

SN54365A THRU SN54368A, SN54LS365A THRU SN54LS368A SN74365A THRU SN74368A, SN74LS365A THRU SN74LS368A HEX BUS DRIVERS WITH 3-STATE OUTPUTS

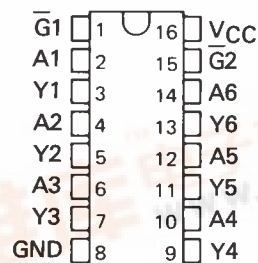
DECEMBER 1983—REVISED MARCH 1988

查询“SN54LS366A”供应商

- 3-State Outputs Drive Bus Lines or Buffer Memory Address Registers
 - Choice of True or Inverting Outputs
 - Package Options Include Plastic “Small Outline” Packages, Ceramic Chip Carriers and Flat Packages, and Plastic and Ceramic DIPs
 - Dependable Texas Instruments Quality and Reliability
- ‘365A, ‘367A, ‘LS365A, ‘LS367A True Outputs ‘366A, ‘368A, ‘LS366A, ‘LS368A Inverting Outputs

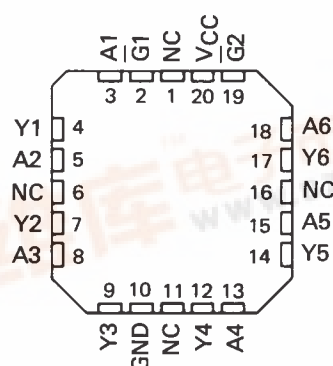
SN54365A, 366A, SN54LS365A, 366A . . . J PACKAGE
SN74365A, 366A . . . N PACKAGE
SN74LS365A, SN74LS366A . . . D OR N PACKAGE

(TOP VIEW)



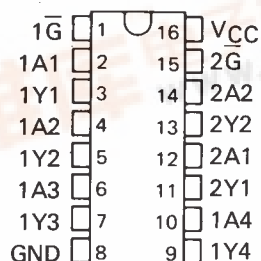
SN54LS365A, SN54LS366A . . . FK PACKAGE

(TOP VIEW)



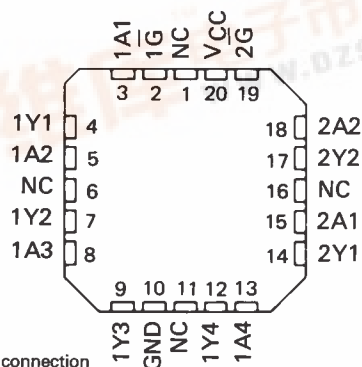
SN54367A, 368A, SN54LS367A, 368A . . . J PACKAGE
SN74367A, 368A . . . N PACKAGE
SN74LS367A, SN74LS368A . . . D OR N PACKAGE

(TOP VIEW)



SN54LS367A, SN54LS368A . . . FK PACKAGE

(TOP VIEW)



NC - No internal connection

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 choice of selected combinations of inverting and noninverting outputs, symmetrical $\bar{G}$ (active-low control) inputs.

These devices feature high fan-out, improved fan-in, and can be used to drive terminated lines down to 133 ohms.

The SN54365A thru SN54368A and SN54LS365A thru SN54LS368A are characterized for operation over the full military temperature range of -55°C to 125°C . The SN74365A thru SN74368A and SN74LS365A thru SN74LS368A are characterized for operation from 0°C to 70°C .

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TTL Devices

PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

TEXAS
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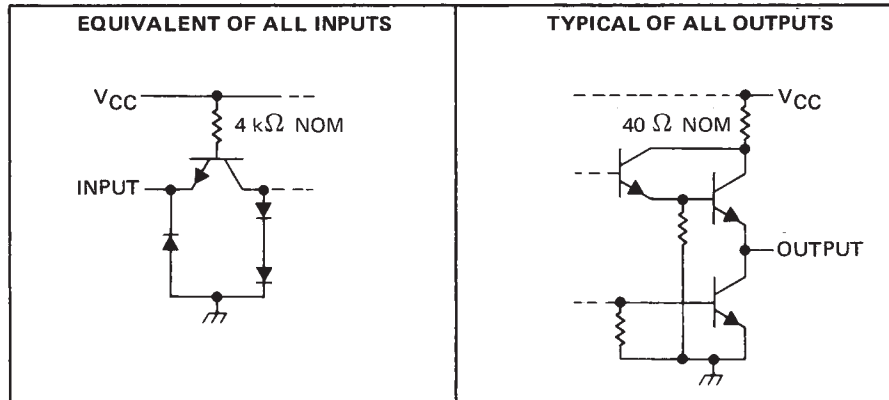


SN54365A THRU SN54368A, SN54LS365A THRU SN54LS368A SN74365A THRU SN74368A, SN74LS365A THRU SN74LS368A HEX BUS DRIVERS WITH 3-STATE OUTPUTS

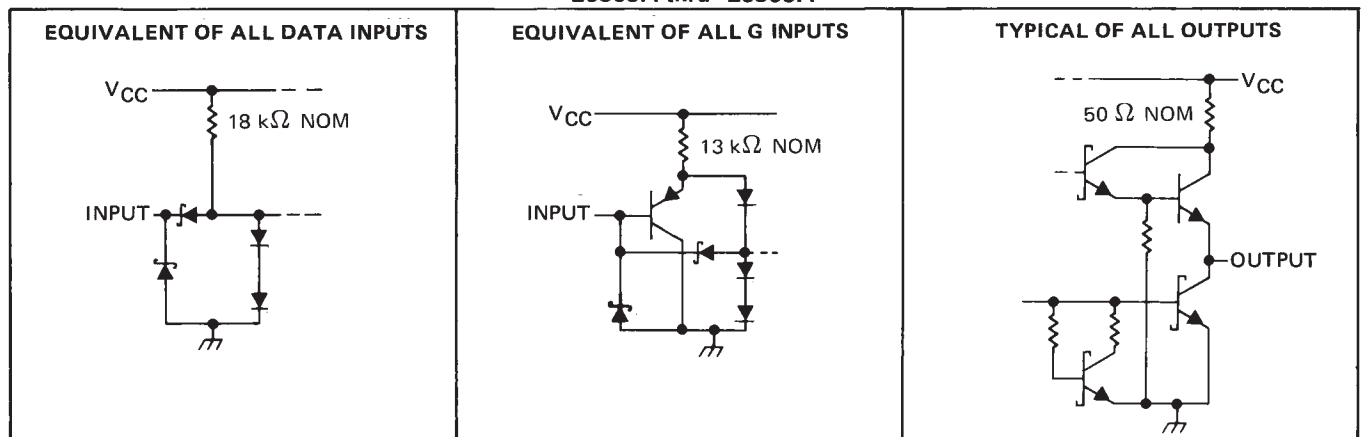
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schematics of inputs and outputs

'365A thru '368A

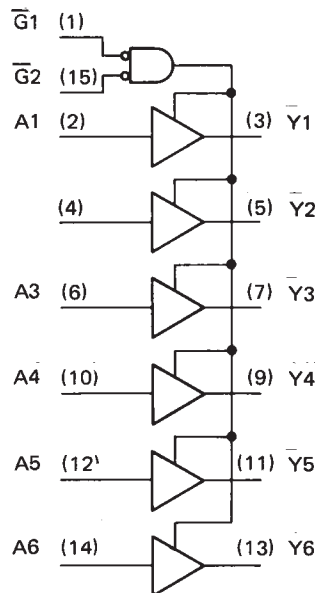


'LS365A thru 'LS368A

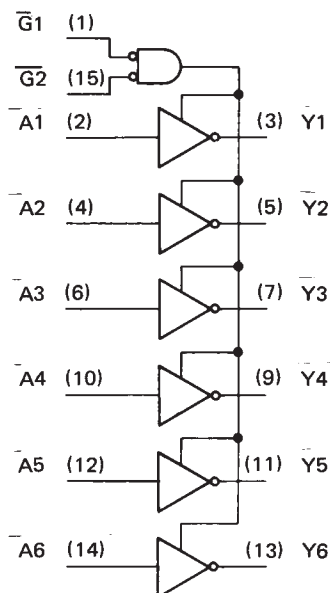


logic diagrams (positive logic)

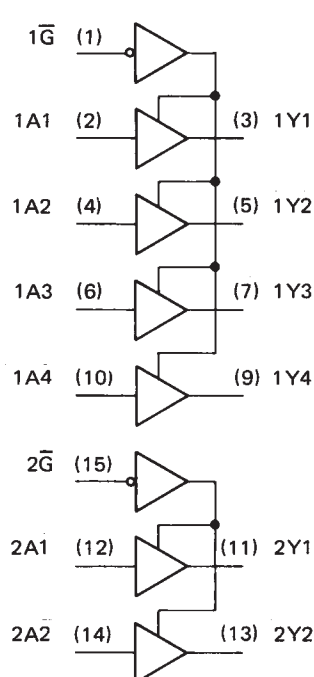
'365A, 'LS365A



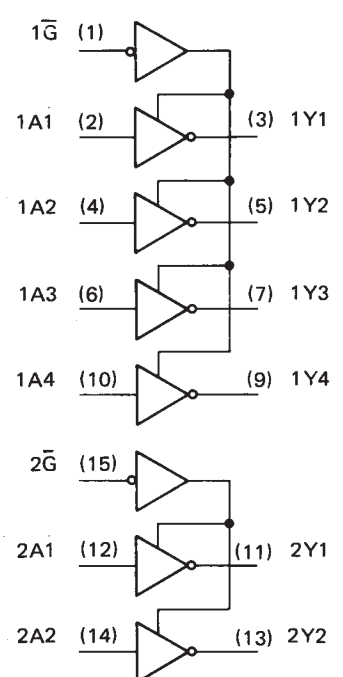
'366A, 'LS366A



'367A, 'LS367A



'368A, 'LS368A



Pin numbers shown are for D, J, and N packages.

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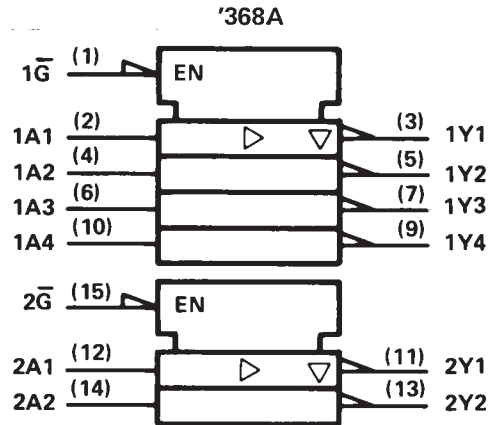
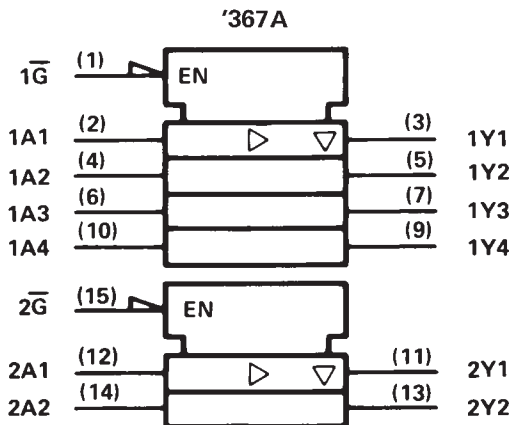
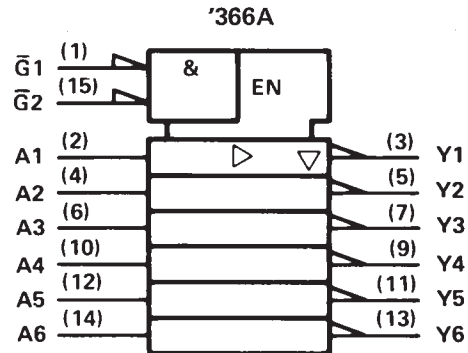
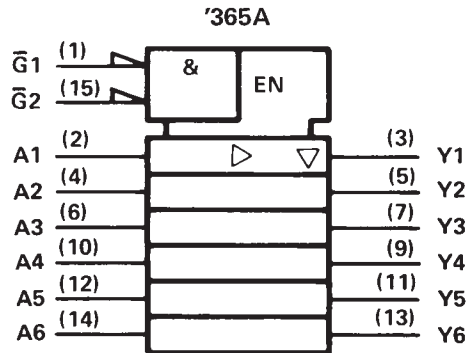
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TTL Devices

**SN54365A THRU SN54368A, SN54LS365A THRU SN54LS368A
SN74365A THRU SN74368A, SN74LS365A THRU SN74LS368A
HEX BUS DRIVERS WITH 3-STATE OUTPUTS**

[查询"SN54LS366A"供应商](#)

logic symbols†



†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 (unless otherwise noted)

Supply voltage, V_{CC} (see Note 1)	7 V
Input voltage: '365A, '366A, '367A, '368A	5.5 V
'LS365A, 'LS366A, 'LS367A, 'LS368A	7 V
Voltage applied to a disabled 3-state output	5.5 V
Operating free-air temperature: SN54'	– 55°C to 125°C
SN74'	0°C to 70°C
Storage temperature range	– 65°C to 150°C

NOTE 1: Voltage values are with respect to network ground terminal.

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TTL Devices

SN54365A, SN54367A
SN74365A, SN74367A
HEX BUS DRIVERS WITH 3-STATE OUTPUTS

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recommended operating conditions

	SN54365A SN54367A			SN74365A SN74367A			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V _{CC} Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V _{IH} High-level input voltage	2			2			V
V _{IL} Low-level input voltage			0.8			0.8	V
I _{OH} High-level output current			− 2			− 5.2	mA
I _{OL} Low-level output current			32			32	mA
T _A Operating free-air temperature	− 55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS†	SN54365A SN54367A			SN74365A SN74367A			UNIT
		MIN	TYP‡	MAX	MIN	TYP‡	MAX	
V _{IK}	V _{CC} = MIN, I _I = − 12 mA			− 1.5			− 1.5	V
V _{OH}	V _{CC} = MIN, V _{IH} = 2 V, V _{IL} = 0.8 V, I _{OH} = MAX	2.4	3.3		2.4	3.1		V
V _{OL}	V _{CC} = MIN, V _{IH} = 2 V, V _{IL} = 0.8 V, I _{OL} = 32 mA			0.4			0.4	V
I _{OZ}	V _{CC} = MAX, V _{IH} = 2 V, V _{IL} = 0.8 V, V _O = 2.4 V			40			40	μA
	V _{CC} = MAX, V _{IH} = 2 V, V _{IL} = 0.8 V, V _O = 0.4 V			− 40			− 40	
I _I	V _{CC} = MAX, V _I = 5.5 V			1			1	mA
I _{IH}	V _{CC} = MAX, V _I = 2.4 V			40			40	μA
I _{IL}	A Inputs V _{CC} = MAX, V _I = 0.5 V, Either $\bar{G}$ input at 2 V			− 40			− 40	μA
	V _{CC} = MAX, V _I = 0.4 V, Both $\bar{G}$ inputs at 0.4 V			− 1.6			− 1.6	mA
	$\bar{G}$ Inputs V _{CC} = MAX, V _I = 0.4 V			− 1.6			− 1.6	
I _{OS} §	V _{CC} = MAX	− 40		− 130	− 40		− 130	mA
I _{CC}	V _{CC} = MAX, Data inputs = 0 V, Output controls = 4.5 V		65	85		65	85	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ All typical values are at V_{CC} = 5 V, T_A = 25°C.

§ Not more than one output should be shorted at a time.

switching characteristics, V_{CC} = 5 V, T_A = 25°C (see note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t _{PLH}	Any	Y	R _L = 400 Ω, C _L = 50 pF			16	ns
t _{PHL}						22	ns
t _{PZH}						35	ns
t _{PZL}						37	ns
t _{PHZ}			R _L = 400 Ω, C _L = 5 pF			11	ns
t _{PLZ}						27	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.



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查询"SN54LS366A"供应商

recommended operating conditions

	SN54366A SN54368A			SN74366A SN74368A			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V _{CC} Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V _{IH} High-level input voltage	2			2			V
V _{IL} Low-level input voltage			0.8			0.8	V
I _{OH} High-level output current			− 2			− 5.2	mA
I _{OL} Low-level output current			32			32	mA
T _A Operating free-air temperature	− 55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS†	SN54366A SN54368A	SN74366A SN74368A	UNIT
		MIN	TYP‡	MAX
V_{IK}	$V_{CC} = \text{MIN}, I_I = -12 \text{ mA}$		-1.5	V
V_{OH}	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OH} = \text{MAX}$	2.4	3.3	V
V_{OL}	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OL} = 32 \text{ mA}$		0.4	V
I_{OZ}	$V_{CC} = \text{MAX}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, V_O = 2.4 \text{ V}$		40	μA
	$V_{CC} = \text{MAX}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, V_O = 0.4 \text{ V}$		-40	μA
I_I	$V_{CC} = \text{MAX}, V_I = 5.5 \text{ V}$		1	mA
I_{IH}	$V_{CC} = \text{MAX}, V_I = 2.4 \text{ V}$		40	μA
I_{IL}	A Inputs $V_{CC} = \text{MAX}, V_I = 0.5 \text{ V}, \text{ Either } \bar{G} \text{ input at } 2 \text{ V}$		-40	μA
	$V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}, \text{ Both } \bar{G} \text{ inputs at } 0.4 \text{ V}$		-1.6	mA
	$\bar{G}$ Inputs $V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}$		-1.6	mA
$I_{OS}\$$	$V_{CC} = \text{MAX}$	-40	-130	mA
I_{CC}	$V_{CC} = \text{MAX}, \text{ Data inputs} = 0 \text{ V}, \text{ Output controls} = 4.5 \text{ V},$	59	77	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ All typical values are at $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$.

§ Not more than one output should be shorted at a time.

switching characteristics, $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$ (see note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	Any	Y	$R_L = 400 \Omega, C_L = 50 \text{ pF}$			17	ns
t_{PHL}						16	ns
t_{PZH}						35	ns
t_{PZL}						37	ns
t_{PHZ}			$R_L = 400 \Omega, C_L = 5 \text{ pF}$			11	ns
t_{PLZ}						27	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

**SN54LS365A, SN54LS367A
SN74LS365A, SN74LS367A
HEX BUS DRIVERS WITH 3-STATE OUTPUTS**

[查询"SN54LS366A"供应商](#)

recommended operating conditions

	SN54LS365A SN54LS367A			SN74LS365A SN74LS367A			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC} Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V_{IH} High-level input voltage	2			2			V
V_{IL} Low-level input voltage			0.7			0.8	V
I_{OH} High-level output current			− 1			− 2.6	mA
I_{OL} Low-level output current			12			24	mA
T_A Operating free-air temperature	− 55		125	0		70	°C

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

PARAMETER		TEST CONDITIONS†	SN54LS365A SN54LS367A			SN74LS365A SN74LS367A			UNIT
			MIN	TYP‡	MAX	MIN	TYP‡	MAX	
V_{IK}		$V_{CC} = \text{MIN}, I_I = -18 \text{ mA}$			− 1.5			− 1.5	V
V_{OH}		$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = \text{MAX}, I_{OH} = \text{MAX}$	2.4	3.3		2.4	3.1		V
V_{OL}		$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = \text{MAX}, I_{OL} = 12 \text{ mA}$		0.25	0.4		0.25	0.4	V
		$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OL} = 24 \text{ mA}$					0.35	0.5	
I_{OZ}		$V_{CC} = \text{MAX}, V_{IH} = 2 \text{ V}, V_{IL} = \text{MAX}, V_O = 2.4 \text{ V}$			20			20	μA
		$V_{CC} = \text{MAX}, V_{IH} = 2 \text{ V}, V_{IL} = \text{MAX}, V_O = 0.4 \text{ V}$			− 20			− 20	
I_I		$V_{CC} = \text{MAX}, V_I = 7 \text{ V}$			0.1			0.1	mA
I_{IH}		$V_{CC} = \text{MAX}, V_I = 2.7 \text{ V}$			20			20	μA
I_{IL}	A Inputs	$V_{CC} = \text{MAX}, V_I = 0.5 \text{ V}, \text{ Either } \bar{G} \text{ input at } 2 \text{ V}$			− 20			− 20	μA
		$V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}, \text{ Both } \bar{G} \text{ inputs at } 0.4 \text{ V}$			− 0.4			− 0.4	mA
	$\bar{G}$ Inputs	$V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}$			− 0.2			− 0.2	
$I_{OS}§$		$V_{CC} = \text{MAX}$	− 40		− 225	− 40		− 225	mA
I_{CC}		$V_{CC} = \text{MAX}, \text{ Data inputs} = 0 \text{ V}, \text{ Output controls} = 4.5 \text{ V},$		14	24		14	24	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ All typical values are at $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$.

§ Not more than one output should be shorted at a time, and the duration of the short circuit should not exceed one second.

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TTL Devices

SN54LS365A, SN54LS367A
SN74LS365A, SN74LS367A
HEX BUS DRIVERS WITH 3-STATE OUTPUTS

[查询"SN54LS366A"供应商](#)

switching characteristics, $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$ (see note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	Any	Y	$R_L = 667\ \Omega$, $C_L = 45\text{ pF}$		10	16	ns
t_{PHL}					9	22	ns
t_{PZH}					19	35	ns
t_{PZL}					24	40	ns
t_{PHZ}			$R_L = 667\ \Omega$, $C_L = 5\text{ pF}$			30	ns
t_{PLZ}						35	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

**SN54LS366A, SN54LS368A
SN74LS366A, SN74LS368A
HEX BUS DRIVERS WITH 3-STATE OUTPUTS**

查询"SN54LS366A"供应商

recommended operating conditions

	SN54LS366A SN54LS368A			SN74LS366A SN74LS368A			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V _{CC} Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V _{IH} High-level input voltage	2			2			V
V _{IL} Low-level input voltage			0.7			0.8	V
I _{OH} High-level output current			−1			−2.6	mA
I _{OL} Low-level output current			12			24	mA
T _A Operating free-air temperature	−55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS†	SN54LS366A SN54LS368A			SN74LS366A SN74LS368A			UNIT
		MIN	TYP‡	MAX	MIN	TYP‡	MAX	
V _{IK}	V _{CC} = MIN, I _I = −18 mA			−1.5			−1.5	V
V _{OH}	V _{CC} = MIN, V _{IH} = 2 V, V _{IL} = MAX, I _{OH} = MAX	2.4	3.3		2.4	3.1		V
V _{OL}	V _{CC} = MIN, V _{IH} = 2 V, V _{IL} = MAX, I _{OL} = 12 mA		0.25	0.4		0.25	0.4	V
	V _{CC} = MIN, V _{IH} = 2 V, V _{IL} = 0.8 V, I _{OL} = 24 mA					0.35	0.5	
I _{OZ}	V _{CC} = MAX, V _{IH} = 2 V, V _{IL} = MAX, V _O = 2.4 V			20			20	μA
	V _{CC} = MAX, V _{IH} = 2 V, V _{IL} = MAX, V _O = 0.4 V			−20			−20	
I _I	V _{CC} = MAX, V _I = 7 V			0.1			0.1	mA
I _{IH}	V _{CC} = MAX, V _I = 2.7 V			20			20	μA
I _{IL}	A Inputs, V _{CC} = MAX, V _I = 0.5 V, Either $\overline{G}$ input at 2 V			−20			−20	μA
	V _{CC} = MAX, V _I = 0.4 V, Both $\overline{G}$ inputs at 0.4 V			−0.4			−0.4	mA
	$\overline{G}$ Inputs, V _{CC} = MAX, V _I = 0.4 V			−0.2			−0.2	
I _{OS} §	V _{CC} = MAX	−40		−225	−40		−225	mA
I _{CC}	V _{CC} = MAX, Data inputs = 0 V, Output controls = 4.5 V,		12	21		12	21	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ All typical values are at V_{CC} = 5 V, T_A = 25°C.

§ Not more than one output should be shorted at a time, and the duration of the short circuit should not exceed one second.

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TTL Devices

[查询"SN54LS366A"供应商](#)

switching characteristics, $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$ (see note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	Any	Y	$R_L = 667\ \Omega$, $C_L = 45\text{ pF}$		7	15	ns
t_{PHL}					12	18	ns
t_{PZH}					18	35	ns
t_{PZL}					28	45	ns
t_{PHZ}			$R_L = 667\ \Omega$, $C_L = 5\text{ pF}$			32	ns
t_{PLZ}						35	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.



PACKAG

PACKAGING INFORMATION

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Peak
5962-9687802QEA	ACTIVE	CDIP	J	16		TBD	A42	N / A for Pkg
5962-9687802QFA	ACTIVE	CFP	W	16		TBD	A42	N / A for Pkg
5962-9687802QFA	ACTIVE	CFP	W	16		TBD	A42	N / A for Pkg
JM38510/16303BEA	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
JM38510/16303BEA	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
JM38510/16304BEA	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
JM38510/16304BEA	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
JM38510/32201B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
JM38510/32201B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
JM38510/32201BEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
JM38510/32201BEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
JM38510/32201BFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
JM38510/32201BFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
JM38510/32203B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
JM38510/32203B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
JM38510/32203BEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
JM38510/32203BEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
JM38510/32203BFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
JM38510/32203BFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
JM38510/32203SEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
JM38510/32203SEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
JM38510/32203SFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
JM38510/32203SFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
SN54365AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN54365AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN54367AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN54367AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN54368AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI



PACKAG

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Pea
SN54368AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN54LS365AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SN54LS365AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SN54LS366AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SN54LS366AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SN54LS367AJ	ACTIVE	CDIP	J	16	25	TBD	A42	N / A for Pkg
SN54LS367AJ	ACTIVE	CDIP	J	16	25	TBD	A42	N / A for Pkg
SN54LS368AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SN54LS368AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SN74365AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74365AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74366AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74366AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74367AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74367AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74367AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74367AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74368AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74368AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74368AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74368AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS365AD	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365AD	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600



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Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Peak
SN74LS365ADR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ADRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365AN	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS365AN	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS365AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS365AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS365ANE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS365ANE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS365ANSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ANSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ANSRE4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ANSRE4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ANSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS365ANSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS366AD	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI
SN74LS366AD	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI
SN74LS366ADR	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI
SN74LS366ADR	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI



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Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Pea
SN74LS366AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS366AN	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS367AD	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367AD	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367ADRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260
SN74LS367AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN74LS367AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN74LS367AN	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS367AN	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS367AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS367AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS367ANE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS367ANE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg



PACKAG

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Pea
SN74LS367ANSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS367ANSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS367ANSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS367ANSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368AD	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368AD	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ADRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN74LS368AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SN74LS368AN	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg



PACKAG

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Peak
SN74LS368AN	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS368AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS368AN3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI
SN74LS368ANE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS368ANE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg
SN74LS368ANSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ANSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ANSRE4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ANSRE4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ANSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SN74LS368ANSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-2600
SNJ54365AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SNJ54365AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SNJ54367AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SNJ54367AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SNJ54367AW	OBSOLETE	CFP	W	16		TBD	Call TI	Call TI
SNJ54367AW	OBSOLETE	CFP	W	16		TBD	Call TI	Call TI
SNJ54368AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SNJ54368AJ	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI
SNJ54368AW	OBSOLETE	CFP	W	16		TBD	Call TI	Call TI
SNJ54368AW	OBSOLETE	CFP	W	16		TBD	Call TI	Call TI
SNJ54LS365AFK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
SNJ54LS365AFK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
SNJ54LS365AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SNJ54LS365AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SNJ54LS365AW	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
SNJ54LS365AW	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg



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Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Pea
SNJ54LS366AFK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
SNJ54LS366AFK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
SNJ54LS366AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SNJ54LS366AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SNJ54LS366AW	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
SNJ54LS366AW	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
SNJ54LS367AFK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
SNJ54LS367AFK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
SNJ54LS367AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SNJ54LS367AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SNJ54LS367AW	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
SNJ54LS367AW	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
SNJ54LS368AFK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
SNJ54LS368AFK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg
SNJ54LS368AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SNJ54LS368AJ	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg
SNJ54LS368AW	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg
SNJ54LS368AW	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg

⁽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), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check <http://www.ti.com> for more 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 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 high temperature applications.

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 attach 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 (as defined 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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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.

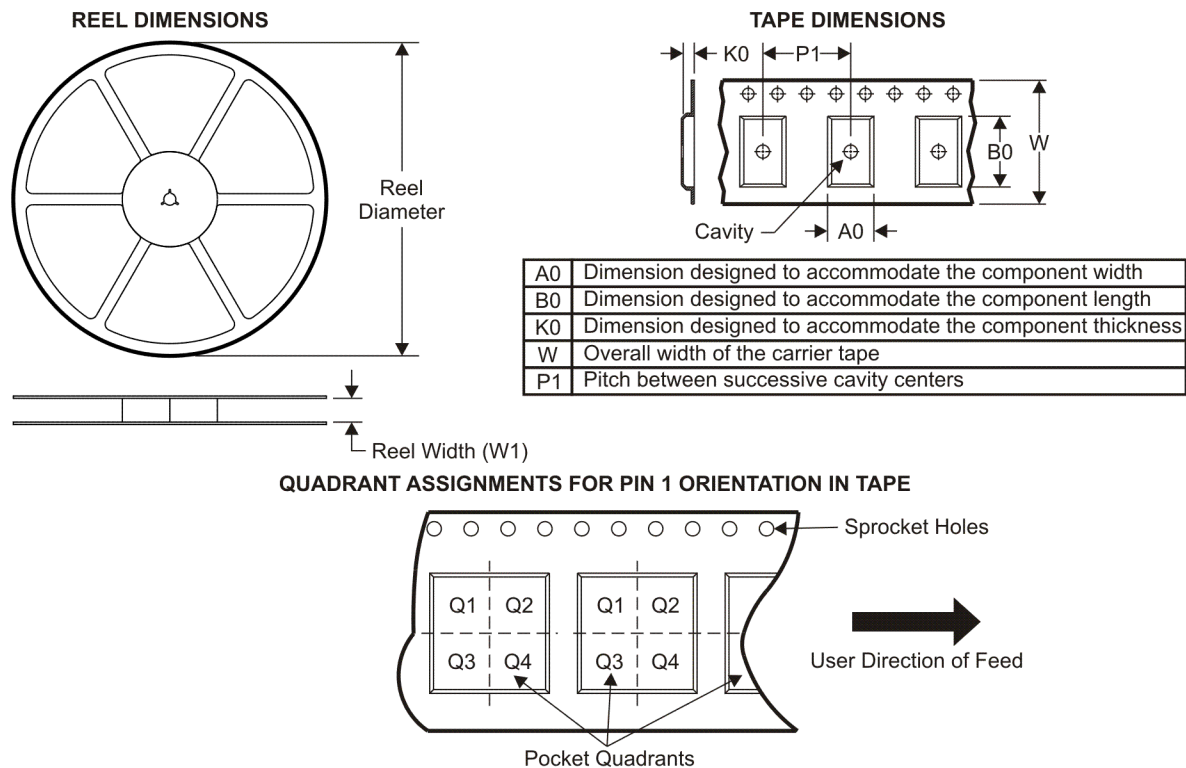
OTHER QUALIFIED VERSIONS OF SN54365A, SN54366A, SN54367A, SN54368A, SN54LS365A, SN54LS366A, SN54LS367A, SN54LS367A-S, SN74365A, SN74366A, SN74367A, SN74368A, SN74LS365A, SN74LS366A, SN74LS367A, SN74LS368A :

- Catalog: [SN74365A](#), [SN74366A](#), [SN74367A](#), [SN74368A](#), [SN74LS365A](#), [SN74LS366A](#), [SN74LS367A](#), [SN54LS367A](#), [SN74LS368A](#)
- Military: [SN54365A](#), [SN54366A](#), [SN54367A](#), [SN54368A](#), [SN54LS365A](#), [SN54LS366A](#), [SN54LS367A](#), [SN54LS368A](#)
- Space: [SN54LS367A-SP](#)

NOTE: Qualified Version Definitions:

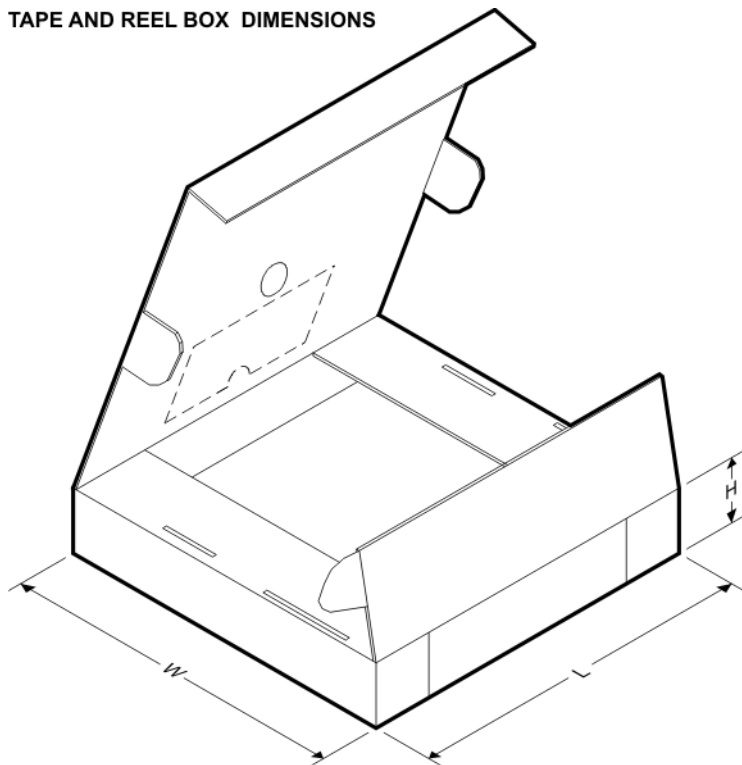
- Catalog - TI's standard catalog product
- Military - QML certified for Military and Defense Applications
- Space - Radiation tolerant, ceramic packaging and qualified for use in Space-based application

TAPE AND REEL INFORMATION



*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
SN74LS365ADR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
SN74LS365ANSR	SO	NS	16	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1
SN74LS367ADR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
SN74LS367ANSR	SO	NS	16	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1
SN74LS368ADR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
SN74LS368ANSR	SO	NS	16	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1

TAPE AND REEL BOX DIMENSIONS


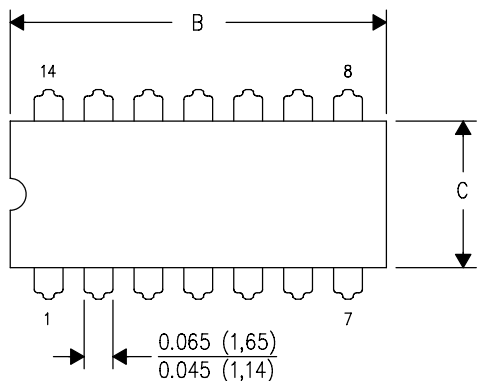
*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74LS365ADR	SOIC	D	16	2500	333.2	345.9	28.6
SN74LS365ANSR	SO	NS	16	2000	346.0	346.0	33.0
SN74LS367ADR	SOIC	D	16	2500	333.2	345.9	28.6
SN74LS367ANSR	SO	NS	16	2000	346.0	346.0	33.0
SN74LS368ADR	SOIC	D	16	2500	333.2	345.9	28.6
SN74LS368ANSR	SO	NS	16	2000	346.0	346.0	33.0

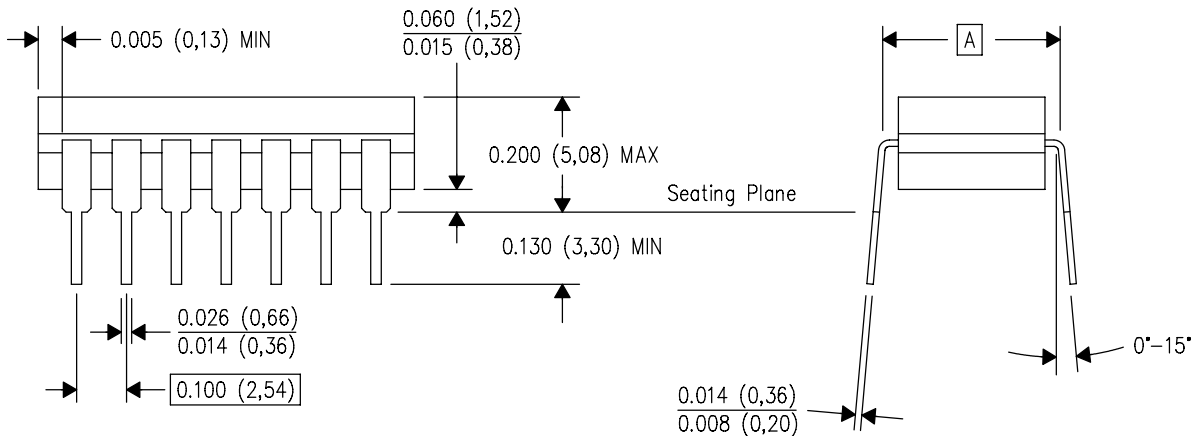
J (R-GDIP-T**)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



PINS ** DIM	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)

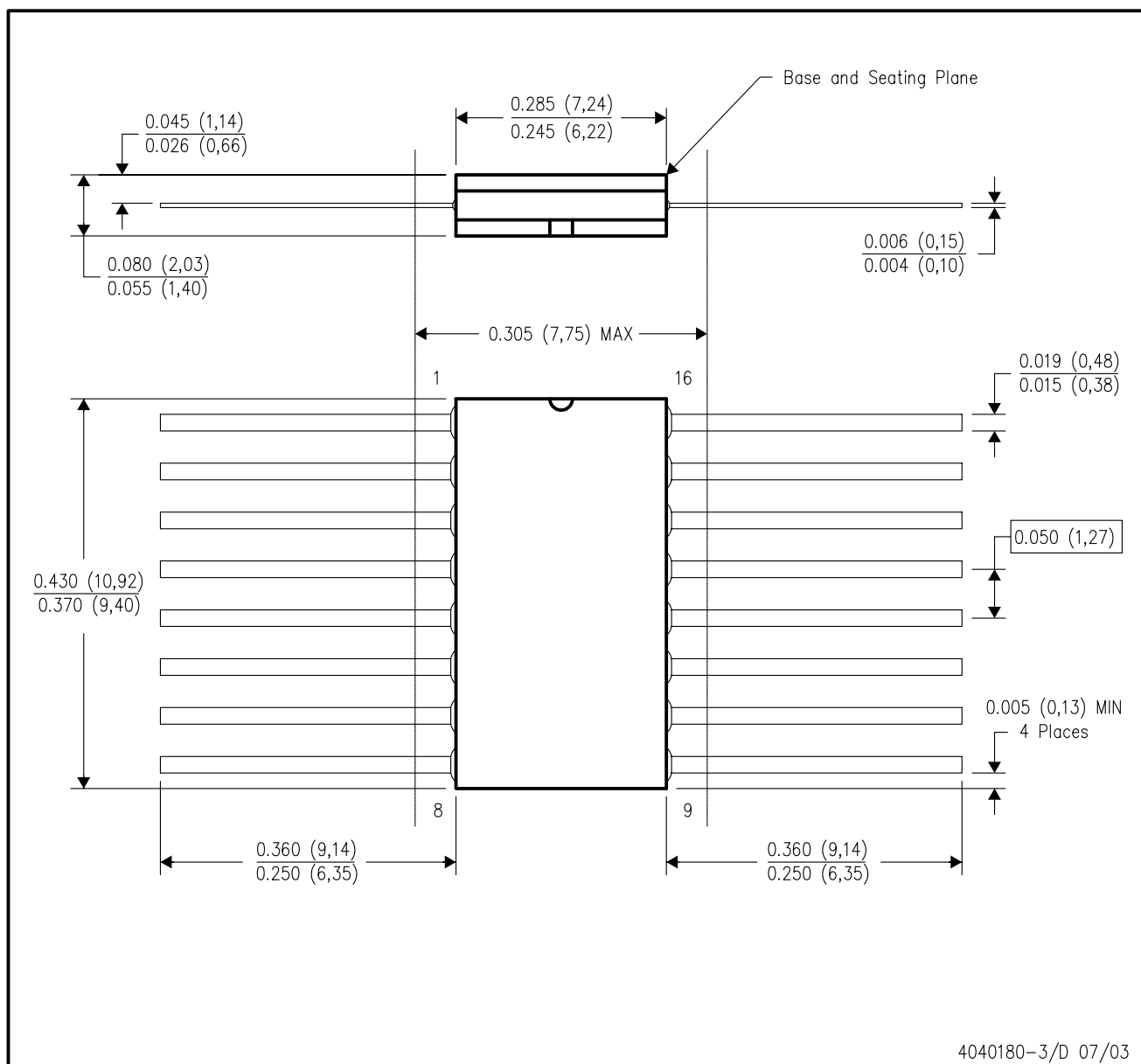


4040083/F 03/03

- 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

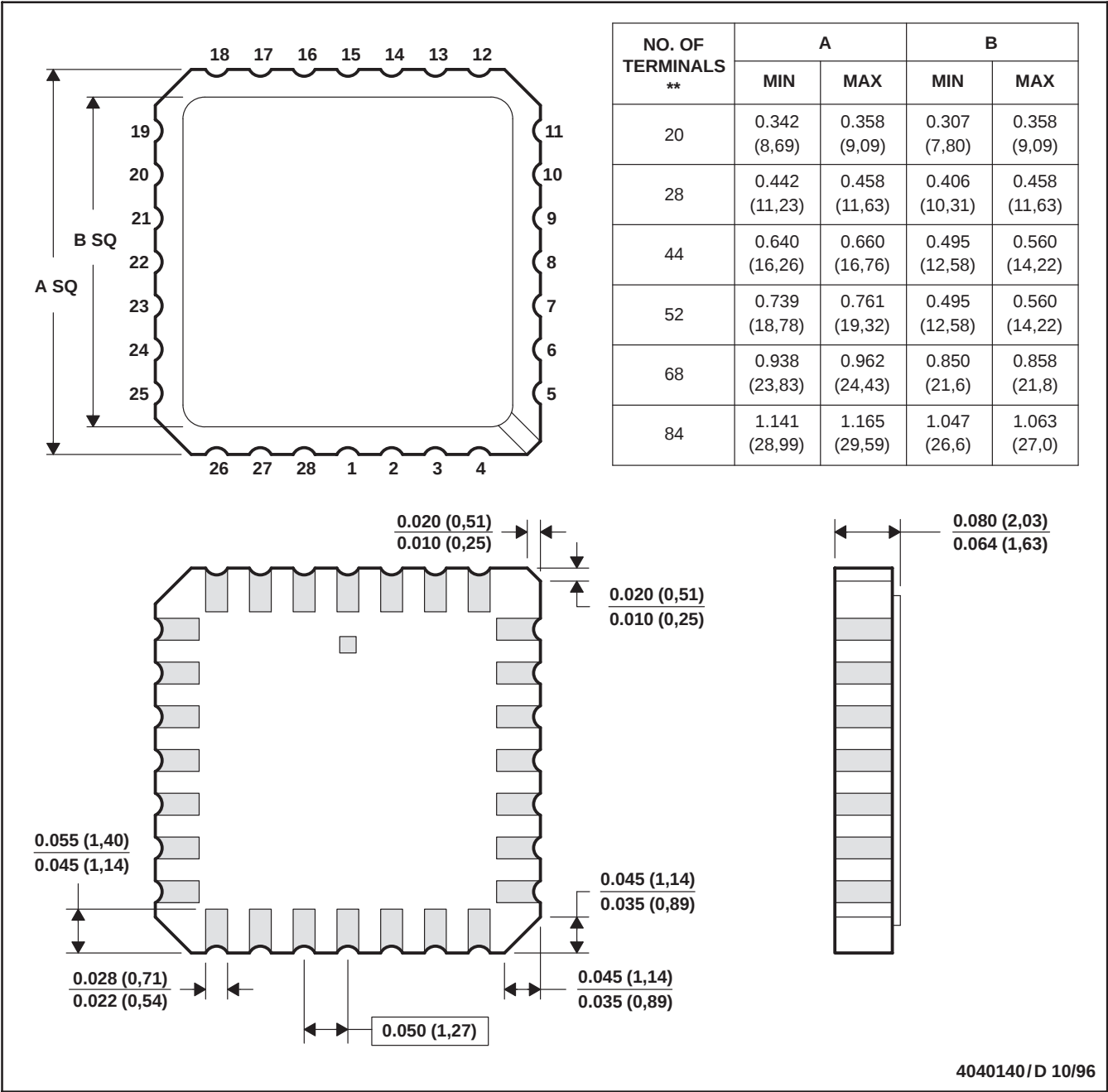


- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - B. This drawing is subject to change without notice.
 - C. This package can be hermetically sealed with a ceramic lid using glass frit.
 - D. Index point is provided on cap for terminal identification only.
 - E. Falls within MIL STD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

FK (S-CQCC-N**)

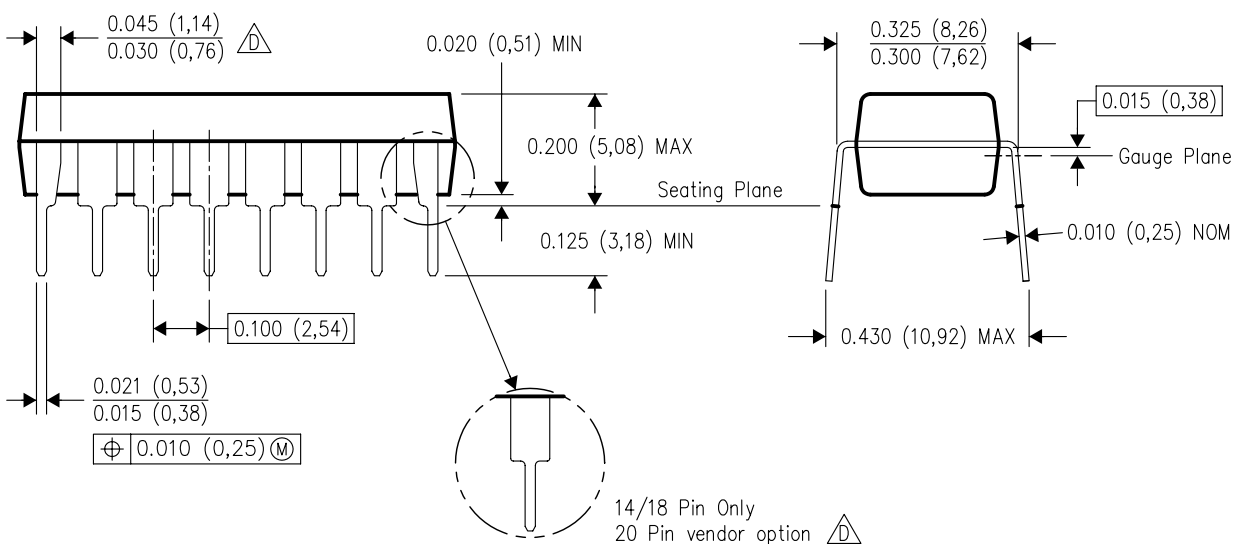
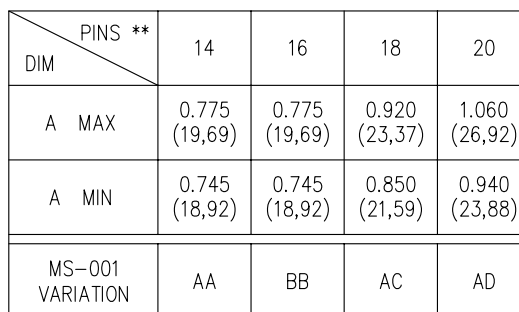
LEADLESS CERAMIC CHIP CARRIER

28 TERMINAL SHOWN



- 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

16 PINS SHOWN

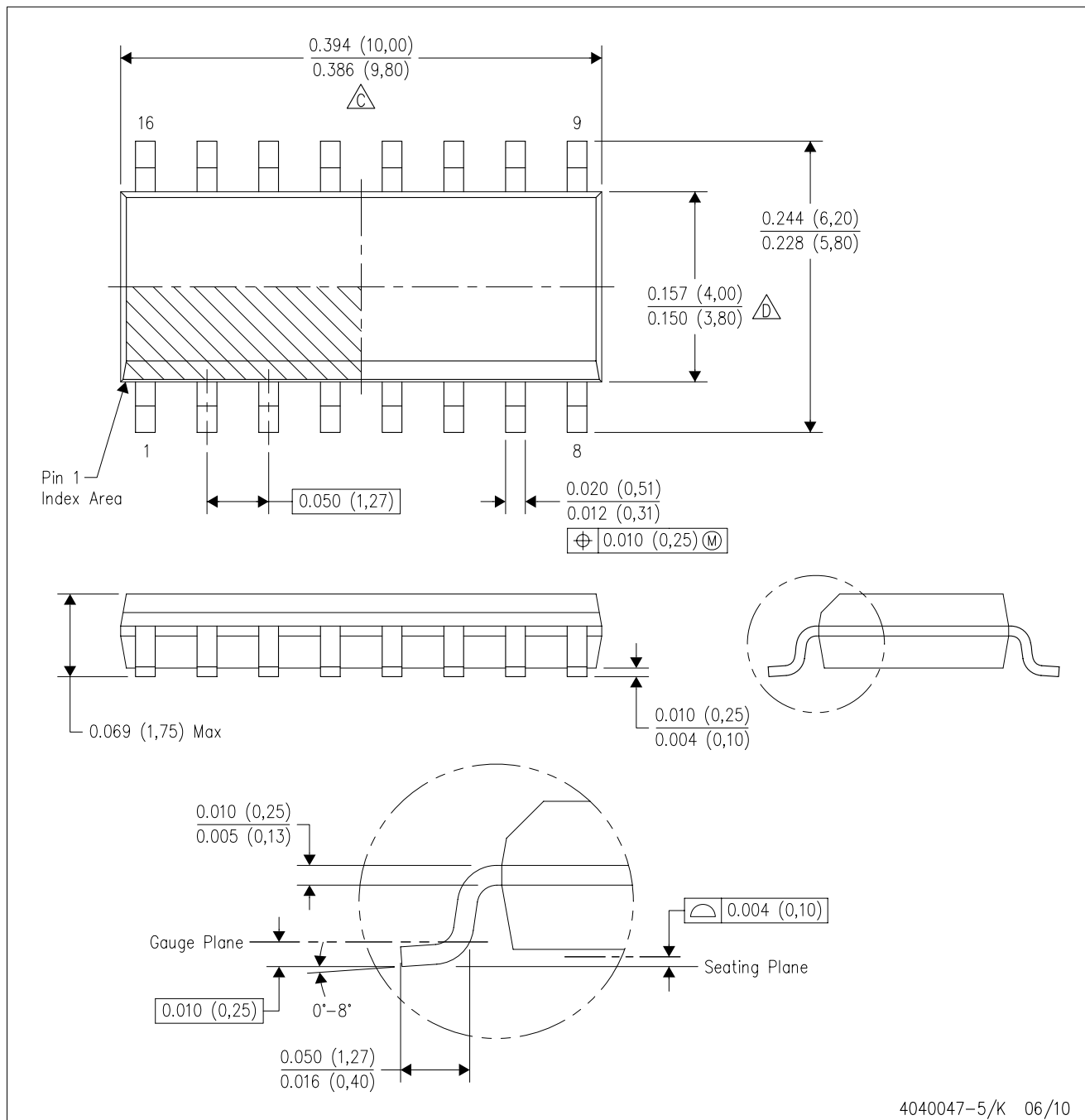


4040049/E 12/2002

- 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.

D (R-PDSO-G16)

PLASTIC SMALL-OUTLINE PACKAGE

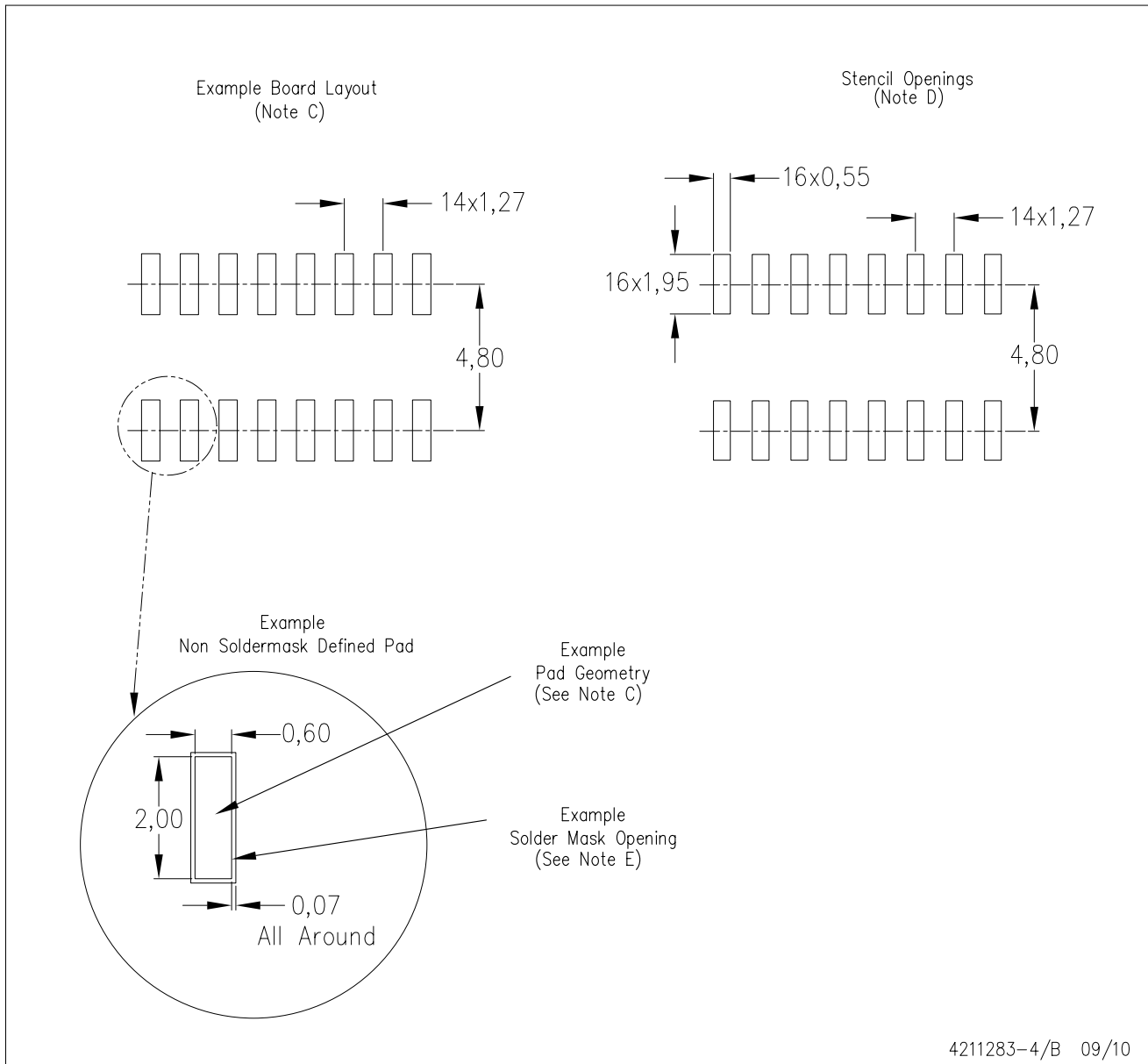


4040047-5/K 06/10

- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - 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 .006 (0,15) per end.
 - D. Body width does not include interlead flash. Interlead flash shall not exceed .017 (0,43) per side.
 - E. Reference JEDEC MS-012 variation AC.

D (R-PDSO-G16)

PLASTIC SMALL OUTLINE



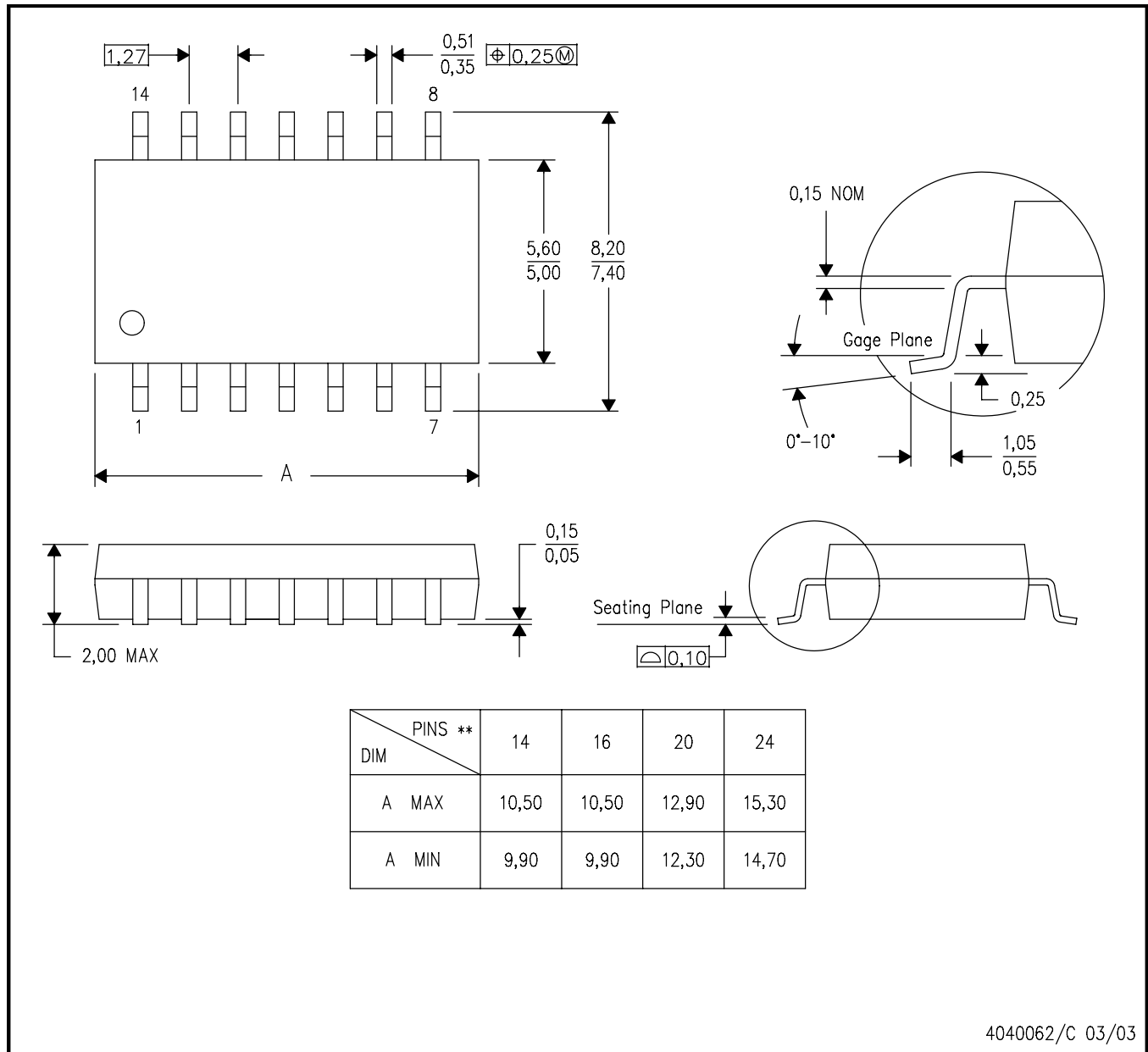
- NOTES:
- All linear dimensions are in millimeters.
 - This drawing is subject to change without notice.
 - Publication IPC-7351 is recommended for alternate designs.
 - Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact 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.

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.

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