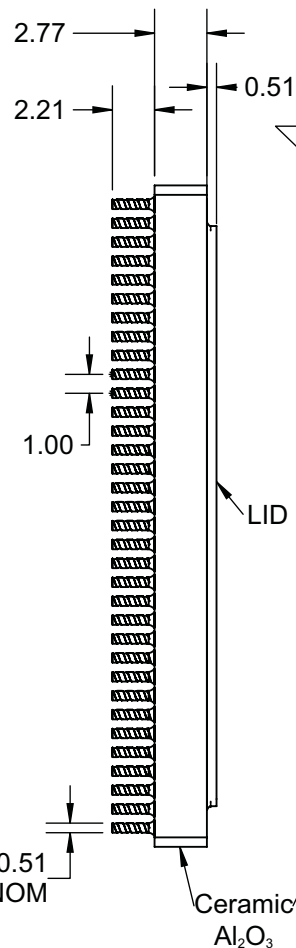
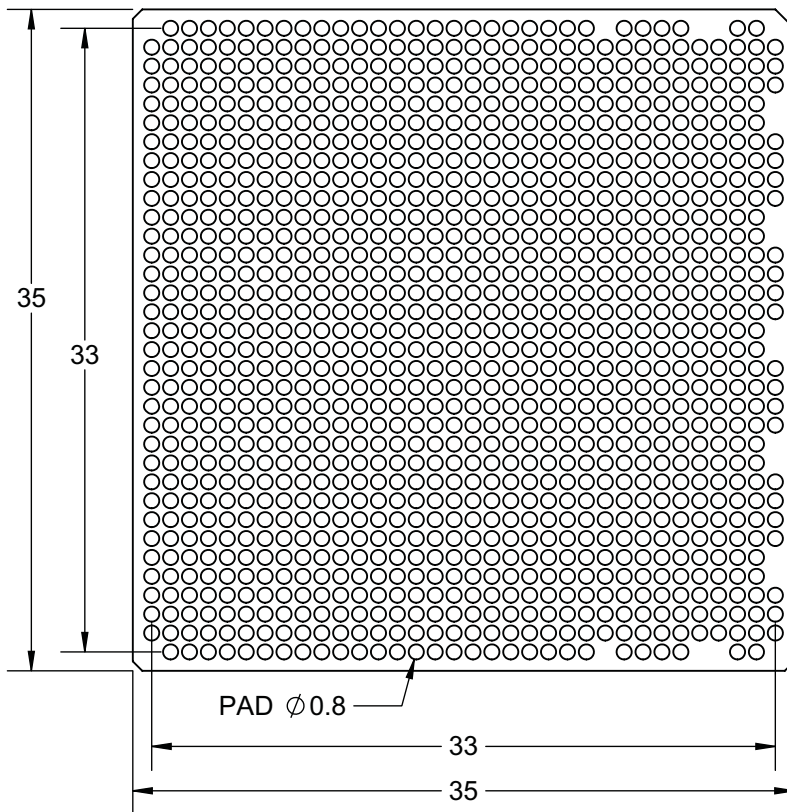
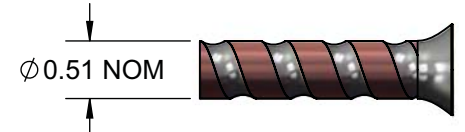
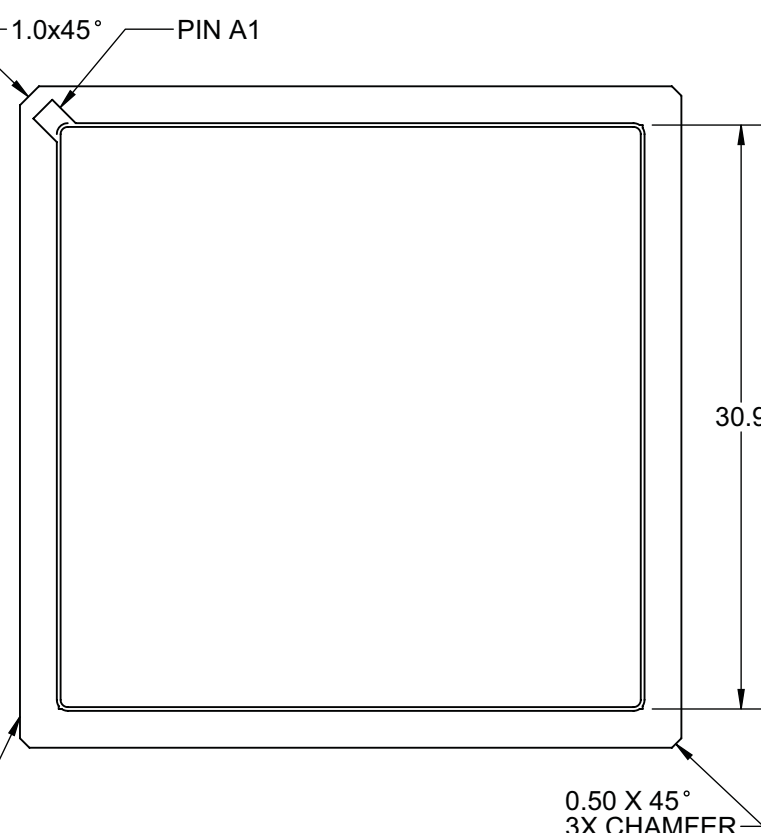


BOTTOM VIEW

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



TOP VIEW



NO CONNECTIONS:

A1, A4, A5, A10, A34, E1, F1, L1, M1, U1, V1,
AC1, AD1, AJ1, AK1, AP1, AP4, AP5, AP10, AP34.

**Pb80/Sn20
Cu RIBBON
COLUMNS**

Notes: (Unless Otherwise Specified).
1) DIMENSIONS ARE IN mm.
2) SHOWN WITH COLUMNS.

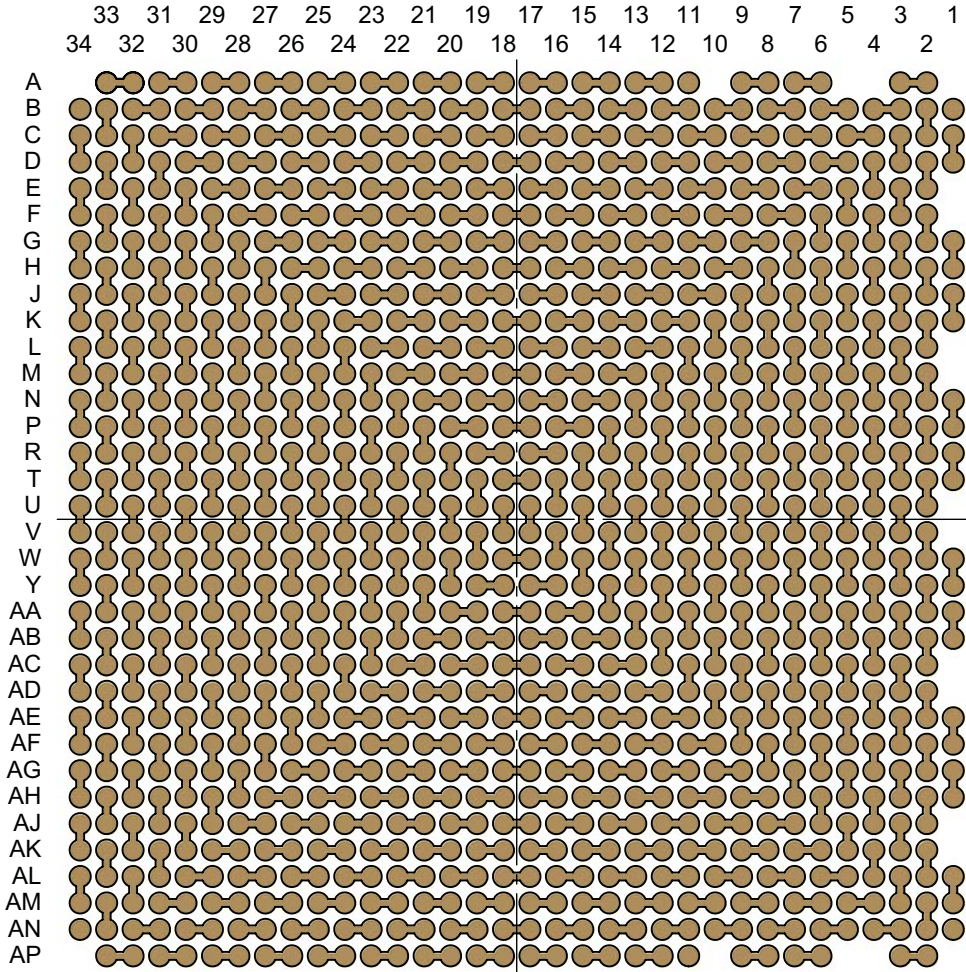
PART NUMBER OPTIONS

PART NUMBER	DUMMY DIE	SOLDER PIN	LID
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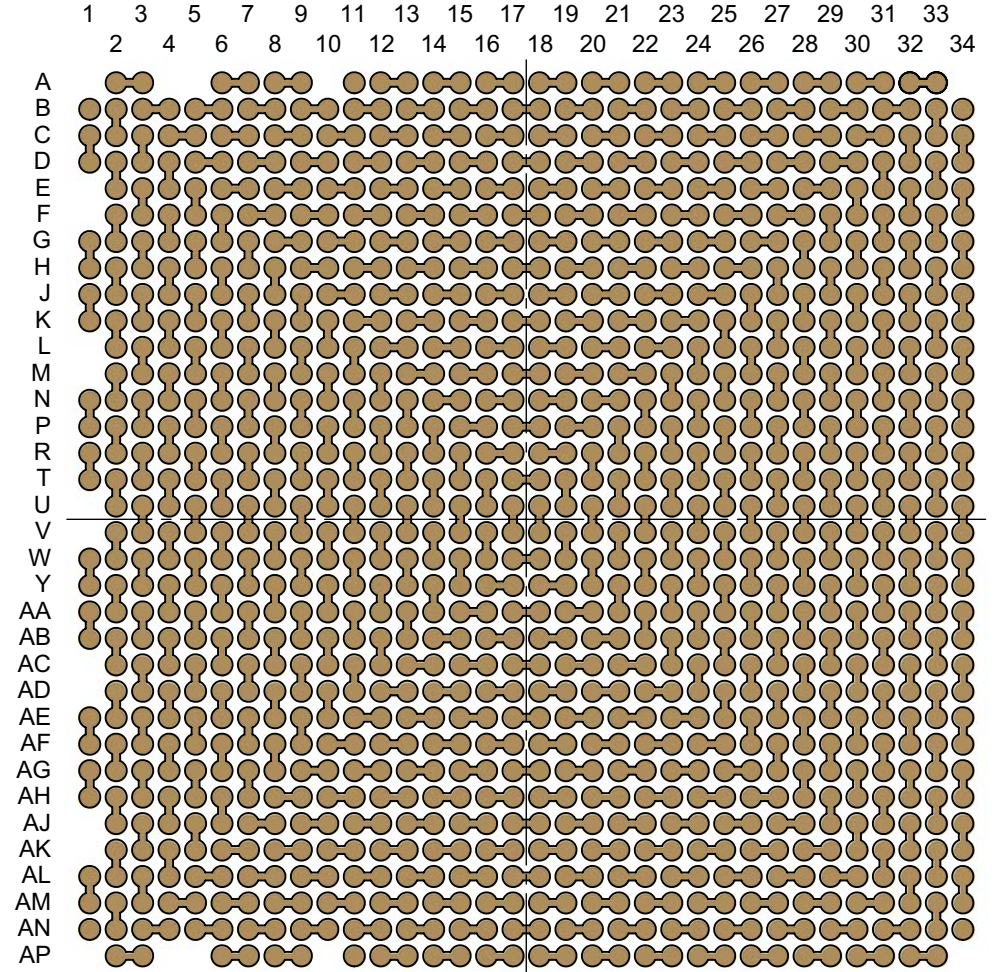
APPROVALS	DATE	TopLine®			
DRAWN T.Au	5/4/2020				
ENG M. Hart	5/4/2020	TITLE CCGA1136T1.0-DC347D COLUMN GRID ARRAY			
MFG		SCALE	SIZE	DRAWING NO.	REV
QA		2.5:1	A	160157	A
CUST		DO NOT SCALE DRAWING			SHEET 1 OF 6
REVISED					

DAISY CHAIN PATTERN

COLUMN (PAD) VIEW



BOTTOM X-RAY VIEWED FROM TOP



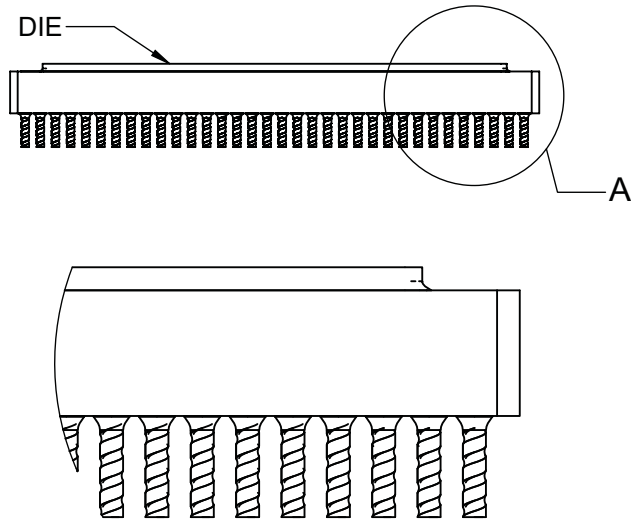
COLUMNS DEPOPULATED:

A1, A4, A5, A10, A34, E1, F1, L1, M1, U1, V1,
AC1, AD1, AJ1, AK1, AP1, AP4, AP5, AP10, AP34.

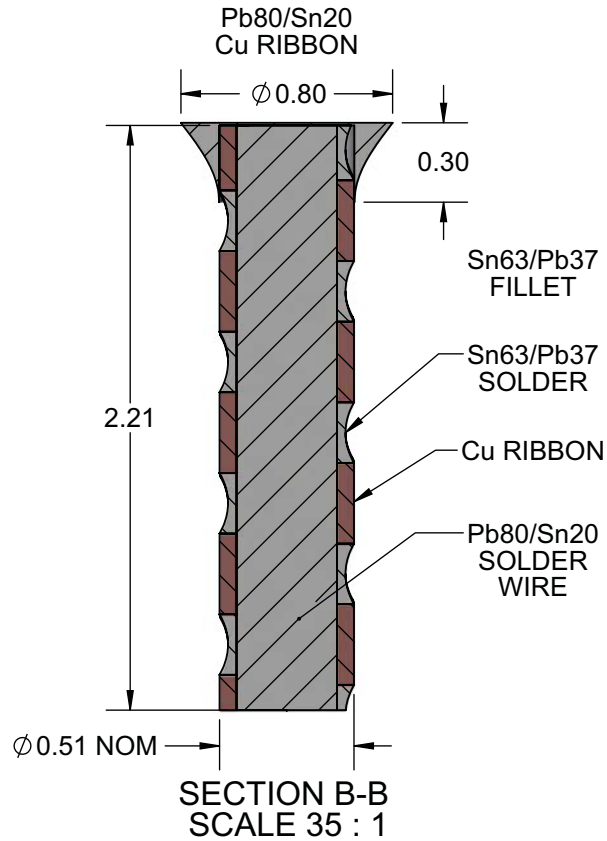
TopLine®

TITLE			
CCGA1136T1.0-DC347D COLUMN GRID ARRAY			
SCALE	SIZE	DRAWING NO.	REV
3.5:1	A	160157	A
DO NOT SCALE DRAWING			SHEET 2 OF 6

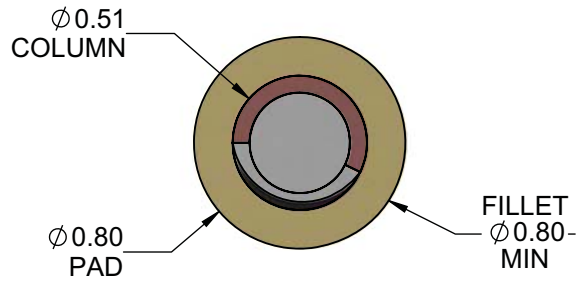
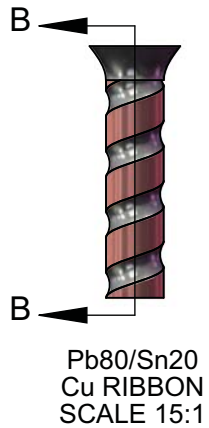
SOLDER PIN OPTIONS



DETAIL A
SCALE 6 : 1



SECTION B-B
SCALE 35 : 1



TopLine[®]

TITLE CCGA1136T1.0-DC347D
COLUMN GRID ARRAY

SCALE	SIZE	DRAWING NO.	REV
2:1	A	160157	A

DO NOT SCALE DRAWING

SHEET 3 OF 6

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 - NC	E5 F5
A4 - NC A5 - NC	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 - NC AL1	AL7 AL8	AM14 AM15	AN21 AN22	AP30 AP31	B34 C34	D5 D6	E10 E11
A10 - NC A11	AA19 AA20	AB27 AC27	AD1 - NC 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 - NC	AJ7 AJ8	AK14 AK15	AL21 AL22	AM28 AM29	AP4 - NC AP5 - NC	B9 B10	C14 C15	D19 D20	E24 E25
A24 A25	AB1 AC1 - NC	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 - NC 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 - NC 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

NO CONNECTIONS:

A1, A4, A5, A10, A34, E1, F1, L1, M1, U1, V1,
AC1, AD1, AJ1, AK1, AP1, AP4, AP5, AP10, AP34.



TITLE CCGA1136T1.0-DC347D
COLUMN GRID ARRAY

SCALE NONE	SIZE A	DRAWING NO. 160157	REV A
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DO NOT SCALE DRAWING

SHEET 4 OF 6

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.
F9 F10	G14 G15	H19 H20	J24 J25	K29 L29	M1 - NC N1	N5 P5	P10 R10	R15 T15	T19 U19	U24 V24	V31 W31	Y4 AA4	
F11 F12	G16 G17	H21 H22	J26 K26	K31 L31	M2 N2	N7 P7	P12 R12	R16 R17	T21 U21	U26 V26	V33 W33	Y6 AA6	
F13 F14	G18 G19	H23 H24	J28 K28	K33 L33	M4 N4	N9 P9	P14 R14	R18 R19	T23 U23	U28 V28	V34 W34	Y8 AA8	
F15 F16	G20 G21	H25 H26	J30 K30	K34 L34	M6 N6	N11 P11	P15 P16	R20 T20	T25 U25	U30 V30	W3 Y3	Y10 AA10	
F17 F18	G22 G23	H27 J27	J32 K32	L3 M3	M8 N8	N13 P13	P17 P18	R22 T22	T27 U27	U32 V32	W5 Y5	Y12 AA12	
F19 F20	G24 G25	H29 J29	K1 L1 - NC	L5 M5	M10 N10	N14 N15	P19 P20	R24 T24	T29 U29	V1 - NC W1	W7 Y7	Y14 AA14	
F21 F22	G26 G27	H31 J31	K2 L2	L7 M7	M12 N12	N16 N17	P21 R21	R26 T26	T31 U31	V2 W2	W9 Y9	Y16 Y17	
F23 F24	G28 H28	H33 J33	K4 L4	L9 M9	M13 M14	N18 N19	P23 R23	R28 T28	T33 U33	V4 W4	W11 Y11	Y18 Y19	
F25 F26	G30 H30	H34 J34	K6 L6	L11 M11	M15 M16	N20 N21	P25 R25	R30 T30	T34 U34	V6 W6	W13 Y13	Y21 AA21	
F27 F28	G32 H32	J3 K3	K8 L8	L12 L13	M17 M18	N22 P22	P27 R27	R32 T32	U3 V3	V8 W8	W15 Y15	Y23 AA23	
F29 G29	H1 J1	J5 K5	K10 L10	L14 L15	M19 M20	N24 P24	P29 R29	T1 U1 - NC	U5 V5	V10 W10	W17 W18	Y25 AA25	
F31 G31	H2 J2	J7 K7	K11 K12	L16 L17	M21 M22	N26 P26	P31 R31	T2 U2	U7 V7	V12 W12	W20 Y20	Y27 AA27	
F33 G33	H4 J4	J9 K9	K13 K14	L18 L19	M23 N23	N28 P28	P33 R33	T4 U4	U9 V9	V14 W14	W22 Y22	Y29 AA29	
F34 G34	H6 J6	J10 J11	K15 K16	L20 L21	M25 N25	N30 P30	P34 R34	T6 U6	U11 V11	V16 W16	W24 Y24	Y31 AA31	
G3 H3	H8 J8	J12 J13	K17 K18	L22 L23	M27 N27	N32 P32	R3 T3	T8 U8	U13 V13	V19 W19	W26 Y26	Y33 AA33	
G5 H5	H9 H10	J14 J15	K19 K20	L24 M24	M29 N29	P1 R1	R5 T5	T10 U10	U15 V15	V21 W21	W28 Y28	Y34 AA34	
G7 H7	H11 H12	J16 J17	K21 K22	L26 M26	M31 N31	P2 R2	R7 T7	T12 U12	U17 V17	V23 W23	W30 Y30		
G8 G9	H13 H14	J18 J19	K23 K24	L28 M28	M33 N33	P4 R4	R9 T9	T14 U14	U18 V18	V25 W25	W32 Y32	S/R	NC
G10 G11	H15 H16	J20 J21	K25 L25	L30 M30	M34 N34	P6 R6	R11 T11	T16 U16	U20 V20	V27 W27	Y1 AA1	D/A	NC
G12 G13	H17 H18	J22 J23	K27 L27	L32 M32	N3 P3	P8 R8	R13 T13	T17 T18	U22 V22	V29 W29	Y2 AA2		

NO CONNECTIONS:
A1, A4, A5, A10, A34, E1, F1, L1, M1, U1, V1,
AC1, AD1, AJ1, AK1, AP1, AP4, AP5, AP10, AP34.

TopLine[®]

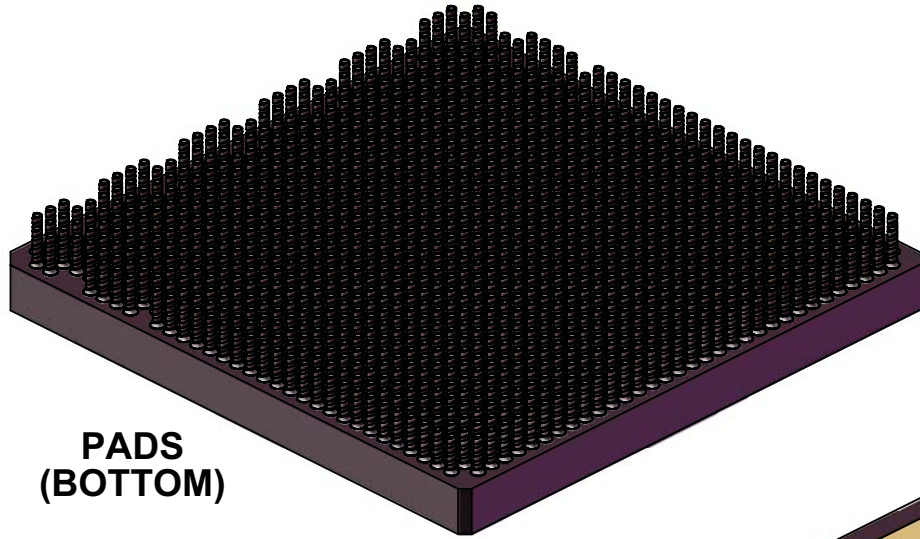
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COLUMN GRID ARRAY

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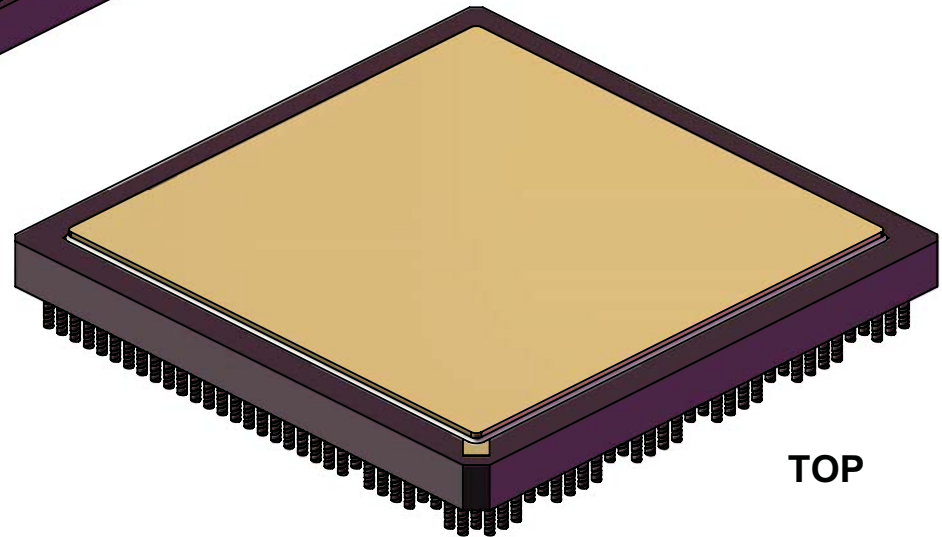
DO NOT SCALE DRAWING

SHEET 5 OF 6

MODEL
CCGA1136T1.0-DC347D
Pb80/Sn20 COPPER WRAPPED
COLUMNS



PADS
(BOTTOM)



TOP

TopLine[®]			
TITLE		CCGA1136T1.0-DC347D COLUMN GRID ARRAY	
SCALE	SIZE	DRAWING NO.	REV
NONE	A	160157	A
DO NOT SCALE DRAWING			SHEET 6 OF 6