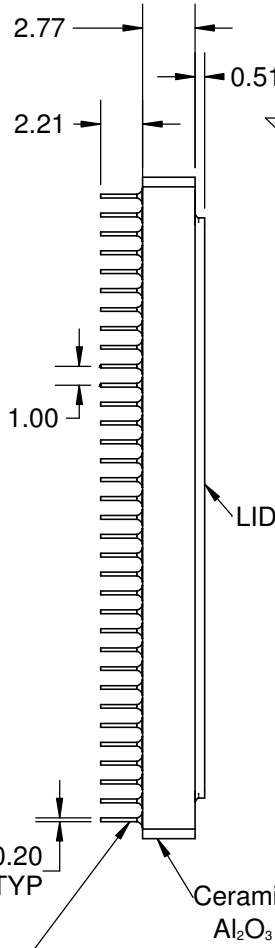
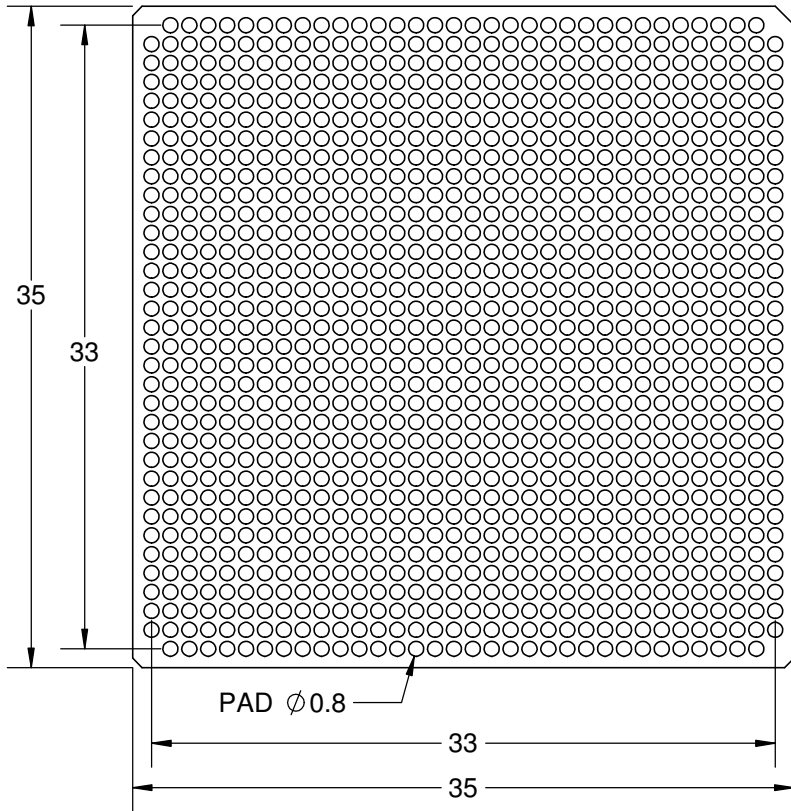
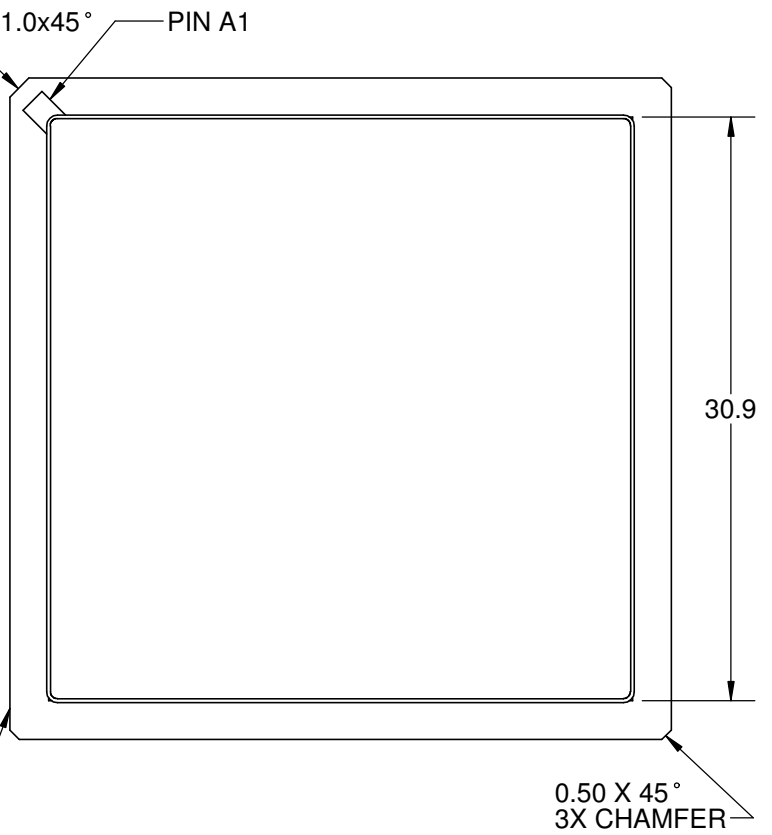


BOTTOM VIEW

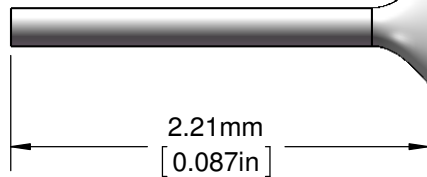
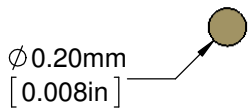
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34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2



TOP VIEW



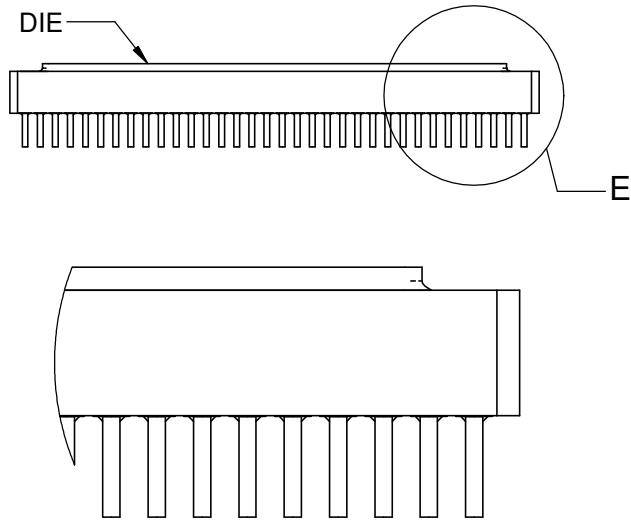
**OFHC-101
COPPER COLUMNS
ELECTROPLATED Sn60/Pb40**



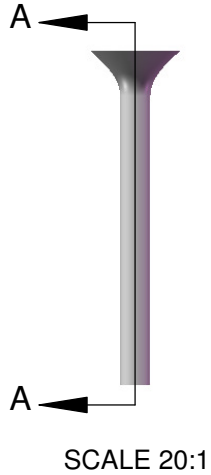
Notes: (Unless Otherwise Specified).
1) DIMENSIONS mm [INCH].

APPROVALS	DATE	TopLine®			
DRAWN T. Au	6/7/2017				
ENG M. Hart	6/7/2017	TITLE CCGA1152T1.0C8-DC346D DUMMY COLUMN GRID ARRAY			
MFG		SCALE	SIZE	DRAWING NO.	REV
QA		2.5:1	A	160153	A
CUST		DO NOT SCALE DRAWING			SHEET 1 OF 8
REVISED					

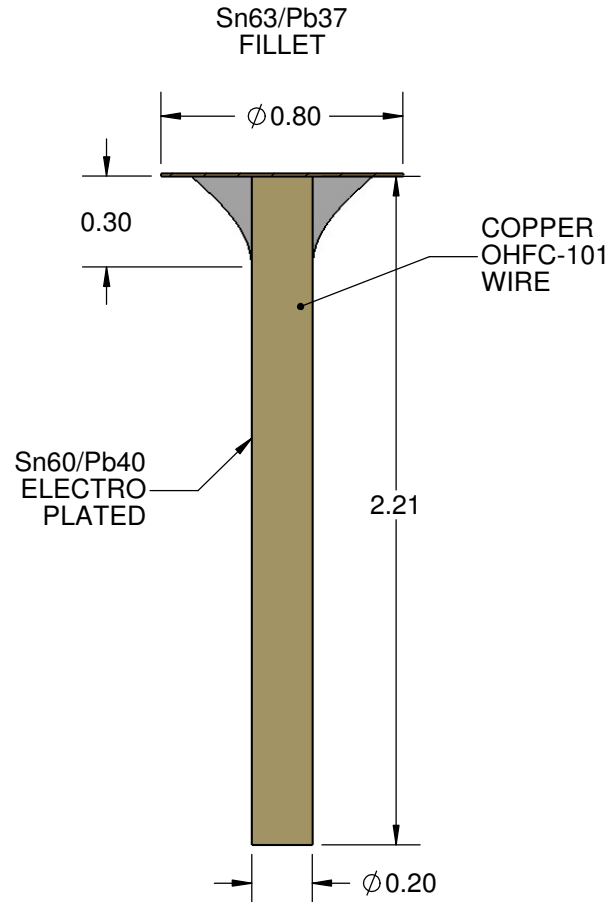
SOLDER PIN



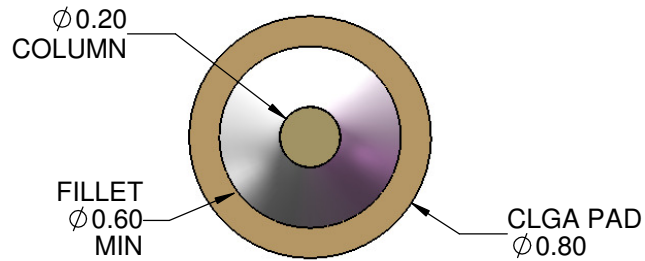
DETAIL E
SCALE 6 : 1



SCALE 20:1



SECTION A-A
SCALE 40 : 1

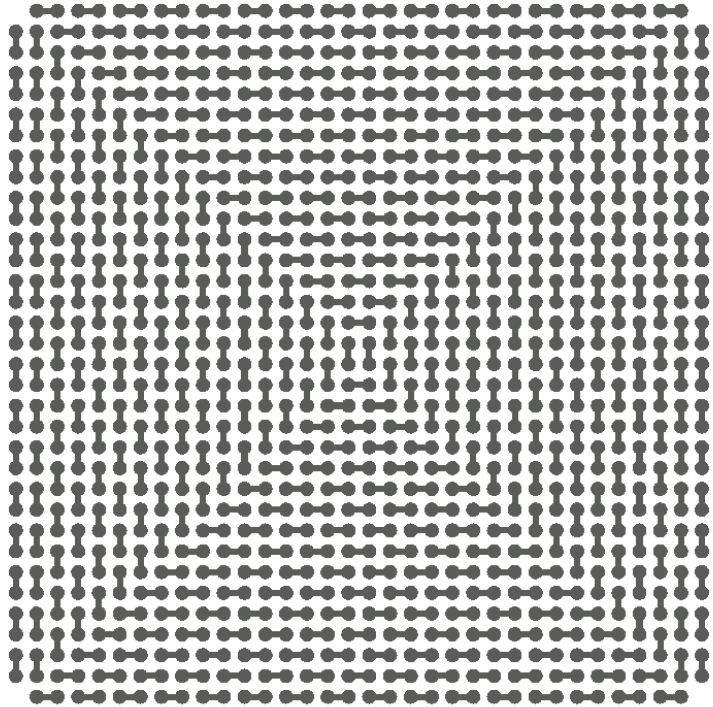


TopLine®			
TITLE CCGA1152T1.0C8-DC346D DUMMY COLUMN GRID ARRAY			
SCALE 2:1	SIZE A	DRAWING NO. 160153	REV A
DO NOT SCALE DRAWING		SHEET 2 OF 8	

DAISY CHAIN PATTERN

COLUMN VIEW

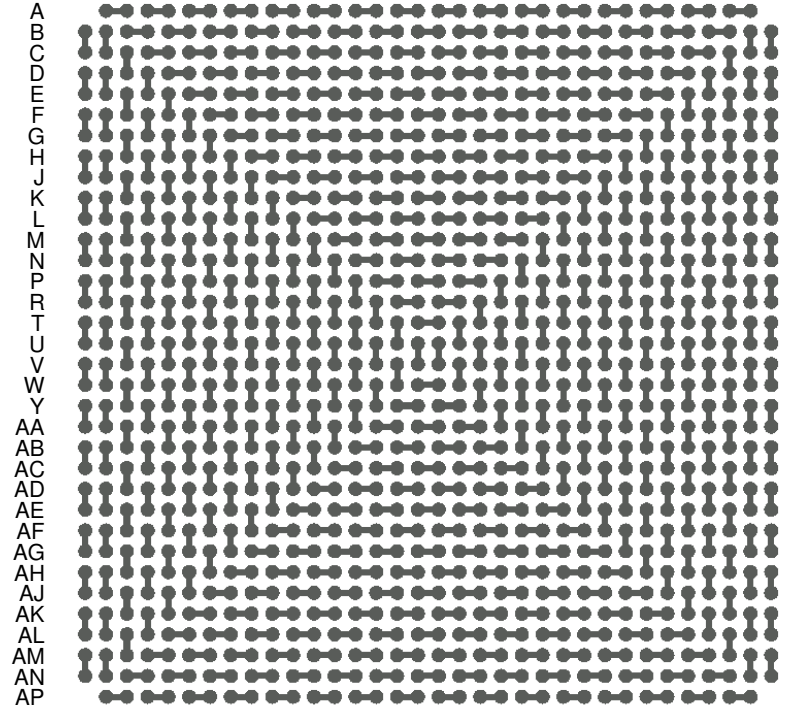
34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2
 33 31 29 27 25 23 21 19 17 15 13 11 9 7 5 3 1



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G
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BOTTOM X-RAY VIEWED FROM TOP

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34
 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33



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AF
AG
AH
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AP

TopLine®

TITLE CCGA1152T1.0C8-DC346D
 DUMMY COLUMN GRID ARRAY

SCALE 2.75:1	SIZE A	DRAWING NO. 160153	REV A
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DO NOT SCALE DRAWING

SHEET 3 OF 8

NET LIST DAISY CHAIN CONNECTION TABLE (1/2)

function: SIGNAL

LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.
A2 A3	AA11 AB11	AB18 AB19	AC26 AD26	AD33 AE33	AF6 AG6	AG13 AG14	AH20 AH21	AJ27 AJ28	AK34 AL34	AM8 AM9	AN15 AN16	AP24 AP25	B29 B30	D1 E1	E5 F5
A4 A5	AA13 AB13	AB20 AB21	AC28 AD28	AD34 AE34	AF8 AG8	AG15 AG16	AH22 AH23	AJ30 AK30	AL3 AM3	AM10 AM11	AN17 AN18	AP26 AP27	B31 B32	D2 E2	E6 E7
A6 A7	AA15 AA16	AB23 AC23	AC30 AD30	AE3 AF3	AF10 AF11	AG17 AG18	AH24 AH25	AJ32 AK32	AL5 AL6	AM12 AM13	AN19 AN20	AP28 AP29	B33 C33	D4 E4	E8 E9
A8 A9	AA17 AA18	AB25 AC25	AC32 AD32	AE5 AF5	AF12 AF13	AG19 AG20	AH26 AH27	AK1 AL1	AL7 AL8	AM14 AM15	AN21 AN22	AP30 AP31	B34 C34	D5 D6	E10 E11
A10 A11	AA19 AA20	AB27 AC27	AD1 AE1	AE7 AF7	AF14 AF15	AG21 AG22	AH29 AJ29	AK2 AL2	AL9 AL10	AM16 AM17	AN23 AN24	AP32 AP33	C3 D3	D7 D8	E12 E13
A12 A13	AA22 AB22	AB29 AC29	AD2 AE2	AE9 AF9	AF16 AF17	AG23 AG24	AH31 AJ31	AK4 AL4	AL11 AL12	AM18 AM19	AN25 AN26	B1 C1	C4 C5	D9 D10	E14 E15
A14 A15	AA24 AB24	AB31 AC31	AD4 AE4	AE11 AE12	AF18 AF19	AG25 AG26	AH33 AJ33	AK6 AK7	AL13 AL14	AM20 AM21	AN27 AN28	B2 C2	C6 C7	D11 D12	E16 E17
A16 A17	AA26 AB26	AB33 AC33	AD6 AE6	AE13 AE14	AF20 AF21	AG28 AH28	AH34 AJ34	AK8 AK9	AL15 AL16	AM22 AM23	AN29 AN30	B3 B4	C8 C9	D13 D14	E18 E19
A18 A19	AA28 AB28	AB34 AC34	AD8 AE8	AE15 AE16	AF22 AF23	AG30 AH30	AJ3 AK3	AK10 AK11	AL17 AL18	AM24 AM25	AN31 AN32	B5 B6	C10 C11	D15 D16	E20 E21
A20 A21	AA30 AB30	AC3 AD3	AD10 AE10	AE17 AE18	AF24 AF25	AG32 AH32	AJ5 AK5	AK12 AK13	AL19 AL20	AM26 AM27	AP2 AP3	B7 B8	C12 C13	D17 D18	E22 E23
A22 A23	AA32 AB32	AC5 AD5	AD12 AD13	AE19 AE20	AF27 AG27	AH1 AJ1	AJ7 AJ8	AK14 AK15	AL21 AL22	AM28 AM29	AP4 AP5	B9 B10	C14 C15	D19 D20	E24 E25
A24 A25	AB1 AC1	AC7 AD7	AD14 AD15	AE21 AE22	AF29 AG29	AH2 AJ2	AJ9 AJ10	AK16 AK17	AL23 AL24	AM30 AM31	AP6 AP7	B11 B12	C16 C17	D21 D22	E26 E27
A26 A27	AB2 AC2	AC9 AD9	AD16 AD17	AE23 AE24	AF31 AG31	AH4 AJ4	AJ11 AJ12	AK18 AK19	AL25 AL26	AM33 AN33	AP8 AP9	B13 B14	C18 C19	D23 D24	E28 E29
A28 A29	AB4 AC4	AC11 AD11	AD18 AD19	AE26 AF26	AF33 AG33	AH6 AJ6	AJ13 AJ14	AK20 AK21	AL27 AL28	AM34 AN34	AP10 AP11	B15 B16	C20 C21	D25 D26	E30 F30
A30 A31	AB6 AC6	AC13 AC14	AD20 AD21	AE28 AF28	AF34 AG34	AH8 AH9	AJ15 AJ16	AK22 AK23	AL29 AL30	AN3 AN4	AP12 AP13	B17 B18	C22 C23	D27 D28	E32 F32
A32 A33	AB8 AC8	AC15 AC16	AD22 AD23	AE30 AF30	AG3 AH3	AH10 AH11	AJ17 AJ18	AK24 AK25	AL32 AM32	AN5 AN6	AP14 AP15	B19 B20	C24 C25	D29 D30	F1 G1
AA3 AB3	AB10 AC10	AC17 AC18	AD25 AE25	AE32 AF32	AG5 AH5	AH12 AH13	AJ19 AJ20	AK26 AK27	AM1 AN1	AN7 AN8	AP16 AP17	B21 B22	C26 C27	D31 E31	F2 G2
AA5 AB5	AB12 AC12	AC19 AC20	AD27 AE27	AF1 AG1	AG7 AH7	AH14 AH15	AJ21 AJ22	AK28 AK29	AM2 AN2	AN9 AN10	AP18 AP19	B23 B24	C28 C29	D33 E33	F4 G4
AA7 AB7	AB14 AC15	AC21 AC22	AD29 AE29	AF2 AG2	AG9 AG10	AH16 AH17	AJ23 AJ24	AK31 AL31	AM4 AM5	AN11 AN12	AP20 AP21	B25 B26	C30 C31	D34 E34	F6 G6
AA9 AB9	AB16 AB17	AC24 AD24	AD31 AE31	AF4 AG4	AG11 AG12	AH18 AH19	AJ25 AJ26	AK33 AL33	AM6 AM7	AN13 AN14	AP22 AP23	B27 B28	C32 D32	E3 F3	F7 F8

NET LIST CONTINUED NEXT PAGE

TopLine®

TITLE CCGA1152T1.0C8-DC346D
DUMMY COLUMN GRID ARRAY

SCALE NONE	SIZE A	DRAWING NO. 160153	REV A
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DO NOT SCALE DRAWING

SHEET 4 OF 8

NET LIST DAISY CHAIN CONNECTION TABLE (2/2)

function: SIGNAL

LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	LGA No.	
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F10	G15	H20	J25	L29	N1	P5	R10	T15	U19	V24	W31	AA4		
F11	G16	H21	J26	K31	M2	N7	P12	R16	T21	U26	V33	Y6		
F12	G17	H22	K26	L31	N2	P7	R12	R17	U21	V26	W33	AA6		
F13	G18	H23	J28	K33	M4	N9	P14	R18	T23	U28	V34	Y8		
F14	G19	H24	K28	L33	N4	P9	R14	R19	U23	V28	W34	AA8		
F15	G20	H25	J30	K34	M6	N11	P15	R20	T25	U30	W3	Y10		
F16	G21	H26	K30	L34	N6	P11	P16	T20	U25	V30	Y3	AA10		
F17	G22	H27	J32	L3	M8	N13	P17	R22	T27	U32	W5	Y12		
F18	G23	J27	K32	M3	N8	P13	P18	T22	U27	V32	Y5	AA12		
F19	G24	H29	K1	L5	M10	N14	P19	R24	T29	V1	W7	Y14		
F20	G25	J29	L1	M5	N10	N15	P20	T24	U29	W1	Y7	AA14		
F21	G26	H31	K2	L7	M12	N16	P21	R26	T31	V2	W9	Y16		
F22	G27	J31	L2	M7	N12	N17	R21	T26	U31	W2	Y9	Y17		
F23	G28	H33	K4	L9	M13	N18	P23	R28	T33	V4	W11	Y18		
F24	H28	J33	L4	M9	M14	N19	R23	T28	U33	W4	Y11	Y19		
F25	G30	H34	K6	L11	M15	N20	P25	R30	T34	V6	W13	Y21		
F26	H30	J34	L6	M11	M16	N21	R25	T30	U34	W6	Y13	AA21		
F27	G32	J3	K8	L12	M17	N22	P27	R32	U3	V8	W15	Y23		
F28	H32	K3	L8	L13	M18	P22	R27	T32	V3	W8	Y15	AA23		
F29	H1	J5	K10	L14	M19	N24	P29	T1	U5	V10	W17	Y25		
G29	J1	K5	L10	L15	M20	P24	R29	U1	V5	W10	W18	AA25		
F31	H2	J7	K11	L16	M21	N26	P31	T2	U7	V12	W20	Y27		
G31	J2	K7	K12	L17	M22	P26	R31	U2	V7	W12	Y20	AA27		
F33	H4	J9	K13	L18	M23	N28	P33	T4	U9	V14	W22	Y29		
G33	J4	K9	K14	L19	N23	P28	R33	U4	V9	W14	Y22	AA29		
F34	H6	J10	K15	L20	M25	N30	P34	T6	U11	V16	W24	Y31		
G34	J6	J11	K16	L21	N25	P30	R34	U6	V11	W16	Y24	AA31		
G3	H8	J12	K17	L22	M27	N32	R3	T8	U13	V19	W26	Y33		
H3	J8	J13	K18	L23	N27	P32	T3	U8	V13	W19	Y26	AA33		
G5	H9	J14	K19	L24	M29	P1	R5	T10	U15	V21	W28	Y34		
H5	H10	J15	K20	M24	N29	R1	T5	U10	V15	W21	Y28	AA34		
G7	H11	J16	K21	L26	M31	P2	R7	T12	U17	V23	W30			
H7	H12	J17	K22	M26	N31	R2	T7	U12	V17	W23	Y30			
G8	H13	J18	K23	L28	M33	P4	R9	T14	U18	V25	W32		S/R	NC
G9	H14	J19	K24	M28	N33	R4	T9	U14	V18	W25	Y32			
G10	H15	J20	K25	L30	M34	P6	R11	T16	U20	V27	Y1		D/A	NC
G11	H16	J21	L25	M30	N34	R6	T11	U16	V20	W27	AA1			
G12	H17	J22	K27	L32	N3	P8	R13	T17	U22	V29	Y2			
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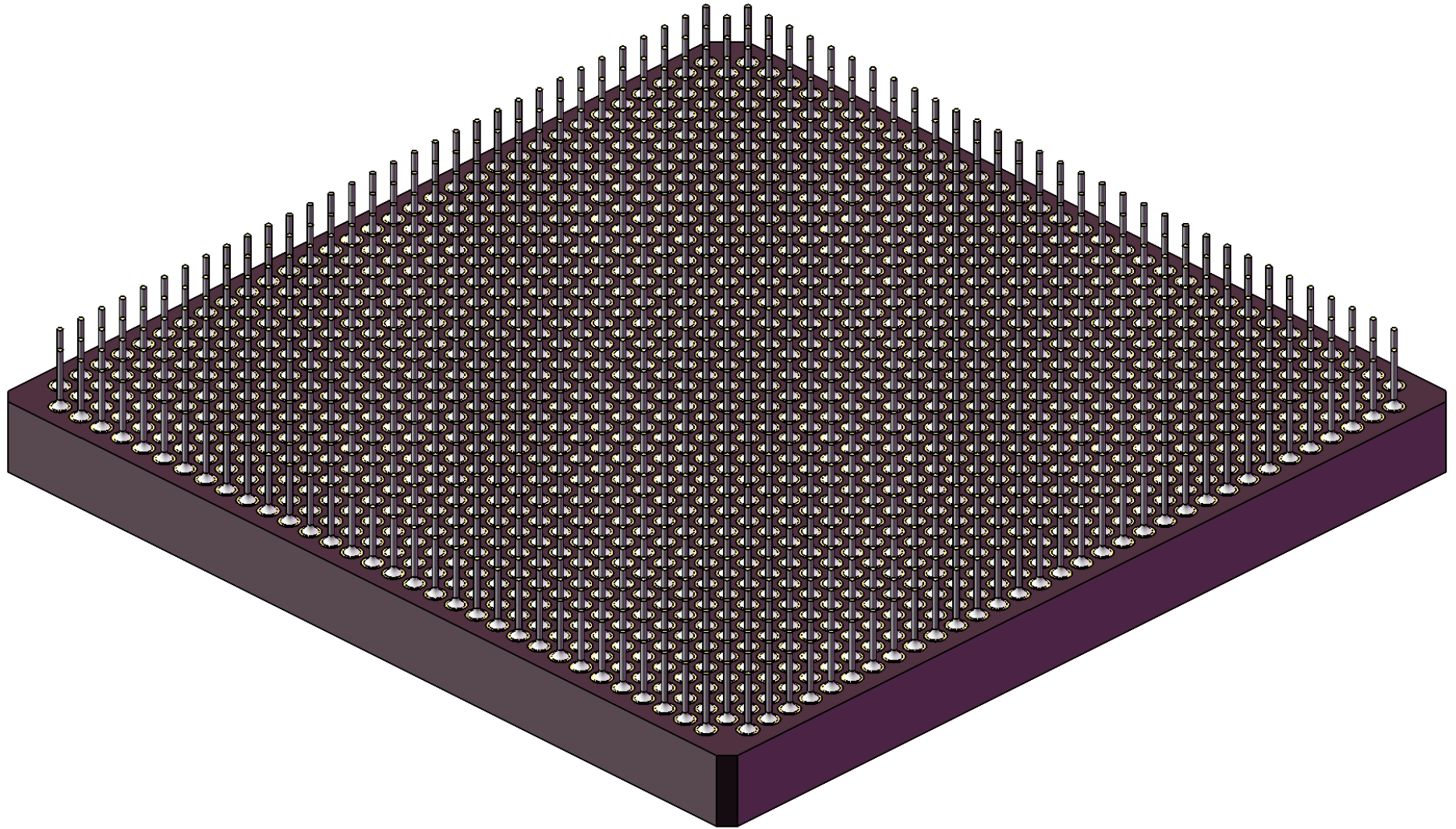
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DUMMY COLUMN GRID ARRAY

SCALE NONE	SIZE A	DRAWING NO. 160153	REV A
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DO NOT SCALE DRAWING

SHEET 5 OF 8

MODEL COLUMN VIEW



TopLine®

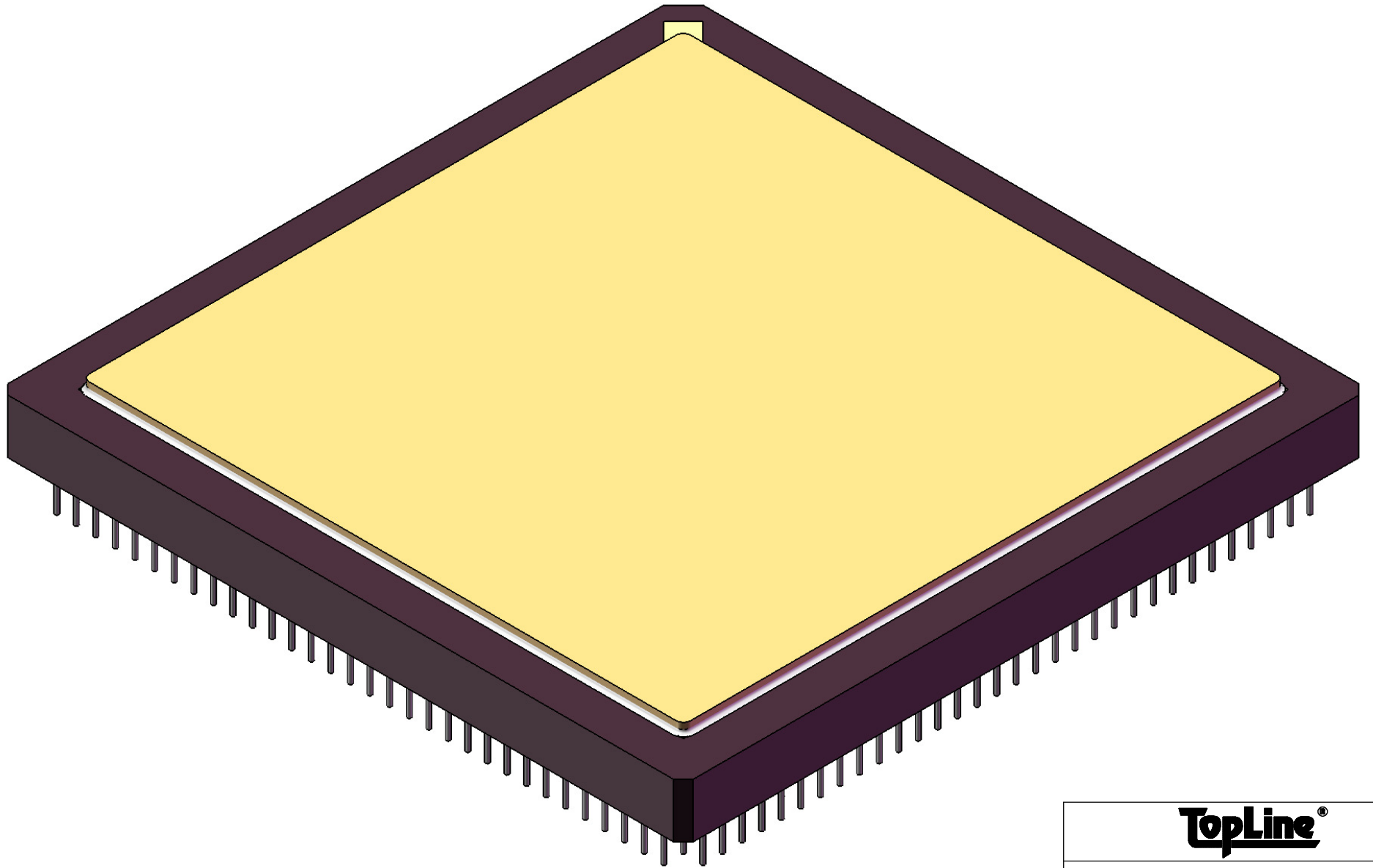
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DUMMY COLUMN GRID ARRAY

SCALE	SIZE	DRAWING NO.	REV
5:1	A	160153	A

DO NOT SCALE DRAWING

SHEET 6 OF 8

**MODEL
TOP VIEW**



TopLine[®]

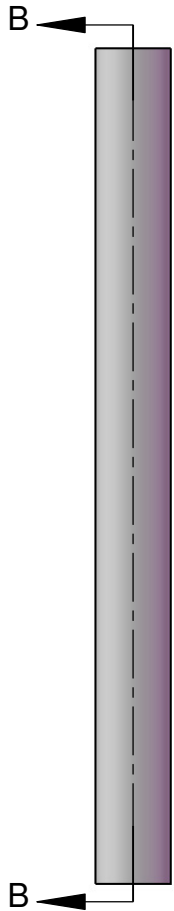
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DUMMY COLUMN GRID ARRAY

SCALE 5:1	SIZE A	DRAWING NO. 160153	REV A
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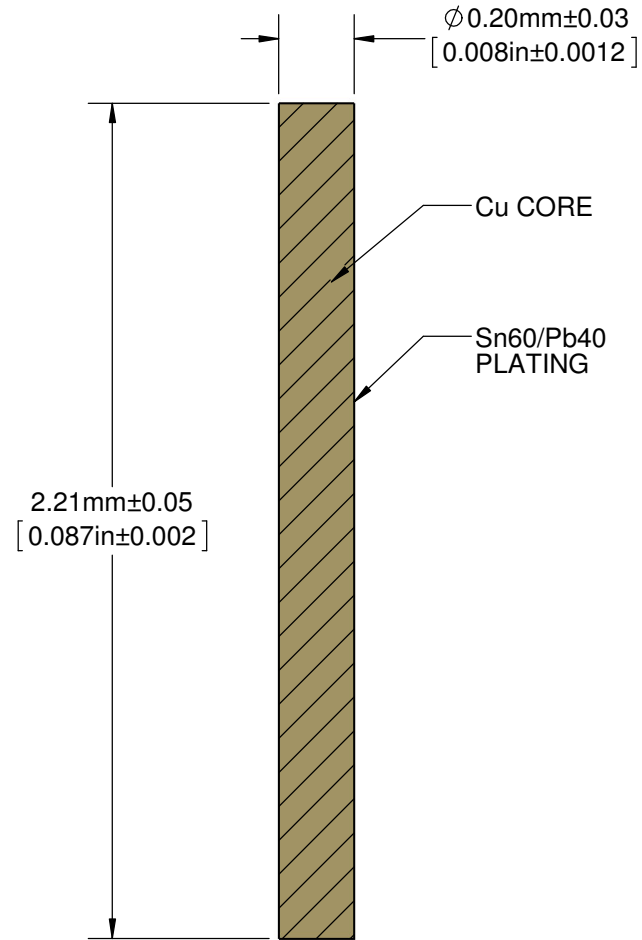
DO NOT SCALE DRAWING

SHEET 7 OF 8

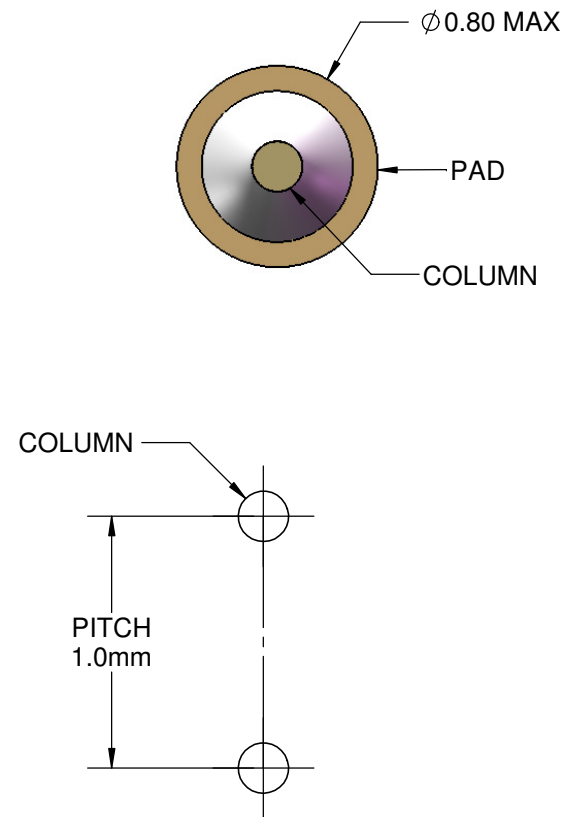
EXTERIOR VIEW



SECTION VIEW



CCGA - LAND PAD



END VIEW

- NOTES:
1. DIMENSIONS IN mm [INCHES].
 2. MATERIAL: Cu COPPER OFHC ANNEALED.
 3. PLATING: Sn60/Pb40 3.0~5.0µm [100~200 MICRO-INCH].

TopLine®			
TITLE		CU101P8x87 CCGA COPPER COLUMN	
SCALE	SIZE	DRAWING NO.	REV
50:1	A	160153	A
DO NOT SCALE DRAWING			SHEET 8 OF 8