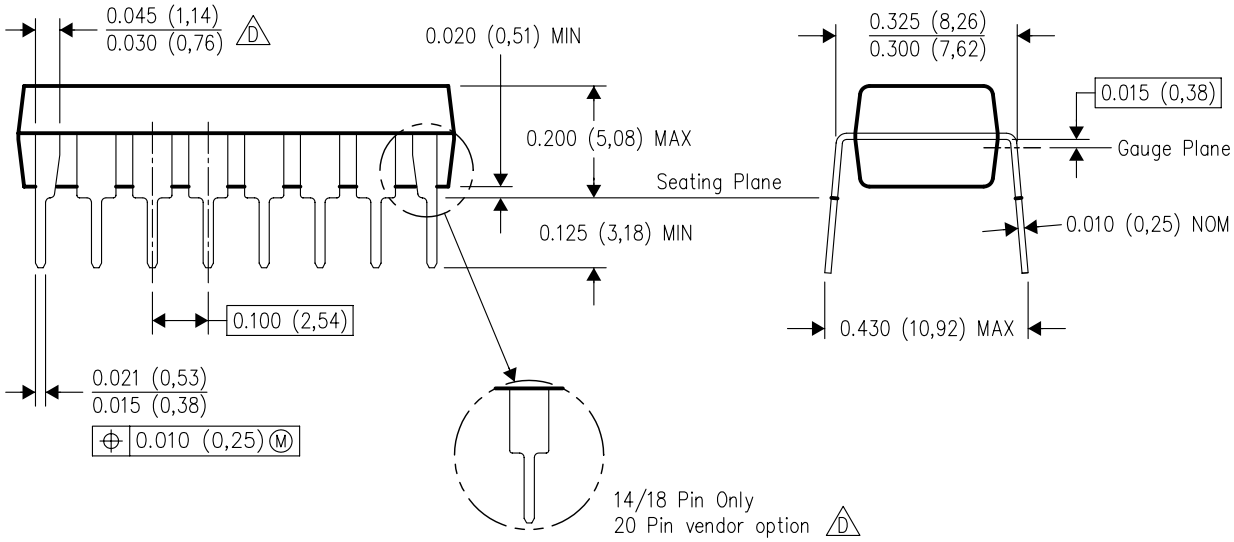
## N (R–PDIP–T**)

## PLASTIC DUAL–IN–LINE PACKAGE

16 PINS SHOWN



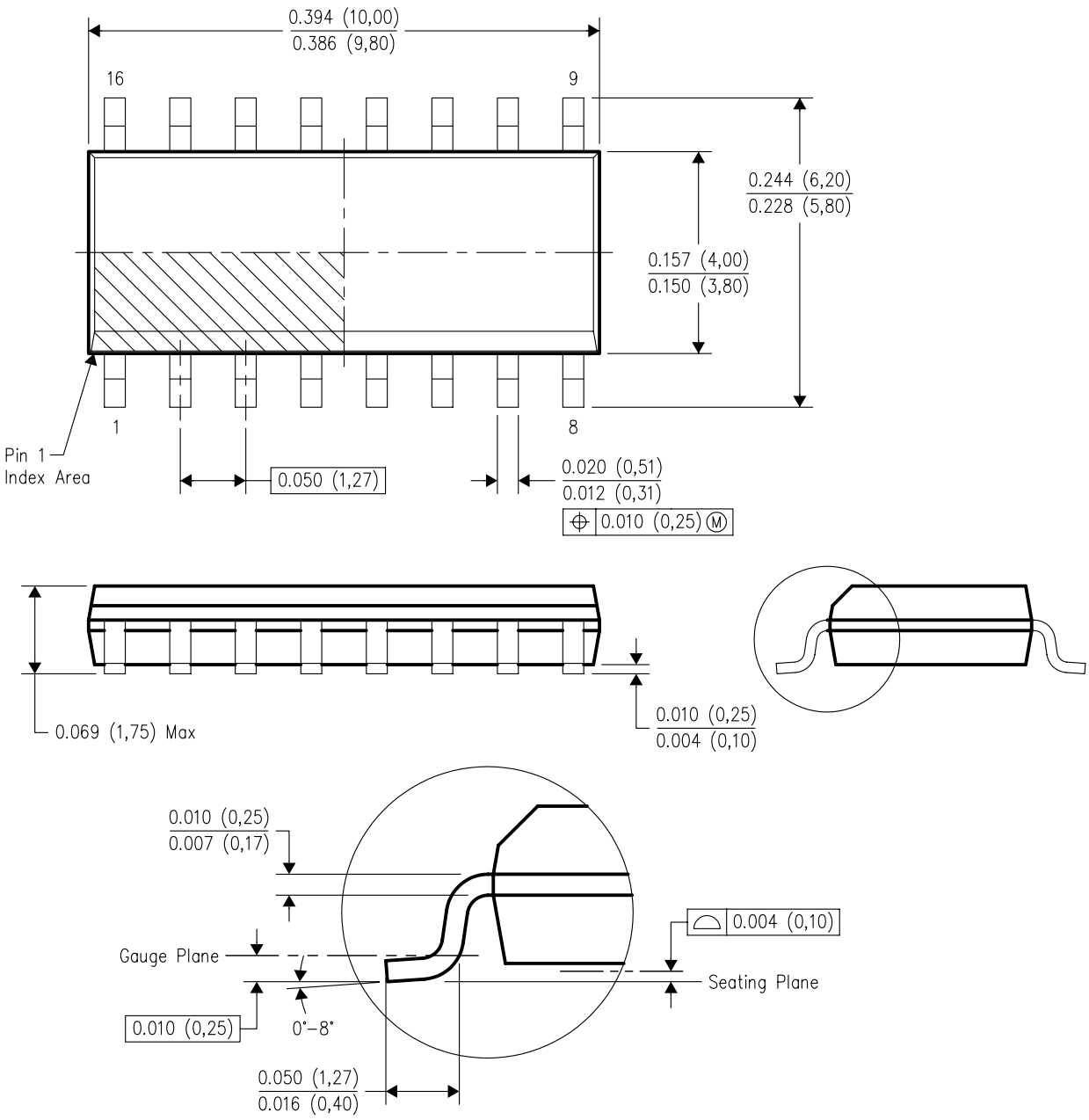

| DIM \ PINS ** | 14 | 16 | 18 | 20 |
|---|---|---|---|---|
| A MAX | 0.775 (19,69) | 0.775 (19,69) | 0.920 (23,37) | 1.060 (26,92) |
| A MIN | 0.745 (18,92) | 0.745 (18,92) | 0.850 (21,59) | 0.940 (23,88) |
| MS–001 VARIATION (C) | AA | BB | AC | AD |




4040049/E 12/2002

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

## D (R–PDSO–G16) PLASTIC SMALL–OUTLINE PACKAGE

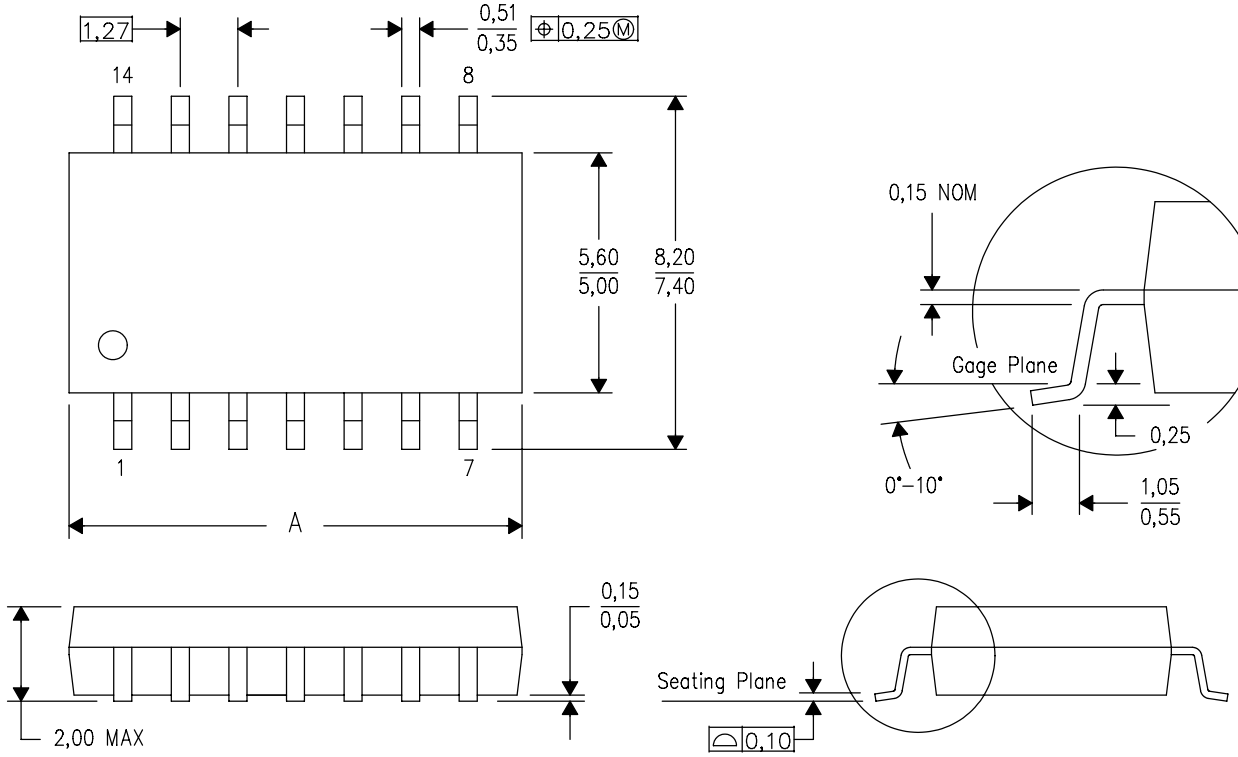



NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
D. Falls within JEDEC MS–012 variation AC.

## MECHANICAL DATA

**NS (R-PDSO-G**)** **PLASTIC SMALL-OUTLINE PACKAGE**

**14-PINS SHOWN**




| DIM \ PINS ** | 14 | 16 | 20 | 24 |
|---|---|---|---|---|
| A MAX | 10,50 | 10,50 | 12,90 | 15,30 |
| A MIN | 9,90 | 9,90 | 12,30 | 14,70 |

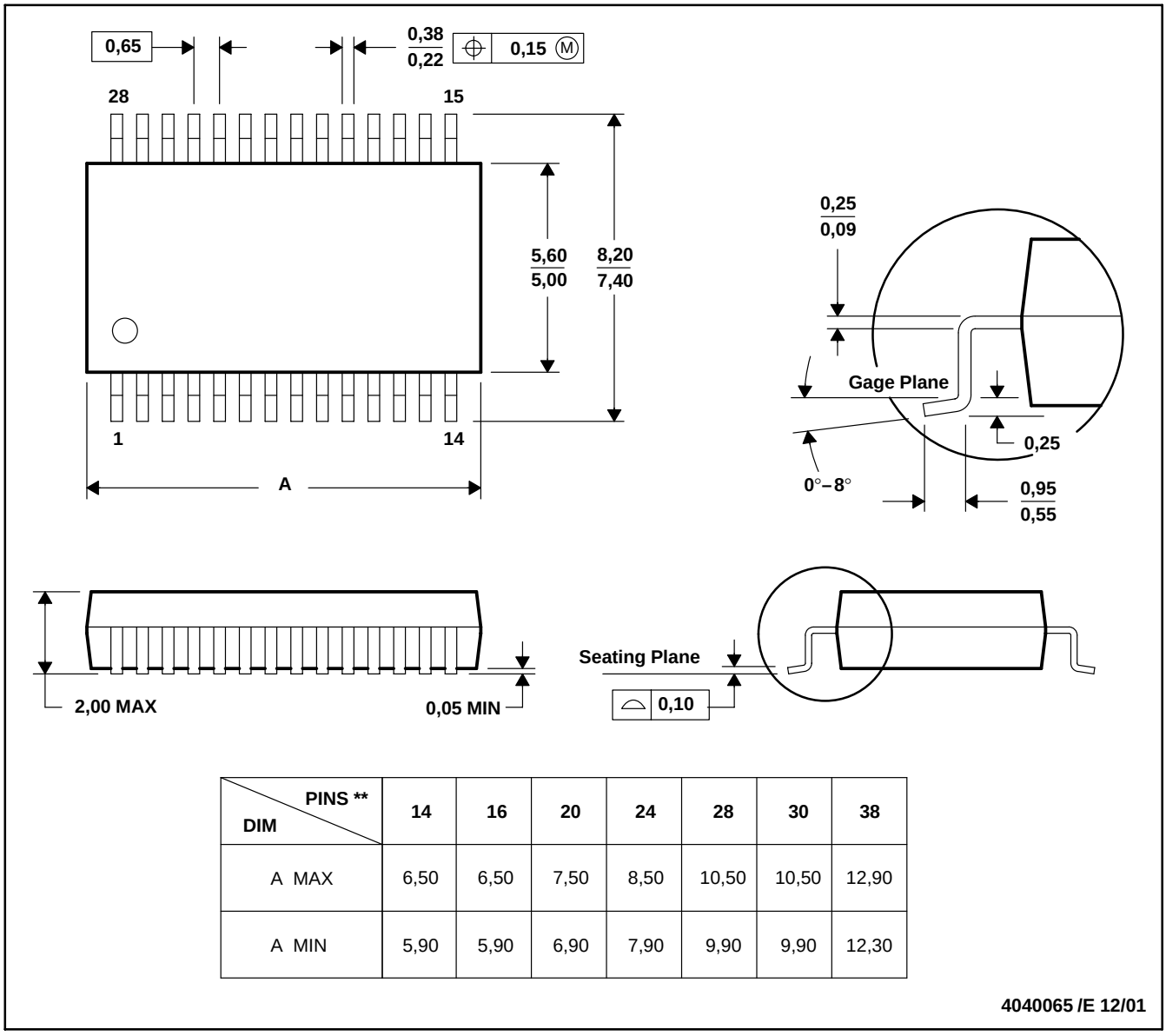
4040062/C 03/03

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.

MSSO002E – JANUARY 1995 – REVISED DECEMBER 2001

**DB (R-PDSO-G**)** **PLASTIC SMALL-OUTLINE**

**28 PINS SHOWN**



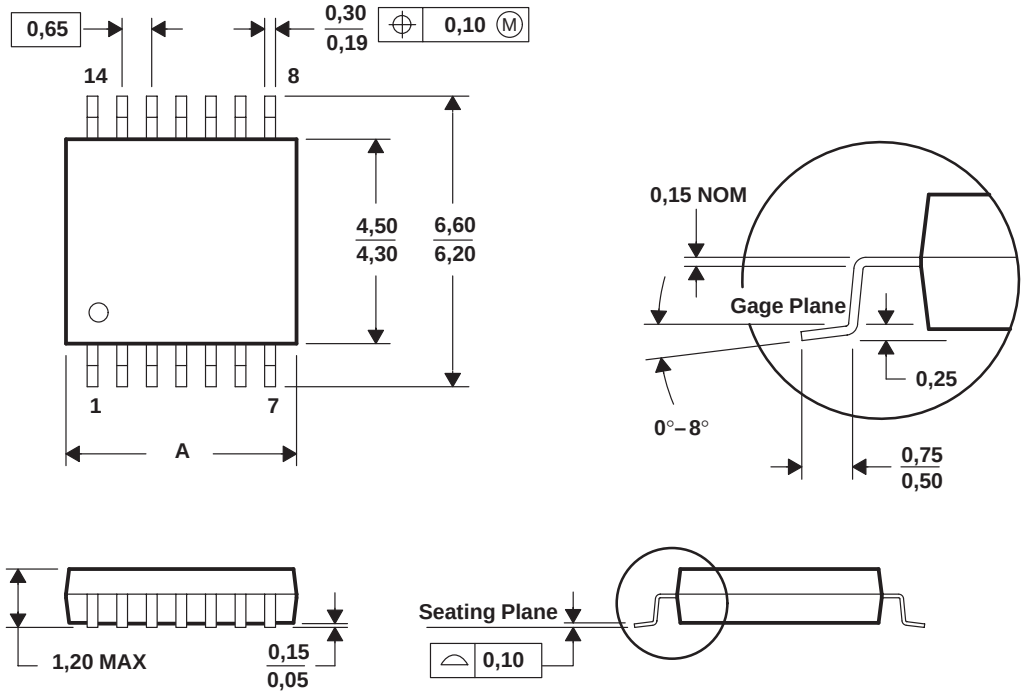

| DIM \ PINS ** | 14 | 16 | 20 | 24 | 28 | 30 | 38 |
|---|---|---|---|---|---|---|---|
| A MAX | 6,50 | 6,50 | 7,50 | 8,50 | 10,50 | 10,50 | 12,90 |
| A MIN | 5,90 | 5,90 | 6,90 | 7,90 | 9,90 | 9,90 | 12,30 |

**4040065 /E 12/01**

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-150

**PW (R-PDSO-G**)** **PLASTIC SMALL-OUTLINE PACKAGE**

**14 PINS SHOWN**




| DIM \ PINS ** | 8 | 14 | 16 | 20 | 24 | 28 |
|---|---|---|---|---|---|---|
| A MAX | 3,10 | 5,10 | 5,10 | 6,60 | 7,90 | 9,80 |
| A MIN | 2,90 | 4,90 | 4,90 | 6,40 | 7,70 | 9,60 |

**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

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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

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