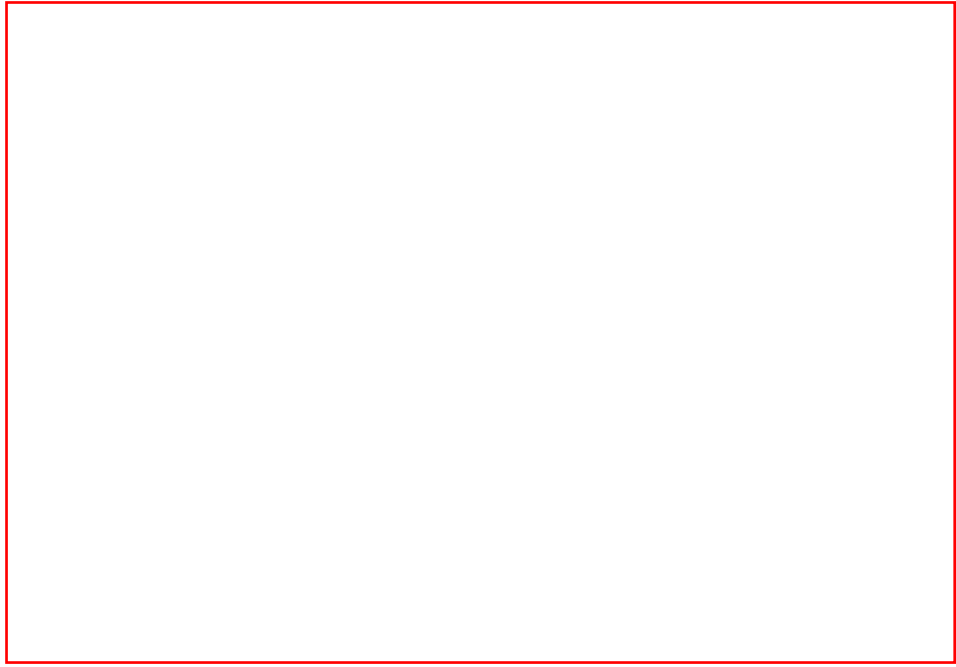


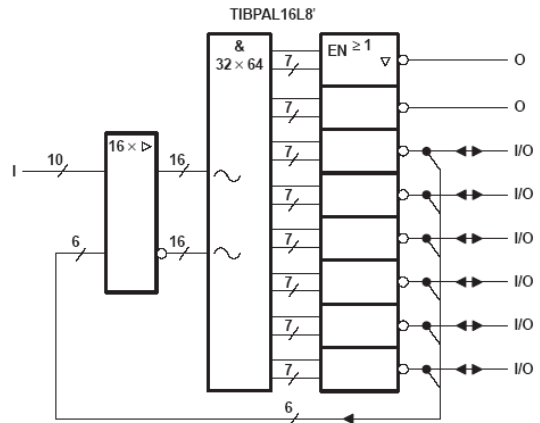
传播延迟

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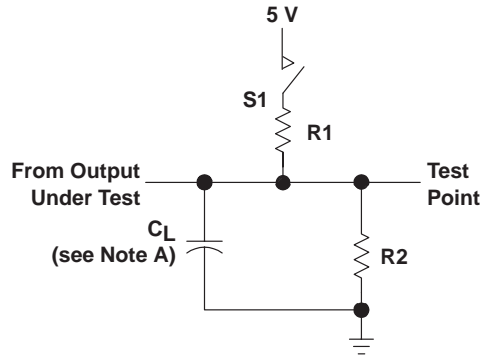




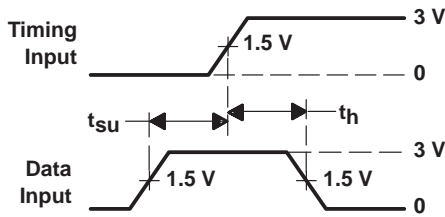




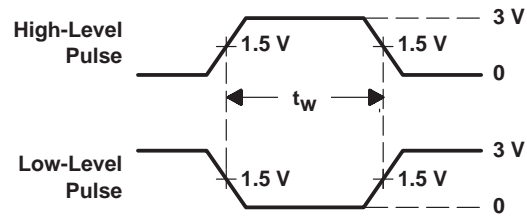
PARAMETER MEASUREMENT INFORMATION



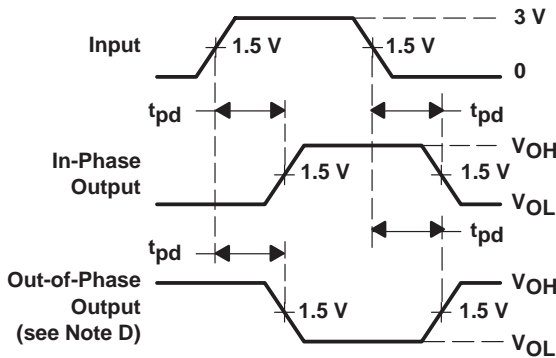
LOAD CIRCUIT FOR 3-STATE OUTPUTS



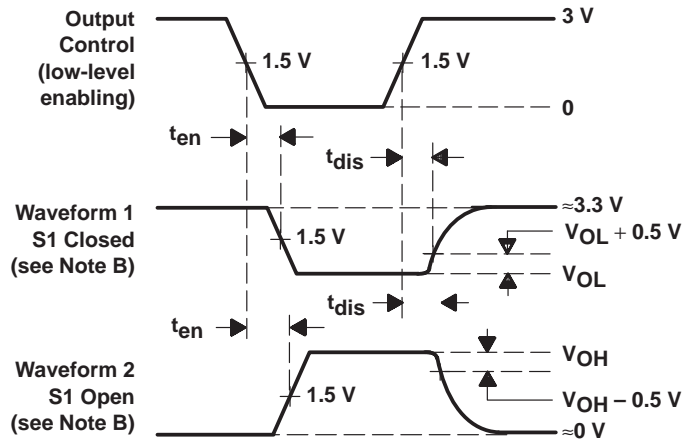
VOLTAGE WAVEFORMS  
 SETUP AND HOLD TIMES



VOLTAGE WAVEFORMS  
 PULSE DURATIONS



VOLTAGE WAVEFORMS  
 PROPAGATION DELAY TIMES



VOLTAGE WAVEFORMS  
 ENABLE AND DISABLE TIMES, 3-STATE OUTPUTS

- NOTES: A.  $C_L$  includes probe and jig capacitance and is 50 pF for  $t_{pd}$  and  $t_{en}$ , 5 pF for  $t_{dis}$ .  
 B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.  
 C. All input pulses have the following characteristics:  $PRR \leq 10$  MHz,  $t_r = t_f \leq 2$  ns, duty cycle = 50%  
 D. When measuring propagation delay times of 3-state outputs, switch S1 is closed.  
 E. Equivalent loads may be used for testing.

Figure 4. Load Circuit and Voltage Waveforms



**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>
5962-85155052A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
5962-8515505RA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
5962-8515505SA	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type
5962-85155062A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
5962-8515506RA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
5962-8515506SA	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type
5962-85155072A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
5962-8515507RA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
5962-8515507SA	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type
5962-85155082A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
5962-8515508RA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
5962-8515508SA	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type
JM38510/50605BRA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
JM38510/50606BRA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
JM38510/50607BRA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
JM38510/50608BRA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
TIBPAL16L8-25CFN	ACTIVE	PLCC	FN	20	46	TBD	CU SNPB	Level-1-220C-UNLIM
TIBPAL16L8-25CJ	OBSOLETE	CDIP	J	20		TBD	Call TI	Call TI
TIBPAL16L8-25CN	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
TIBPAL16L8-30MFKB	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
TIBPAL16L8-30MJ	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
TIBPAL16L8-30MJB	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
TIBPAL16L8-30MWB	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type
TIBPAL16R4-25CFN	ACTIVE	PLCC	FN	20	46	TBD	CU SNPB	Level-1-220C-UNLIM
TIBPAL16R4-25CJ	OBSOLETE	CDIP	J	20		TBD	Call TI	Call TI
TIBPAL16R4-25CN	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
TIBPAL16R4-30MFKB	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
TIBPAL16R4-30MJ	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
TIBPAL16R4-30MJB	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
TIBPAL16R4-30MWB	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type
TIBPAL16R6-25CFN	ACTIVE	PLCC	FN	20	46	TBD	CU SNPB	Level-1-220C-UNLIM
TIBPAL16R6-25CN	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
TIBPAL16R6-30MFKB	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type
TIBPAL16R6-30MJ	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
TIBPAL16R6-30MJB	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
TIBPAL16R6-30MWB	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type
TIBPAL16R8-25CFN	ACTIVE	PLCC	FN	20	46	TBD	CU SNPB	Level-1-220C-UNLIM
TIBPAL16R8-25CN	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type
TIBPAL16R8-30MFKB	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	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>
TIBPAL16R8-30MJB	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type
TIBPAL16R8-30MWB	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type

<sup>(1)</sup> 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.

<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)

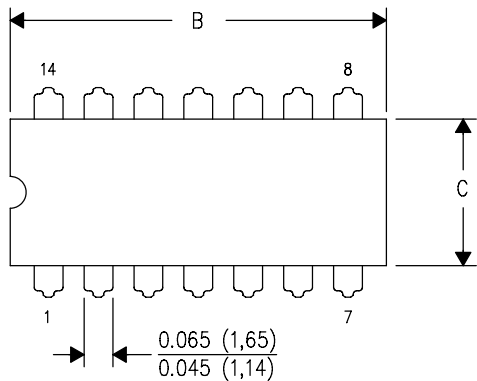
<sup>(3)</sup> MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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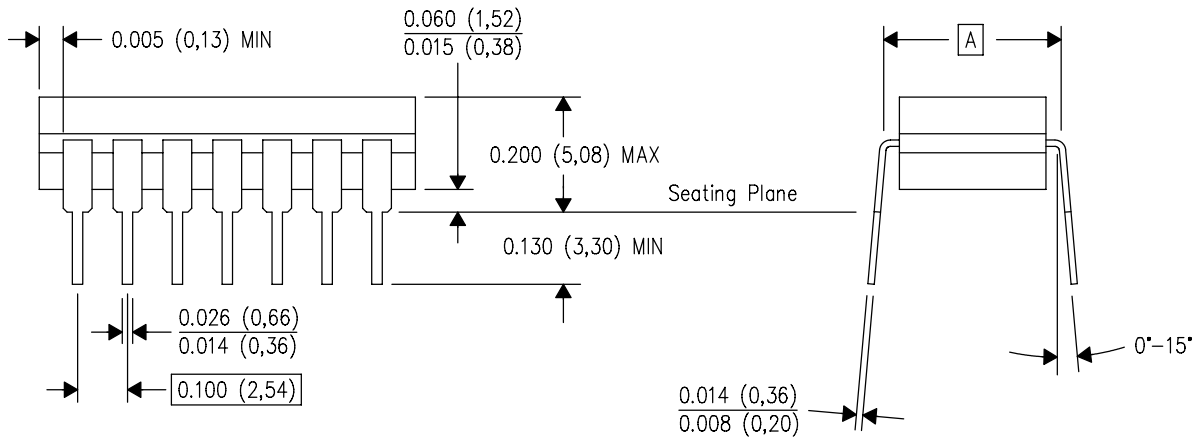
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J (R-GDIP-T\*\*)  
14 LEADS SHOWN

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)



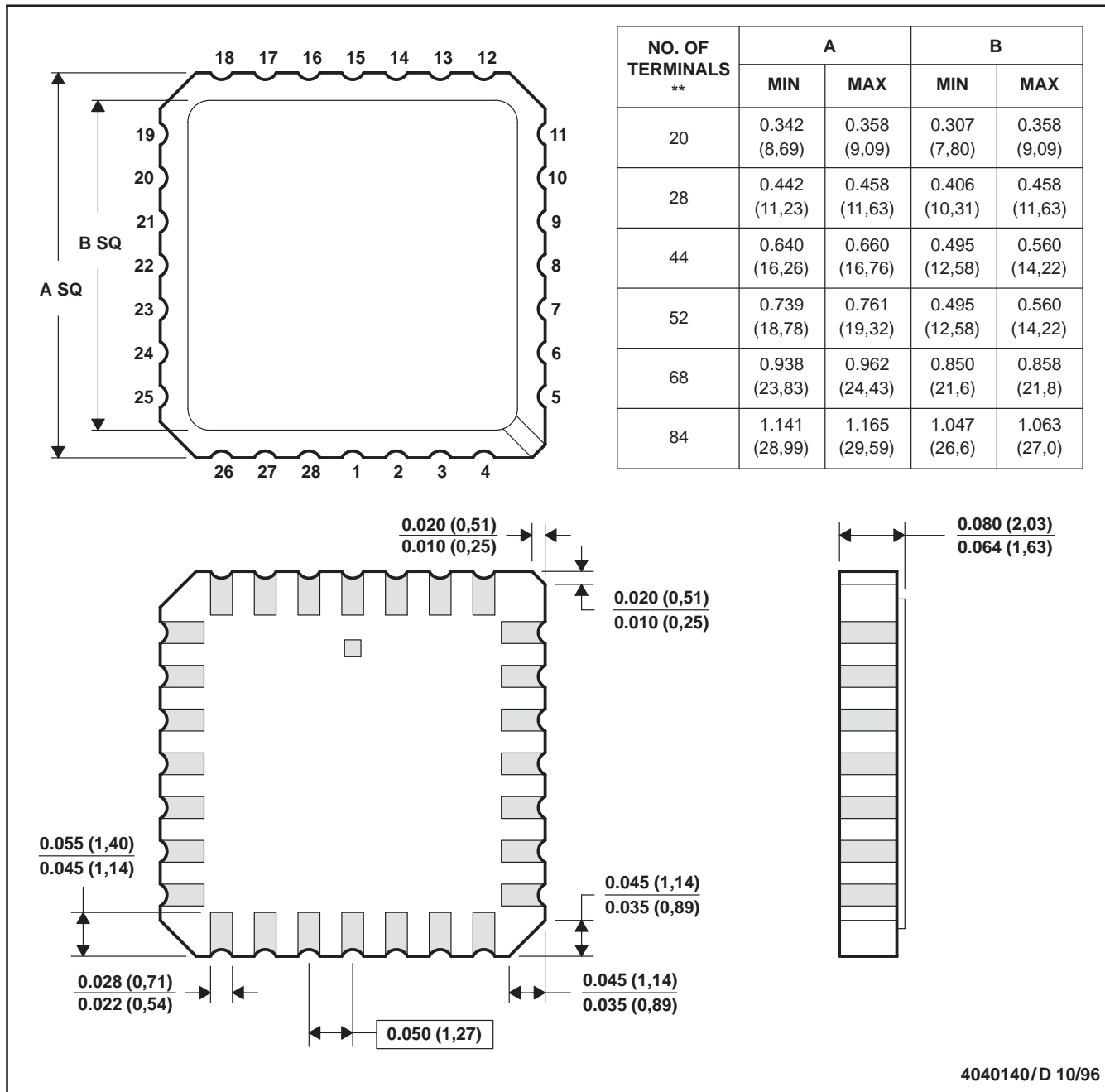
4040083/F 03/03

- NOTES:
- 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.

FK (S-CQCC-N\*\*)

LEADLESS CERAMIC CHIP CARRIER

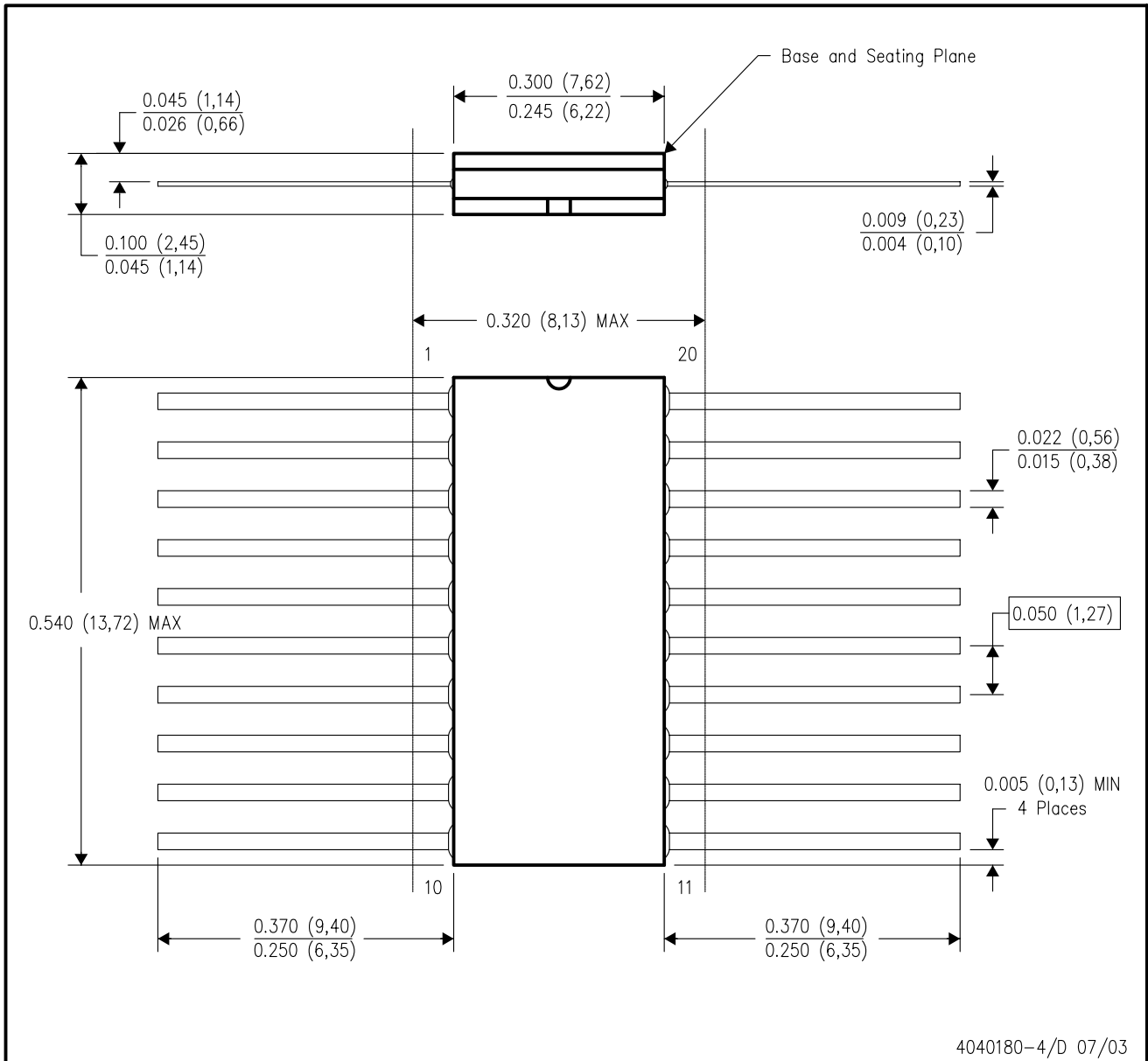
28 TERMINAL SHOWN



- 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

W (R-GDFP-F20)

CERAMIC DUAL FLATPACK

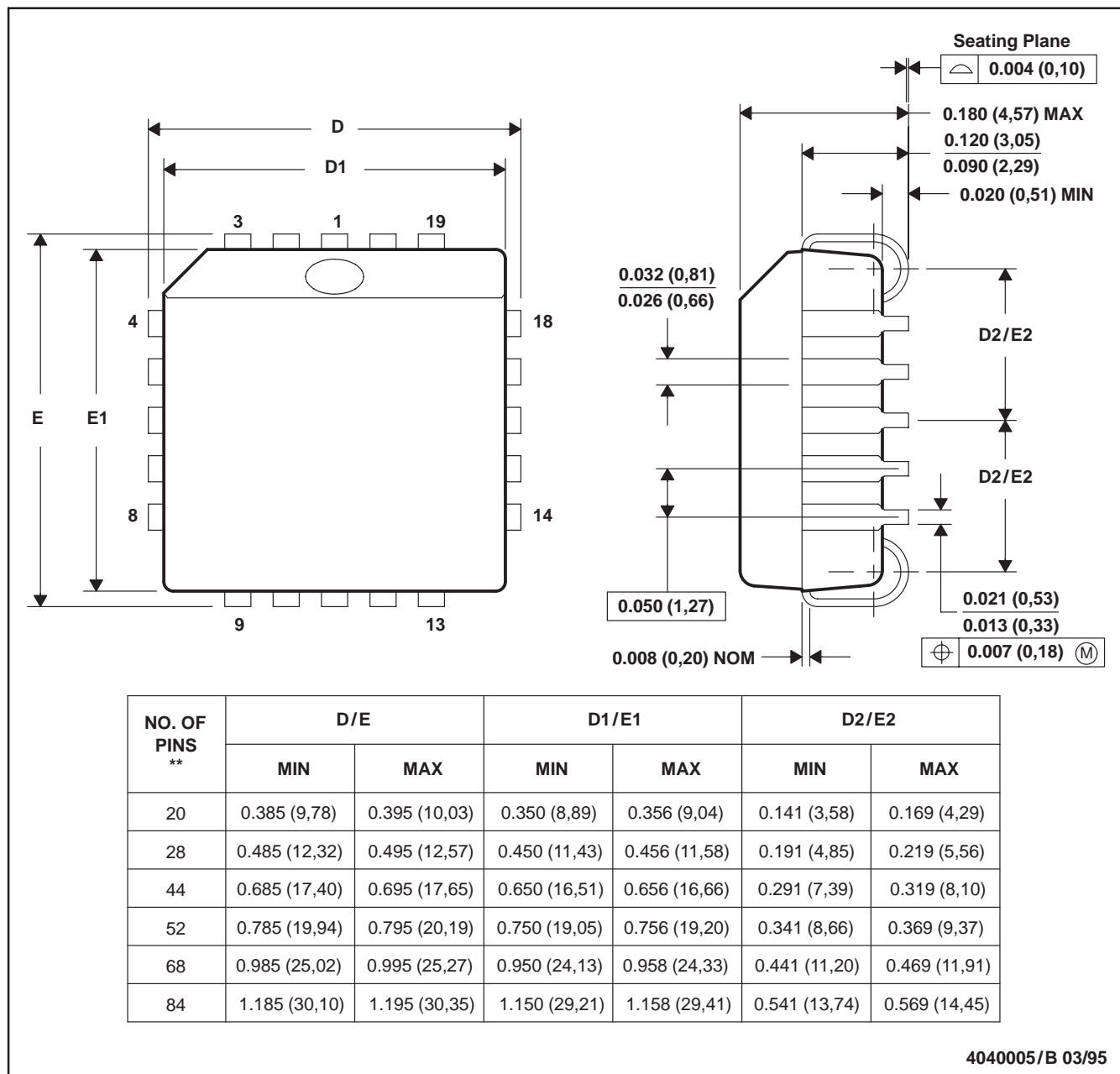


- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. This package can be hermetically sealed with a ceramic lid using glass frit.
  - D. Index point is provided on cap for terminal identification only.
  - E. Falls within Mil-Std 1835 GDFP2-F20

FN (S-PQCC-J\*\*)

PLASTIC J-LEADED CHIP CARRIER

20 PIN SHOWN

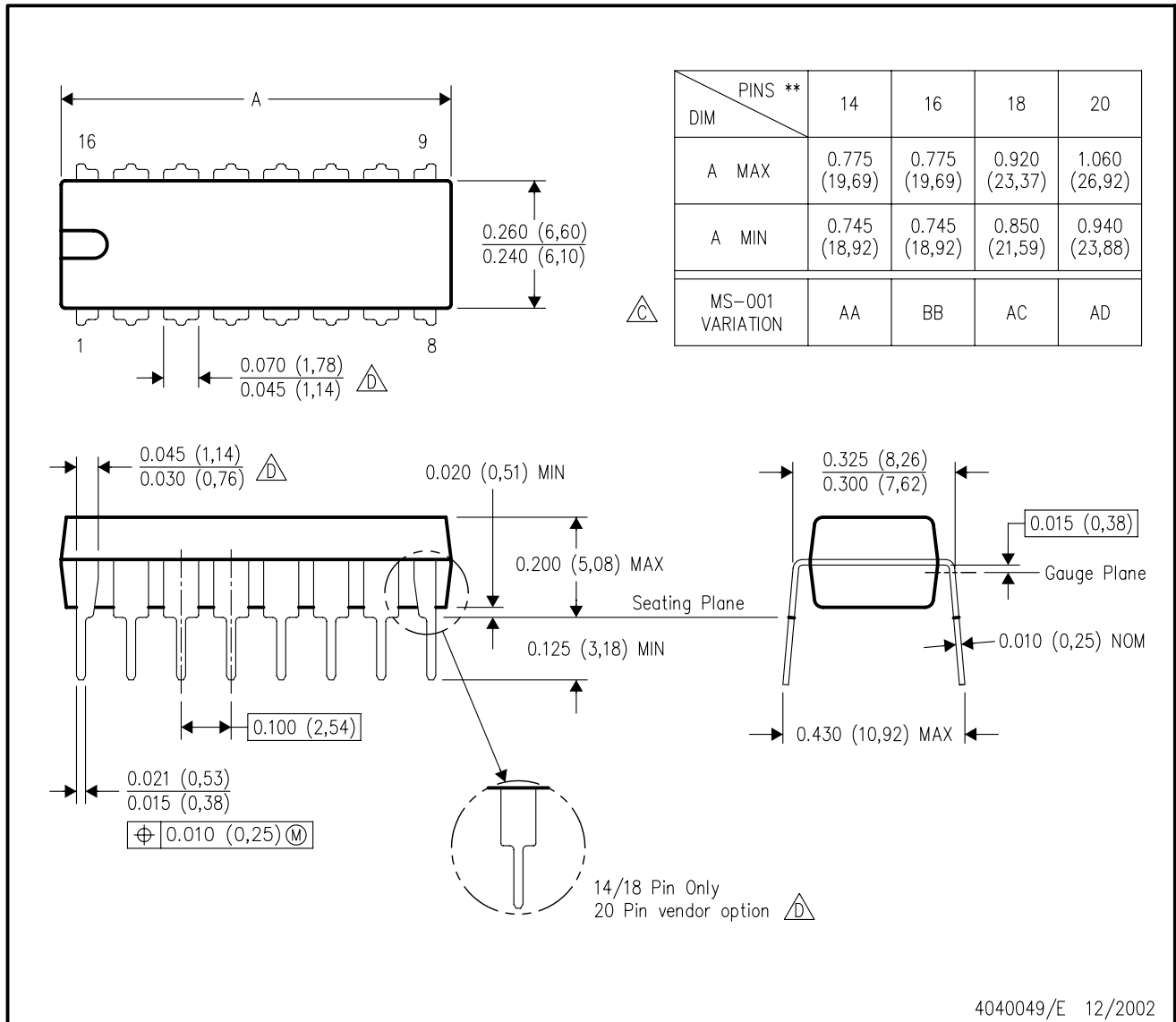


- NOTES: A. All linear dimensions are in inches (millimeters).  
 B. This drawing is subject to change without notice.  
 C. Falls within JEDEC MS-018

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.

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Security	<a href="http://www.ti.com/security">www.ti.com/security</a>
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