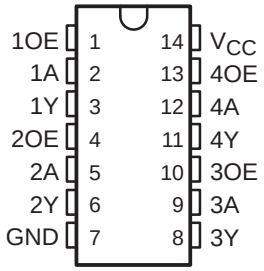
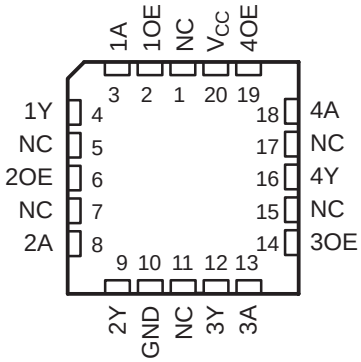
- **State-of-the-Art BiCMOS Design Significantly Reduces I_{CCZ}**
- **ESD Protection Exceeds 2000 V Per MIL-STD-883C, Method 3015**
- **3-State Outputs Drive Bus Lines or Buffer Memory Address Registers**
- **Package Options Include Plastic Small-Outline (D) Packages, Ceramic Chip Carriers (FK) and Flatpacks (W), and Standard Plastic and Ceramic 300-mil DIPs (J, N)**

SN54BCT126A . . . J OR W PACKAGE
SN74BCT126A . . . D OR N PACKAGE
(TOP VIEW)



SN54BCT126A . . . FK PACKAGE
(TOP VIEW)



NC – No internal connection

description

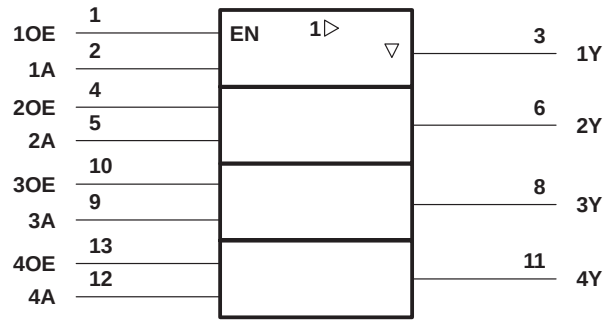
The ′BCT126A bus buffer features independent line drivers with 3-state outputs. Each output is disabled when the associated output-enable (OE) input is low.

The SN54BCT126A is characterized for operation over the full military temperature range of –55°C to 125°C. The SN74BCT126A is characterized for operation from 0°C to 70°C.

FUNCTION TABLE
(each buffer)

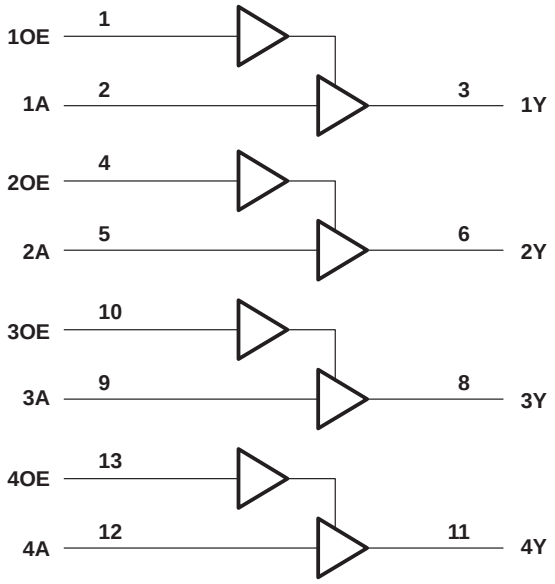
INPUTS		OUTPUT
OE	A	Y
H	H	H
H	L	L
L	X	Z

logic symbol†



† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagram (positive logic)



Pin numbers shown are for the J, N, and W packages.

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)‡

Supply voltage range, V_{CC} . . . . . – 0.5 V to 7 V
Input voltage range, V_I (see Note 1) . . . . . – 0.5 V to 7 V
Voltage range applied to any output in the disabled or power-off state, V_O . . . . . – 0.5 V to 5.5 V
Voltage range applied to any output in the high state, V_O . . . . . – 0.5 V to V_{CC}
Current into any output in the low state: SN54BCT126A . . . . . 96 mA
SN74BCT126A . . . . . 128 mA
Operating free-air temperature range: SN54BCT126A . . . . . – 55°C to 125°C
SN74BCT126A . . . . . 0°C to 70°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.

NOTE 1: The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

recommended operating conditions

		SN54BCT126A			SN74BCT126A			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC}	Supply voltage	4.5	5	5.5	4.5	5	5.5	V
V_{IH}	High-level input voltage	2			2			V
V_{IL}	Low-level input voltage			0.8			0.8	V
I_{IK}	Input clamp current			–18			–18	mA
I_{OH}	High-level output current			–12			–15	mA
I_{OL}	Low-level output current			48			64	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		SN54BCT126A			SN74BCT126A			UNIT
			MIN	TYP†	MAX	MIN	TYP†	MAX	
V_{IK}	V_{CC} = 4.5 V,	I_I = –18 mA			–1.2			–1.2	V
V_{OH}	V_{CC} = 4.5 V	I_{OH} = –3 mA	2.4	3.3		2.4	3.3		V
		I_{OH} = –12 mA	2	3.2					
		I_{OH} = –15 mA				2	3.1		
V_{OL}	V_{CC} = 4.5 V	I_{OL} = 48 mA		0.38	0.55				V
		I_{OL} = 64 mA					0.42	0.55	
I_I	V_{CC} = 0,	V_I = 7 V			0.1			0.1	mA
I_{IH}	V_{CC} = 5.5 V,	V_I = 2.7 V			35			25	µA
I_{IL}	V_{CC} = 5.5 V,	V_I = 0.5 V			–20			–20	µA
I_{OZH}	V_{CC} = 5.5 V,	V_O = 2.7 V			50			50	µA
I_{OZL}	V_{CC} = 5.5 V,	V_O = 0.5 V			–50			–50	µA
I_{OS}‡	V_{CC} = 5.5 V,	V_O = 0	–100		–225	–100		–225	mA
I_{CCH}	V_{CC} = 5.5 V,	Outputs open		21	33		21	33	mA
I_{CCL}	V_{CC} = 5.5 V,	Outputs open		35	51		35	51	mA
I_{CCZ}	V_{CC} = 5.5 V,	Outputs open		5	10		5	10	mA
C_i	V_{CC} = 5 V,	V_I = 2.5 V or 0.5 V		4			4		pF
C_o	V_{CC} = 5 V,	V_O = 2.5 V or 0.5 V		9			9		pF

† All typical values are at V_{CC} = 5 V.
‡ Not more than one output should be tested at a time, and the duration of the test should not exceed one second.

switching characteristics (see Note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC} = 5 V, C_L = 50 pF, R1 = 500 Ω, R2 = 500 Ω, T_A = 25°C			V_{CC} = 4.5 V to 5.5 V, C_L = 50 pF, R1 = 500 Ω, R2 = 500 Ω, T_A = MIN to MAX§				UNIT
			′BCT126A			SN54BCT126A		SN74BCT126A		
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t_{PLH}	A	Y	1.5	3.6	4.9	1.5	5.6	1.5	6.3	ns
t_{PHL}			2.7	5.3	6.9	2.7	7.7	2.7	7.4	
t_{PZH}	OE	Y	2.6	4.8	6.4	2.6	7.2	2.6	7.9	ns
t_{PZL}			3.7	6.4	8.3	3.7	10.5	3.7	10	
t_{PHZ}	OE	Y	3.2	6.6	8.2	3.2	9.6	3.2	10	ns
t_{PLZ}			3.4	6.5	8	3.4	12.3	3.4	10.7	

§ For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

PACKAGING INFORMATION

Orderable part number	Status (1)	Material type (2)	Package | Pins	Package qty | Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
5962-9088901M2A	Active	Production	LCCC (FK) | 20	55 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901M2A SNJ54BCT126AFK
5962-9088901MCA	Active	Production	CDIP (J) | 14	25 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901MCA SNJ54BCT126AJ
5962-9088901MDA	Active	Production	CFP (W) | 14	25 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901MDA SNJ54BCT126AW
SN54BCT126AJ	Active	Production	CDIP (J) | 14	25 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	SN54BCT126AJ
SN54BCT126AJ.A	Active	Production	CDIP (J) | 14	25 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	SN54BCT126AJ
SNJ54BCT126AFK	Active	Production	LCCC (FK) | 20	55 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901M2A SNJ54BCT126AFK
SNJ54BCT126AFK.A	Active	Production	LCCC (FK) | 20	55 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901M2A SNJ54BCT126AFK
SNJ54BCT126AJ	Active	Production	CDIP (J) | 14	25 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901MCA SNJ54BCT126AJ
SNJ54BCT126AJ.A	Active	Production	CDIP (J) | 14	25 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901MCA SNJ54BCT126AJ
SNJ54BCT126AW	Active	Production	CFP (W) | 14	25 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901MDA SNJ54BCT126AW
SNJ54BCT126AW.A	Active	Production	CFP (W) | 14	25 | TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9088901MDA SNJ54BCT126AW

(1) **Status:** For more details on status, see our product life cycle.

(2) **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

(3) **RoHS values:** Yes, No, RoHS Exempt. See the TI RoHS Statement for additional information and value definition.

(4) **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

(5) **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

(6) **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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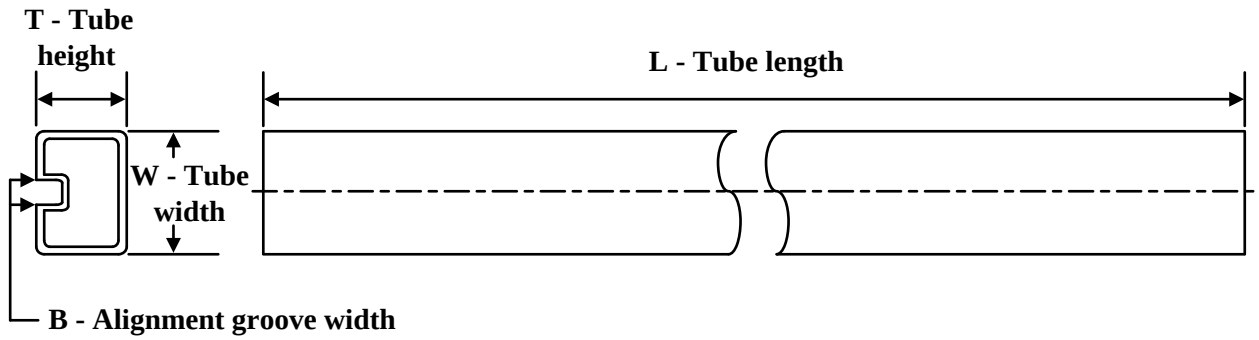
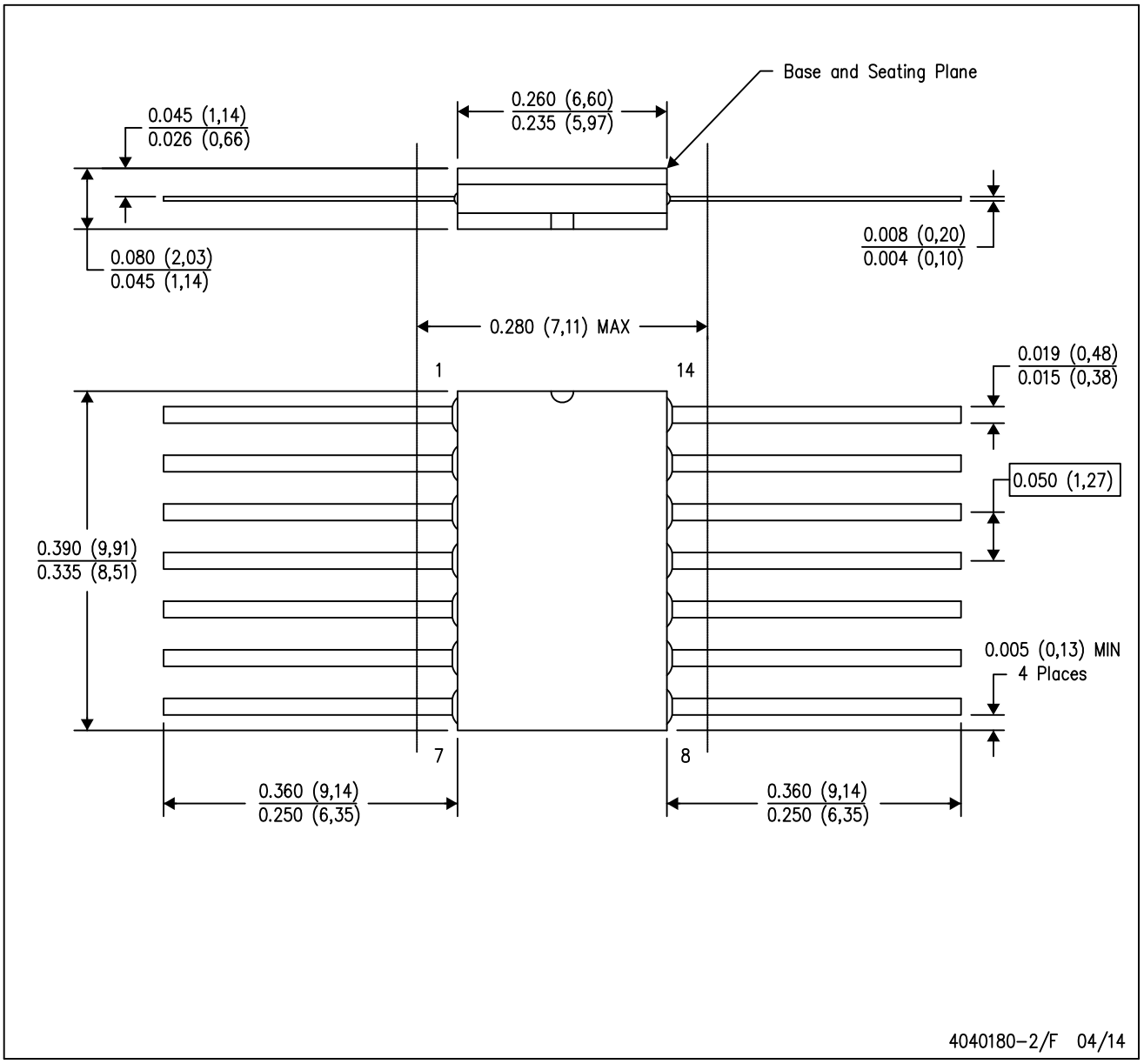
TUBE



*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (µm)	B (mm)
5962-9088901M2A	FK	LCCC	20	55	506.98	12.06	2030	NA
5962-9088901MDA	W	CFP	14	25	506.98	26.16	6220	NA
SNJ54BCT126AFK	FK	LCCC	20	55	506.98	12.06	2030	NA
SNJ54BCT126AFK.A	FK	LCCC	20	55	506.98	12.06	2030	NA
SNJ54BCT126AW	W	CFP	14	25	506.98	26.16	6220	NA
SNJ54BCT126AW.A	W	CFP	14	25	506.98	26.16	6220	NA

W (R–GDFP–F14) 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–F14

GENERIC PACKAGE VIEW

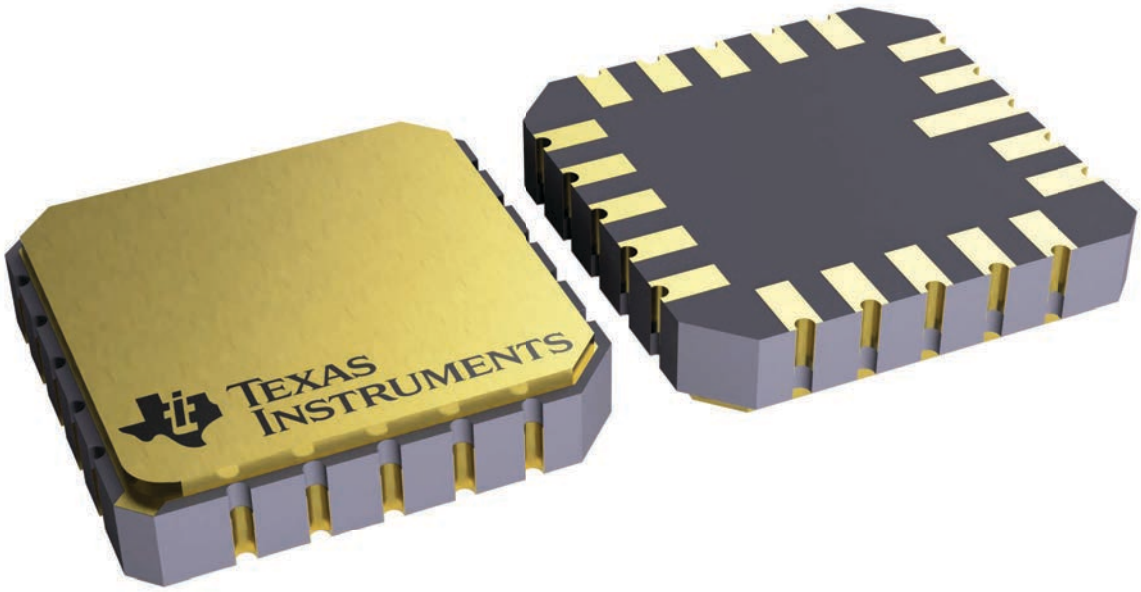
FK 20

LCCC - 2.03 mm max height

8.89 x 8.89, 1.27 mm pitch

LEADLESS CERAMIC CHIP CARRIER

This image is a representation of the package family, actual package may vary.
Refer to the product data sheet for package details.

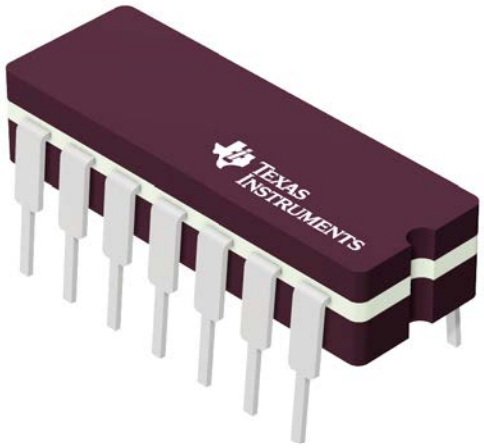


4229370VA\

GENERIC PACKAGE VIEW

J 14 CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE



Images above are just a representation of the package family, actual package may vary.
Refer to the product data sheet for package details.

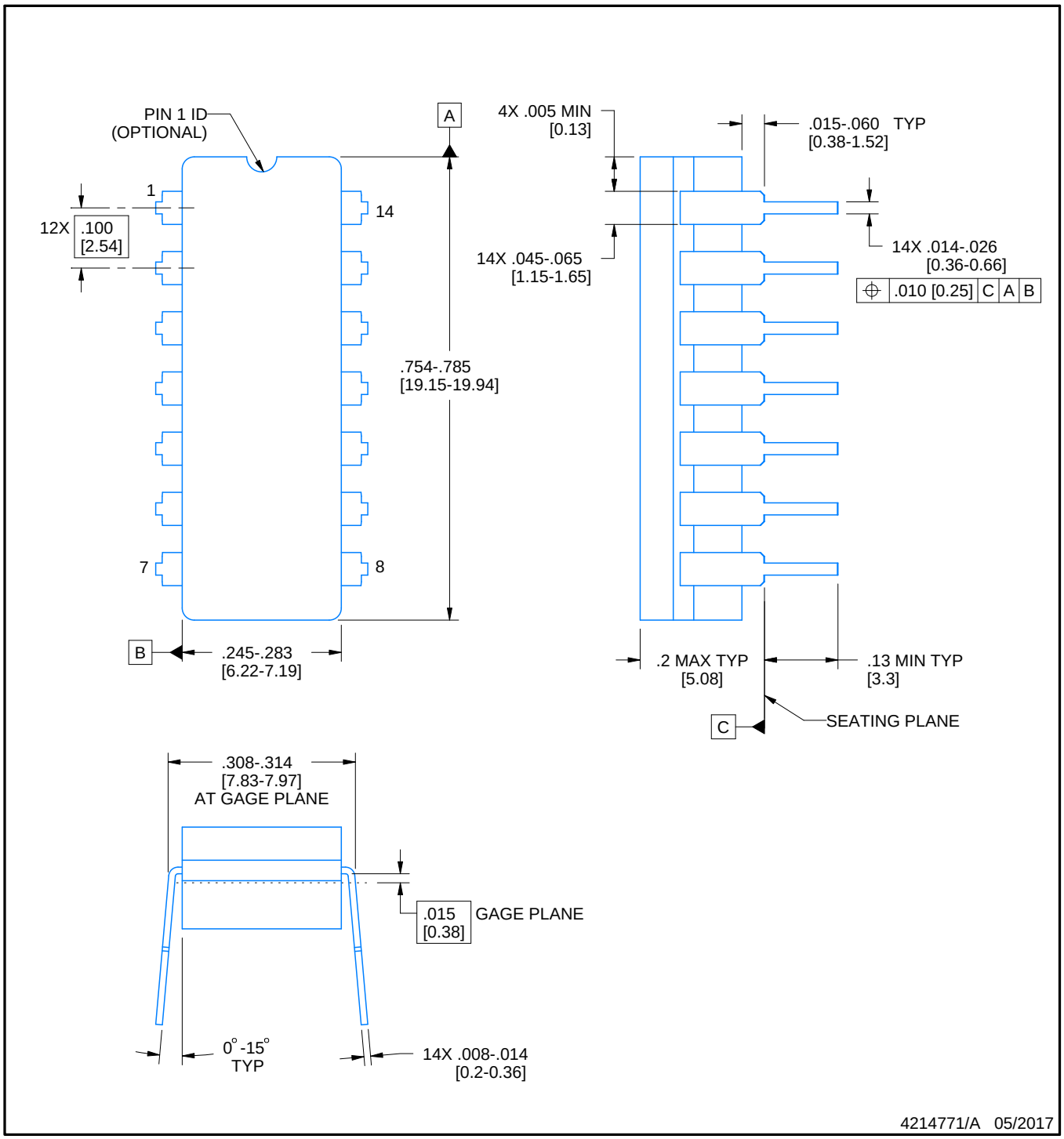
4040083-5/G

PACKAGE OUTLINE

J0014A

CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE



NOTES:

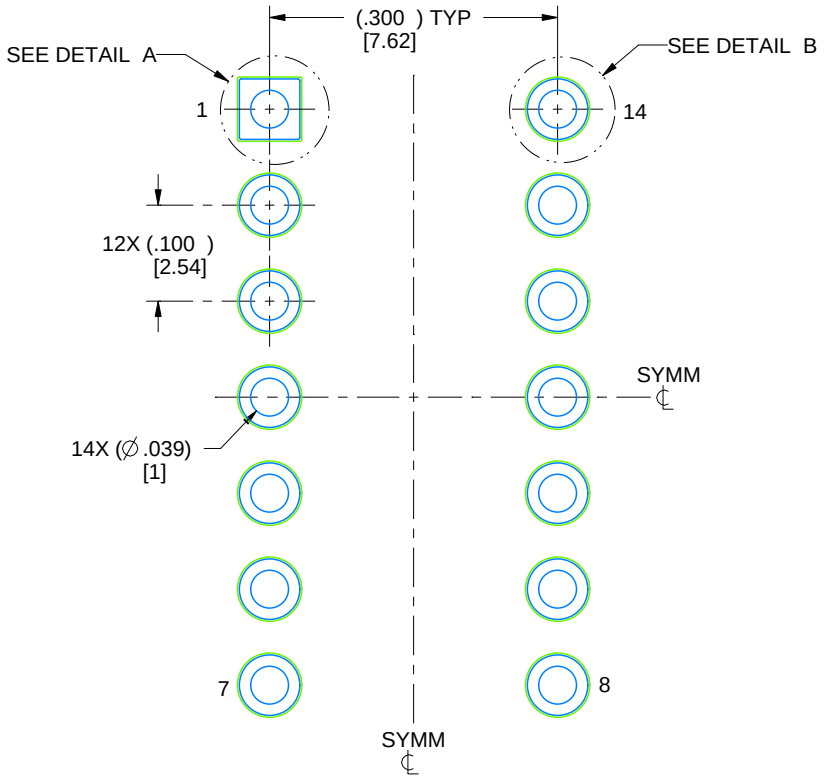
1. All controlling linear dimensions are in inches. Dimensions in brackets are in millimeters. Any dimension in brackets or parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This package is hermitically sealed with a ceramic lid using glass frit.
4. Index point is provided on cap for terminal identification only and on press ceramic glass frit seal only.
5. Falls within MIL-STD-1835 and GDIP1-T14.

EXAMPLE BOARD LAYOUT

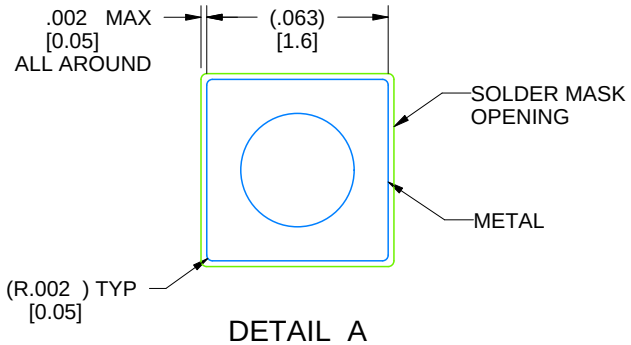
J0014A

CDIP - 5.08 mm max height

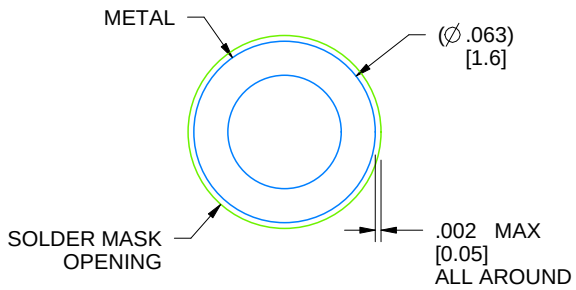
CERAMIC DUAL IN LINE PACKAGE



LAND PATTERN EXAMPLE
NON-SOLDER MASK DEFINED
SCALE: 5X



DETAIL A
SCALE: 15X



DETAIL B
13X, SCALE: 15X

4214771/A 05/2017

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