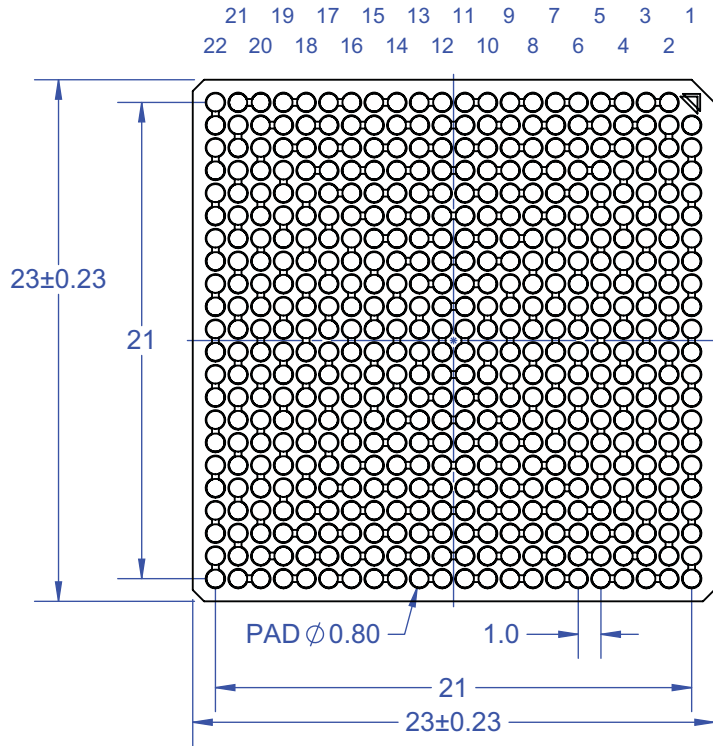
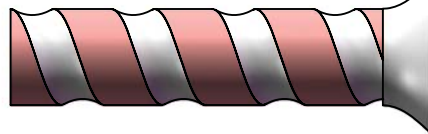


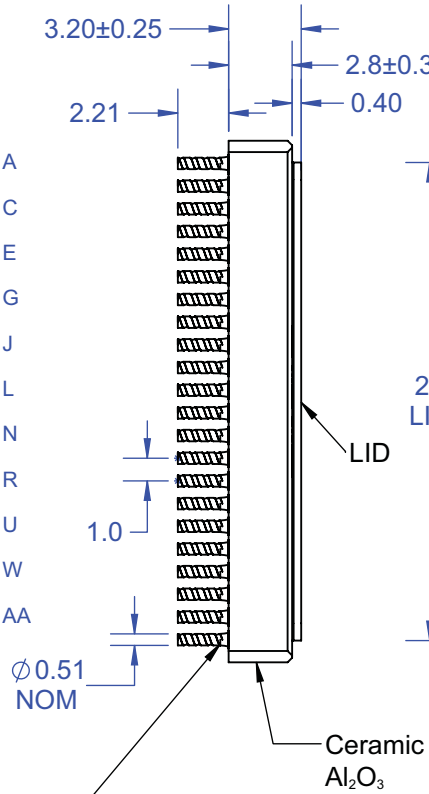
### BOTTOM VIEW



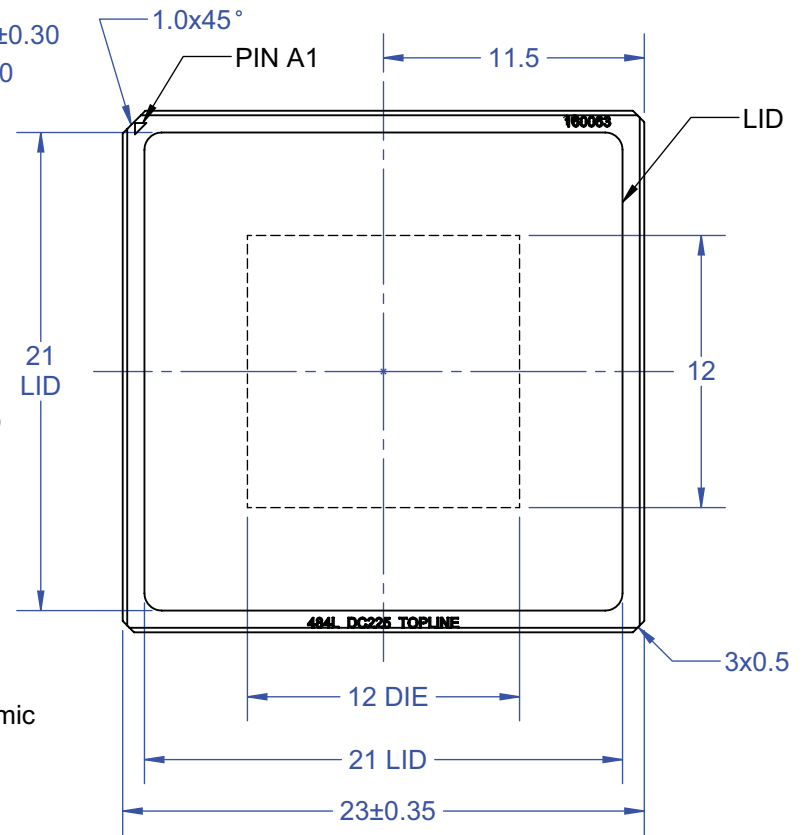
Pb80/Sn20  
Cu RIBBON  
COLUMNS



### SIDE VIEW



### TOP VIEW




Notes: (Unless Otherwise Specified).

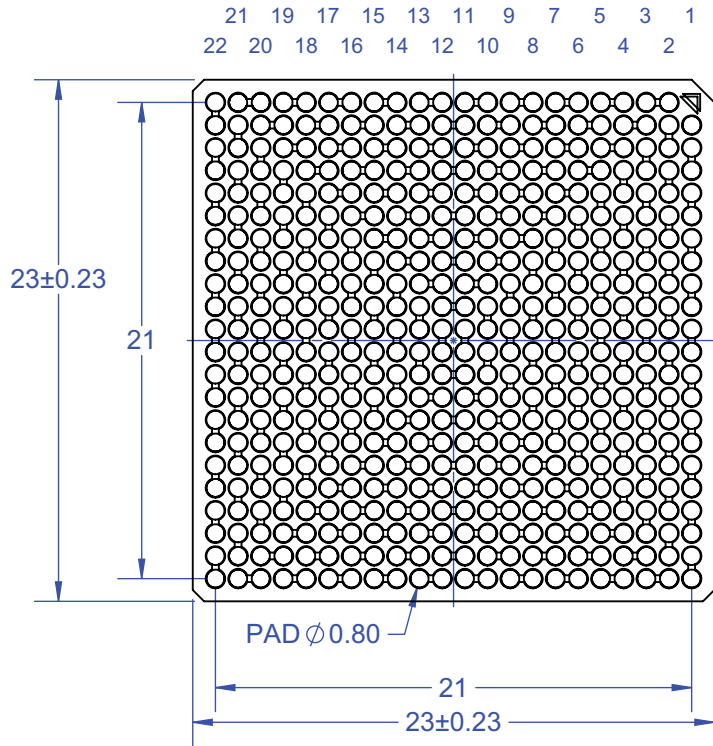
- 1) DIMENSIONS ARE IN mm.
- 2) SHOWN WITH Pb80/Sn20 RIBBON COLUMNS.
- 3) PART NUMBER CCGA483T1.0-DC225D.

#### PART NUMBER OPTIONS

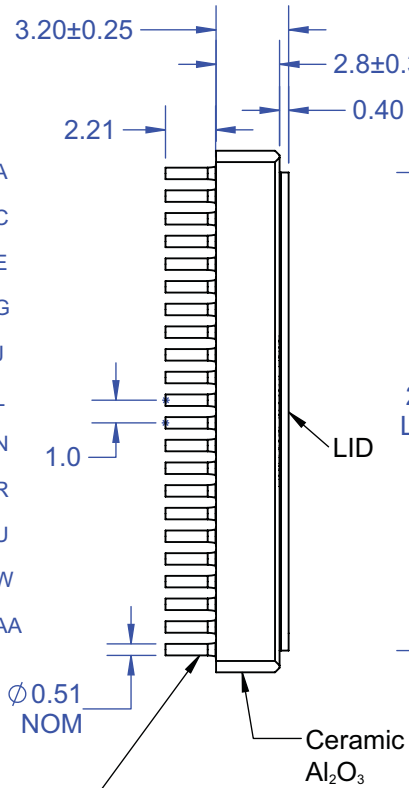
PART NUMBER	DUMMY DIE	SOLDER PIN
CCGA483T1.0-DC225D	YES	Pb80/Sn20 Cu RIBBON
CCGA483T1.0A-DC225D	YES	Pb90/Sn10
CCGA483T1.0M-DC225D	YES	Micro-Coil
CLGA483T1.0-DC225D	YES	NONE

APPROVALS	DATE				
DRAWN T. Au	11/24/15				
ENG M. Hart	11/24/15	TITLE CCGA483T1.0-DC225D DUMMY COLUMN GRID ARRAY			
MFG		SCALE 3:1	SIZE A	DRAWING NO. 160064	REV A
QA		DO NOT SCALE DRAWING			SHEET 1 OF 9
CUST					
REVISED					

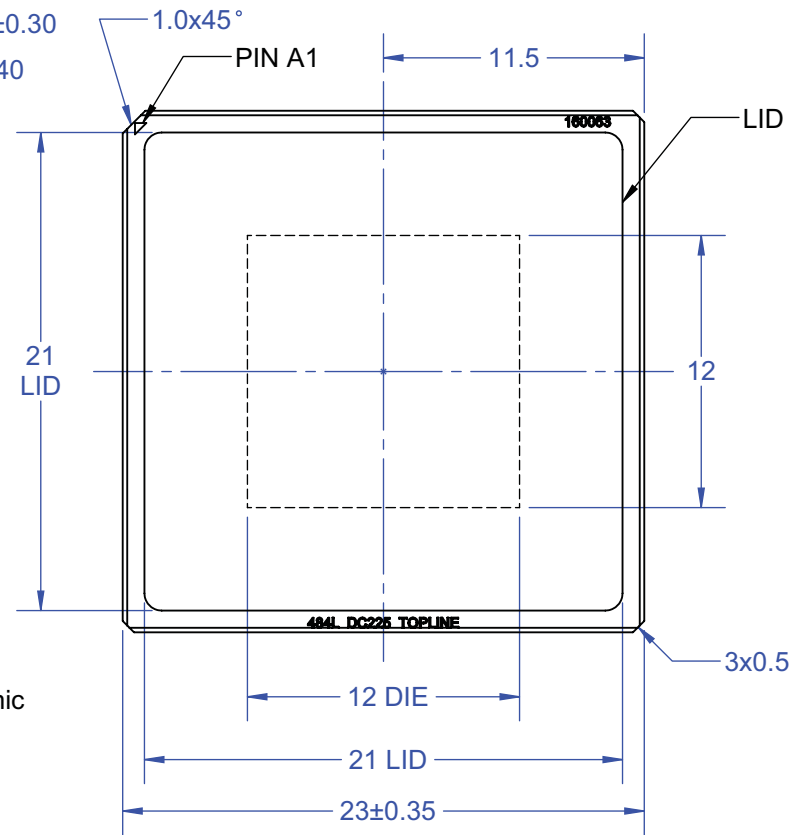
### BOTTOM VIEW



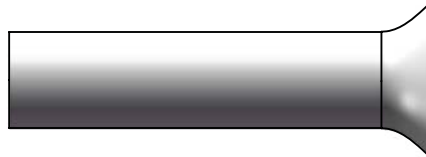
### SIDE VIEW



### TOP VIEW



Pb90/Sn10  
WIRE COLUMNS



Notes: (Unless Otherwise Specified).

- 1) DIMENSIONS ARE IN mm.
- 2) SHOWN WITH Pb90/Sn10 PLAIN COLUMNS.
- 3) PART NUMBER CCGA483T1.0A-DC225D.

#### PART NUMBER OPTIONS

PART NUMBER	DUMMY DIE	SOLDER PIN
CCGA483T1.0-DC225D	YES	Pb80/Sn20 Cu RIBBON
CCGA483T1.0A-DC225D	YES	Pb90/Sn10
CCGA483T1.0M-DC225D	YES	Micro-Coil
CLGA483T1.0-DC225D	YES	NONE

**TopLine®**

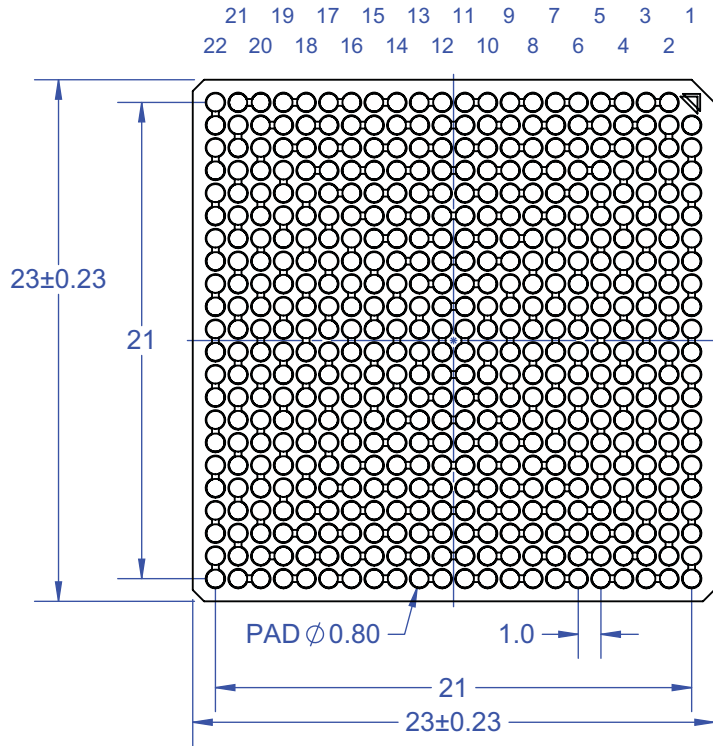
TITLE CCGA483T1.0-DC225D  
DUMMY COLUMN GRID ARRAY

SCALE 3:1	SIZE A	DRAWING NO. 160064	REV A
--------------	-----------	-----------------------	----------

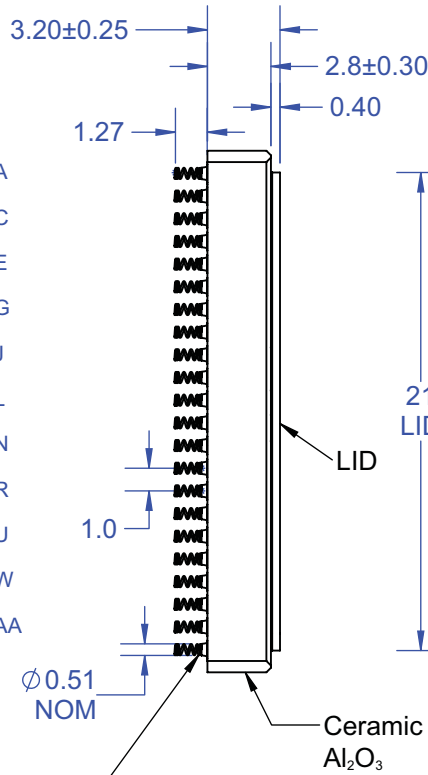
DO NOT SCALE DRAWING

SHEET 2 OF 9

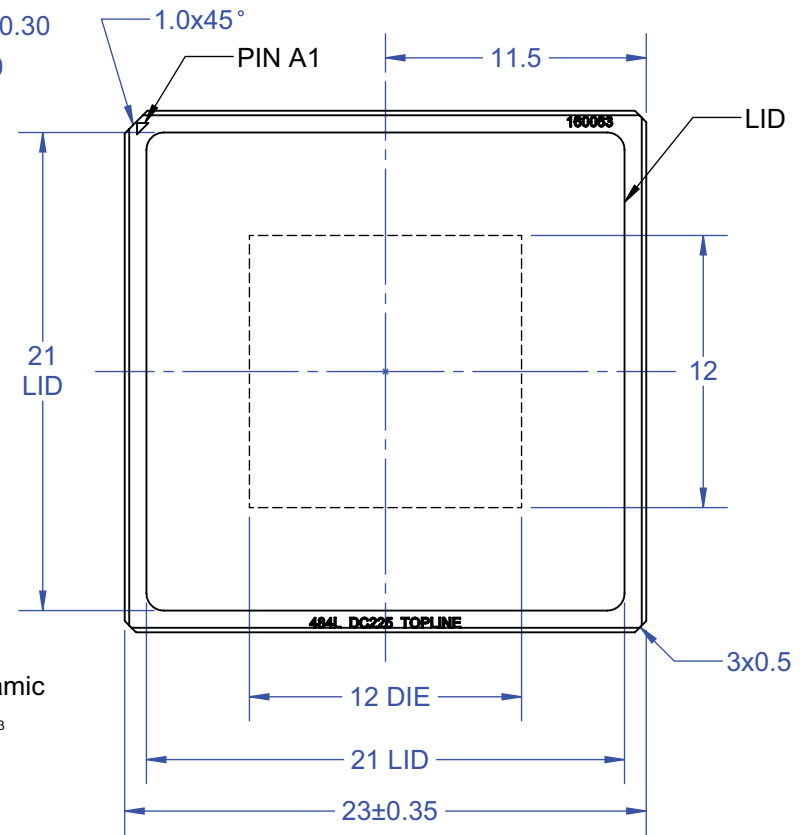
### BOTTOM VIEW



### SIDE VIEW



### TOP VIEW



MICRO-COIL SPRING



Notes: (Unless Otherwise Specified).

- 1) DIMENSIONS ARE IN mm.
- 2) SHOWN WITH Micro-Coil Springs.
- 3) PART NUMBER CCGA483T1.0M-DC225D.

#### PART NUMBER OPTIONS

PART NUMBER	DUMMY DIE	SOLDER PIN
CCGA483T1.0-DC225D	YES	Pb80/Sn20 Cu RIBBON
CCGA483T1.0A-DC225D	YES	Pb90/Sn10
CCGA483T1.0M-DC225D	YES	Micro-Coil
CLGA483T1.0-DC225D	YES	NONE

**TopLine®**

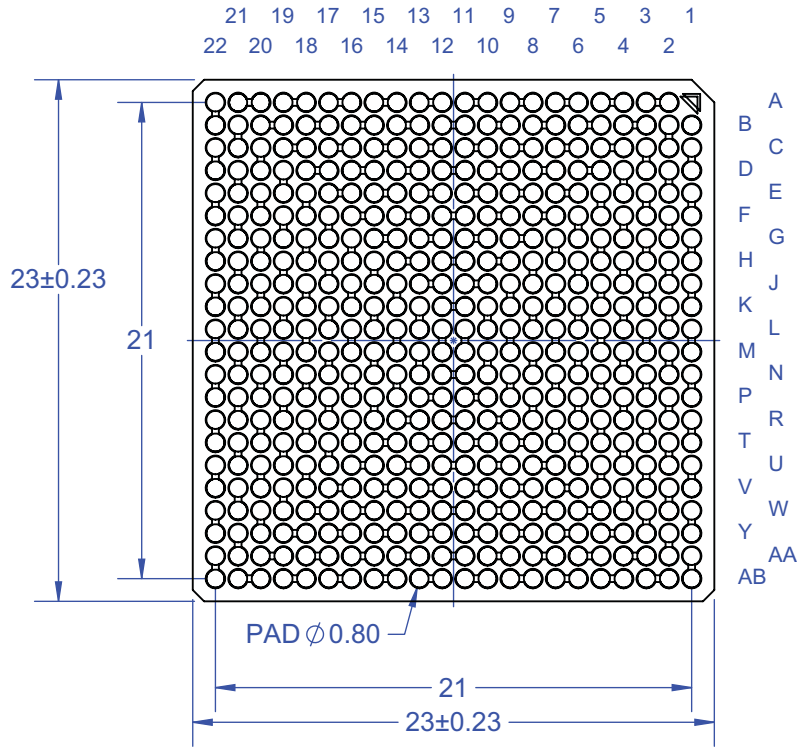
TITLE CCGA483T1.0-DC225D  
DUMMY COLUMN GRID ARRAY

SCALE 3:1	SIZE A	DRAWING NO. 160064	REV A
--------------	-----------	-----------------------	----------

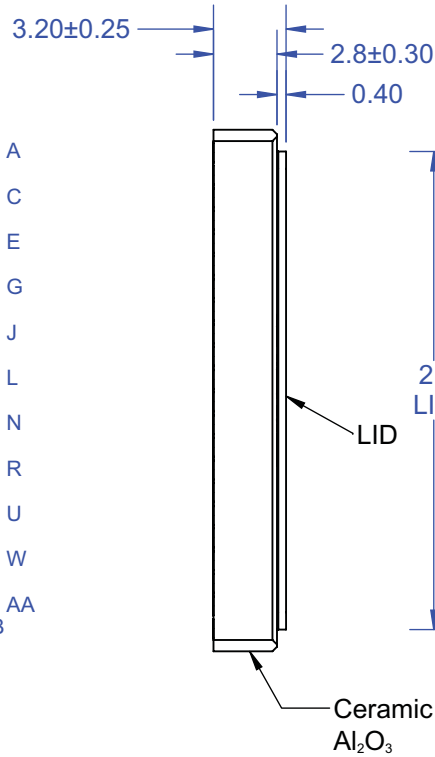
DO NOT SCALE DRAWING

SHEET 3 OF 9

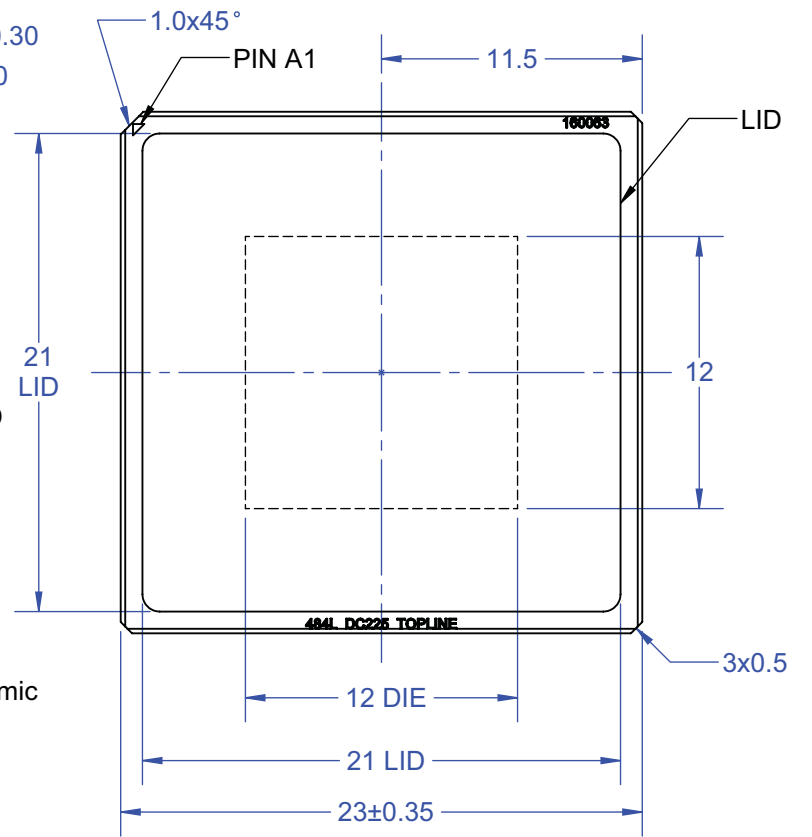
### BOTTOM VIEW



### SIDE VIEW



### TOP VIEW



#### NOTES:

1. PLATING TOP  
ELECTROLESS Ni 3.20~8.89  $\mu\text{m}$  (125~350 micro-inch).  
ELECTROLESS Au 1.5 $\mu\text{m}$  Min (60 micro-inch).
2. PLATING BOTTOM  
ELECTROLESS Ni 3.20~8.89  $\mu\text{m}$  (125~350 micro-inch).  
ELECTROLESS Au 0.25 $\mu\text{m}$  Max (10 micro-inch).

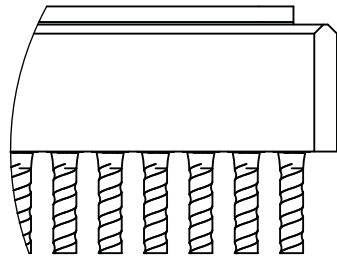
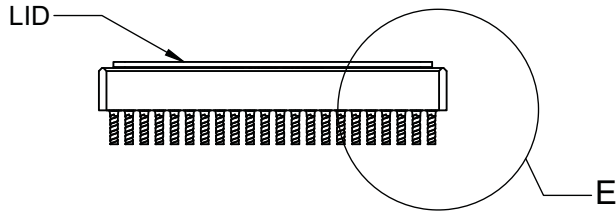
#### Notes: (Unless Otherwise Specified).

- 1) DIMENSIONS ARE IN mm.
- 2) SHOWN WITHOUT COLUMNS.
- 3) SHOWN WITH LID COVER ATTACHED.
- 4) PART NUMBER CLGA483T1.0-DC225D.

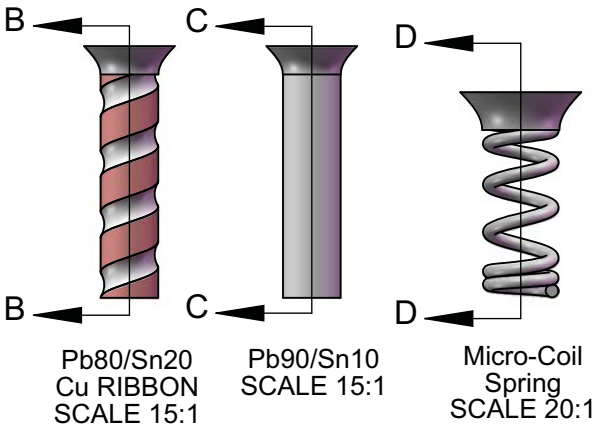
PART NUMBER OPTIONS			
PART NUMBER	DUMMY DIE	SOLDER PIN	LID
CLGA483T1.0-DC225D	YES	NONE	YES

<b>TopLine®</b>			
TITLE CCGA483T1.0-DC225D DUMMY COLMN GRID ARRAY			
SCALE 3:1	SIZE A	DRAWING NO. 160064	REV A
DO NOT SCALE DRAWING			SHEET 4 OF 9

# SOLDER PIN OPTIONS



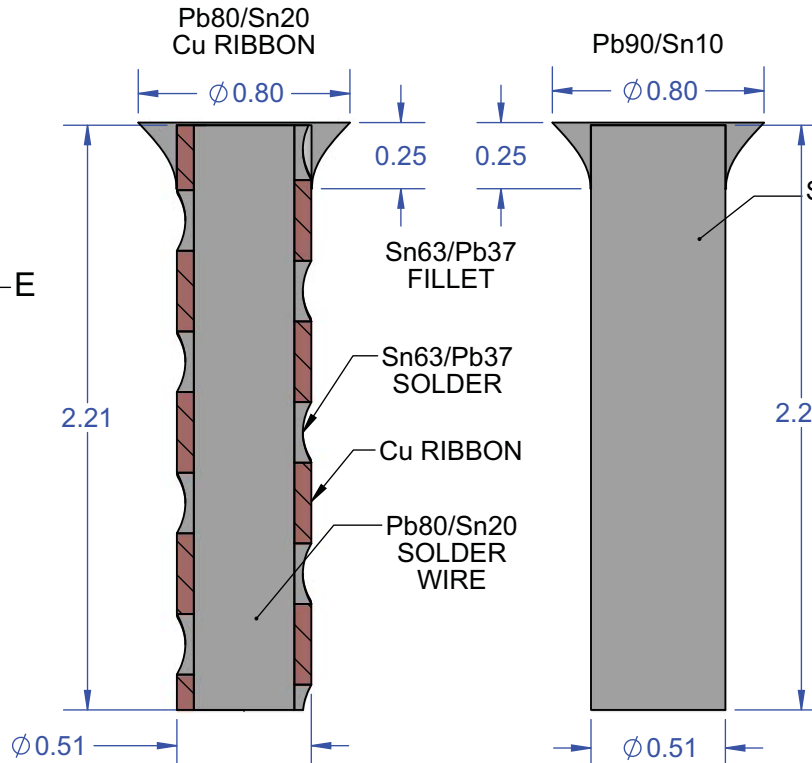
DETAIL E  
SCALE 6 : 1



Pb80/Sn20  
Cu RIBBON  
SCALE 15:1

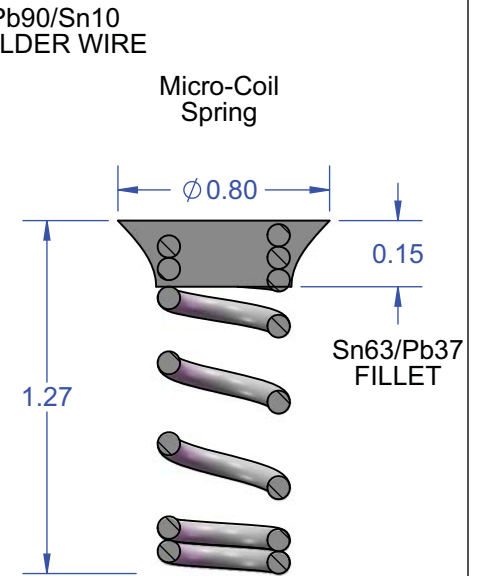
Pb90/Sn10  
SCALE 15:1

Micro-Coil  
Spring  
SCALE 20:1

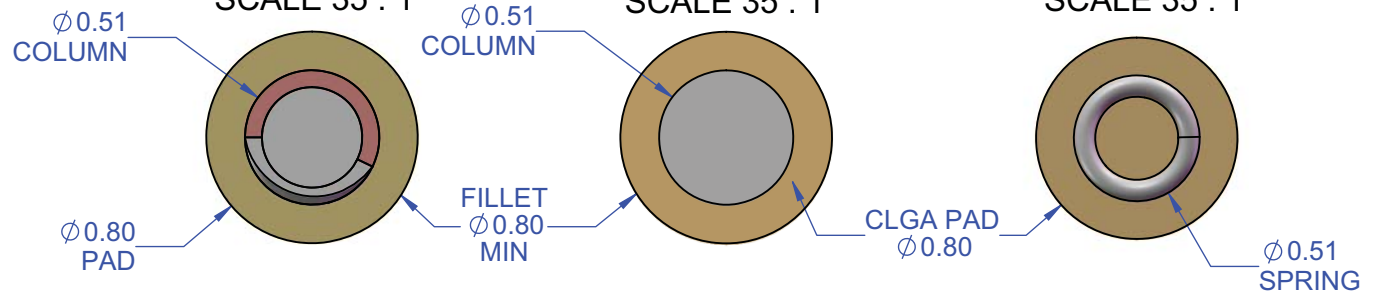


SECTION B-B  
SCALE 35 : 1

SECTION C-C  
SCALE 35 : 1



SECTION D-D  
SCALE 35 : 1

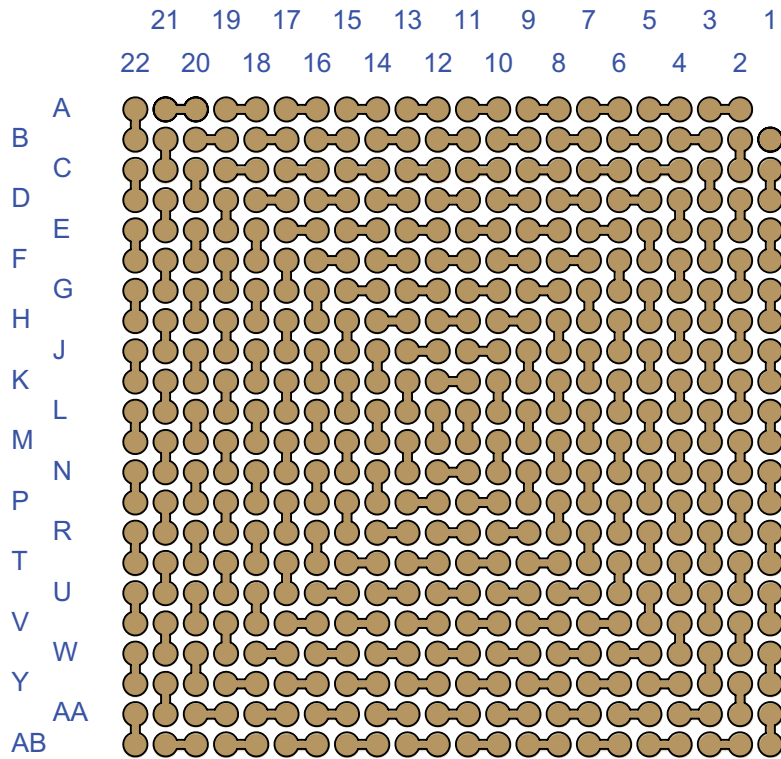


PART NUMBER OPTIONS		
PART NUMBER	DUMMY DIE	SOLDER PIN
CCGA483T1.0-DC225D	YES	Pb80/Sn20 Cu RIBBON
CCGA483T1.0A-DC225D	YES	Pb90/Sn10
CCGA483T1.0M-DC225D	YES	Micro-Coil
CLGA483T1.0-DC225D	YES	NONE

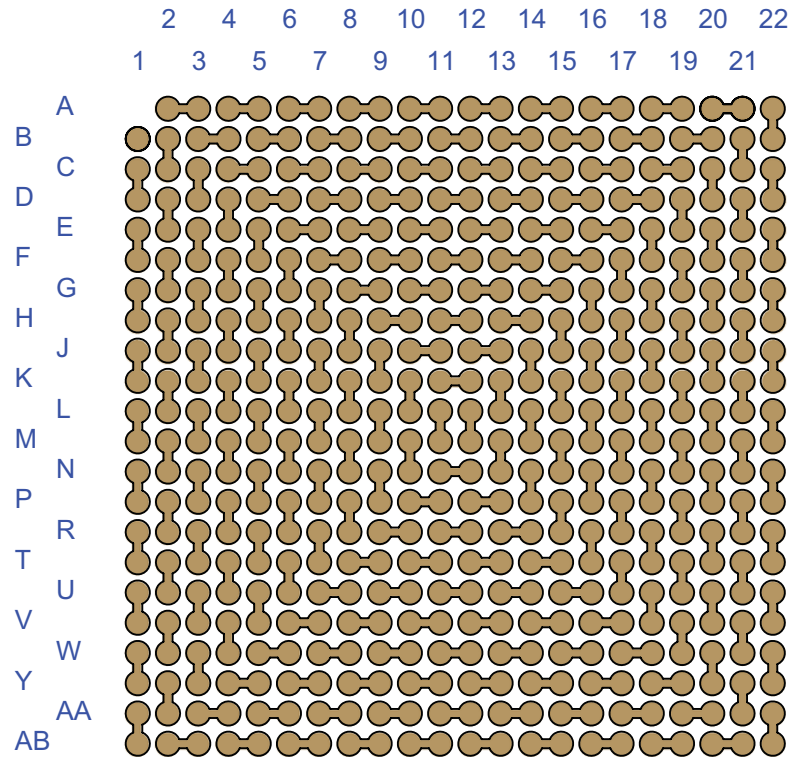
TITLE CCGA483T1.0-DC225D DUMMY COLUMN GRID ARRAY			
SCALE 2:1	SIZE A	DRAWING NO. 160064	REV A
DO NOT SCALE DRAWING			SHEET 5 OF 9

# DAISY CHAIN PATTERN

## COLUMN (PAD) VIEW



## BOTTOM X-RAY VIEWED FROM TOP



**TopLine®**

TITLE CCGA483T1.0-DC225D  
DUMMY COLUMN GRID ARRAY

SCALE 2.5:1	SIZE A	DRAWING NO. 160064	REV A
----------------	-----------	-----------------------	----------

DO NOT SCALE DRAWING

SHEET 6 OF 9

## NET LIST DAISY CHAIN CONNECTION TABLE

DC PAIR	
A2	A3
A4	A5
A6	A7
A8	A9
A10	A11
A12	A13
A14	A15
A16	A17
A18	A19
A20	A21
A22	B22
AA1	AB1
AA3	AA4
AA5	AA6
AA7	AA8
AA9	AA10
AA11	AA12
AA13	AA14
AA15	AA16
AA17	AA18
AA19	AA20
AA22	AB22
AB2	AB3
AB4	AB5
AB6	AB7
AB8	AB9
AB10	AB11
AB12	AB13
AB14	AB15
AB16	AB17
AB18	AB19
AB20	AB21
B2	C2
B3	B4
B5	B6
B7	B8
B9	B10
B11	B12

DC PAIR	
B13	B14
B15	B16
B17	B18
B19	B20
B21	C21
C1	D1
C3	D3
C4	C5
C6	C7
C8	C9
C10	C11
C12	C13
C14	C15
C16	C17
C18	C19
C20	D20
C22	D22
D2	E2
D4	E4
D5	D6
D7	D8
D9	D10
D11	D12
D13	D14
D15	D16
D17	D18
D19	E19
D21	E21
E1	F1
E3	F3
E5	F5
E6	E7
E8	E9
E10	E11
E12	E13
E14	E15
E16	E17
E18	F18

DC PAIR	
E20	F20
E22	F22
F2	G2
F4	G4
F6	G6
F7	F8
F9	F10
F11	F12
F13	F14
F15	F16
F17	G17
F19	G19
F21	G21
G1	H1
G3	H3
G5	H5
G7	H7
G8	G9
G10	G11
G12	G13
G14	G15
G16	H16
G18	H18
G20	H20
G22	H22
H2	J2
H4	J4
H6	J6
H8	J8
H9	H10
H11	H12
H13	H14
H15	J15
H17	J17
H19	J19
H21	J21
J1	K1
J3	K3

DC PAIR	
J5	K5
J7	K7
J9	K9
J10	J11
J12	J13
J14	K14
J16	K16
J18	K18
J20	K20
J22	K22
K2	L2
K4	L4
K6	L6
K8	L8
K10	L10
K11	K12
K13	L13
K15	L15
K17	L17
K19	L19
K21	L21
L1	M1
L3	M3
L5	M5
L7	M7
L9	M9
L11	M11
L12	M12
L14	M14
L16	M16
L18	M18
L20	M20
L22	M22
M2	N2
M4	N4
M6	N6
M8	N8
M10	N10

DC PAIR	
M13	N13
M15	N15
M17	N17
M19	N19
M21	N21
N1	P1
N3	P3
N5	P5
N7	P7
N9	P9
N11	N12
N14	P14
N16	P16
N18	P18
N20	P20
N22	P22
P2	R2
P4	R4
P6	R6
P8	R8
P10	P11
P12	P13
P15	R15
P17	R17
P19	R19
P21	R21
R1	T1
R3	T3
R5	T5
R7	T7
R9	R10
R11	R12
R13	R14
R16	T16
R18	T18
R20	T20
R22	T22
T2	U2

DC PAIR	
T4	U4
T6	U6
T8	T9
T10	T11
T12	T13
T14	T15
T17	U17
T19	U19
T21	U21
U1	V1
U3	V3
U5	V5
U7	U8
U9	U10
U11	U12
U13	U14
U15	U16
U18	V18
U20	V20
U22	V22
V2	W2
V4	W4
V6	V7
V8	V9
V10	V11
V12	V13
V14	V15
V16	V17
V19	W19
V21	W21
W1	Y1
W3	Y3
W5	W6
W7	W8
W9	W10
W11	W12
W13	W14
W15	W16

DC PAIR	
W17	W18
W20	Y20
W22	Y22
Y2	AA2
Y4	Y5
Y6	Y7
Y8	Y9
Y10	Y11
Y12	Y13
Y14	Y15
Y16	Y17
Y18	Y19
Y21	AA21

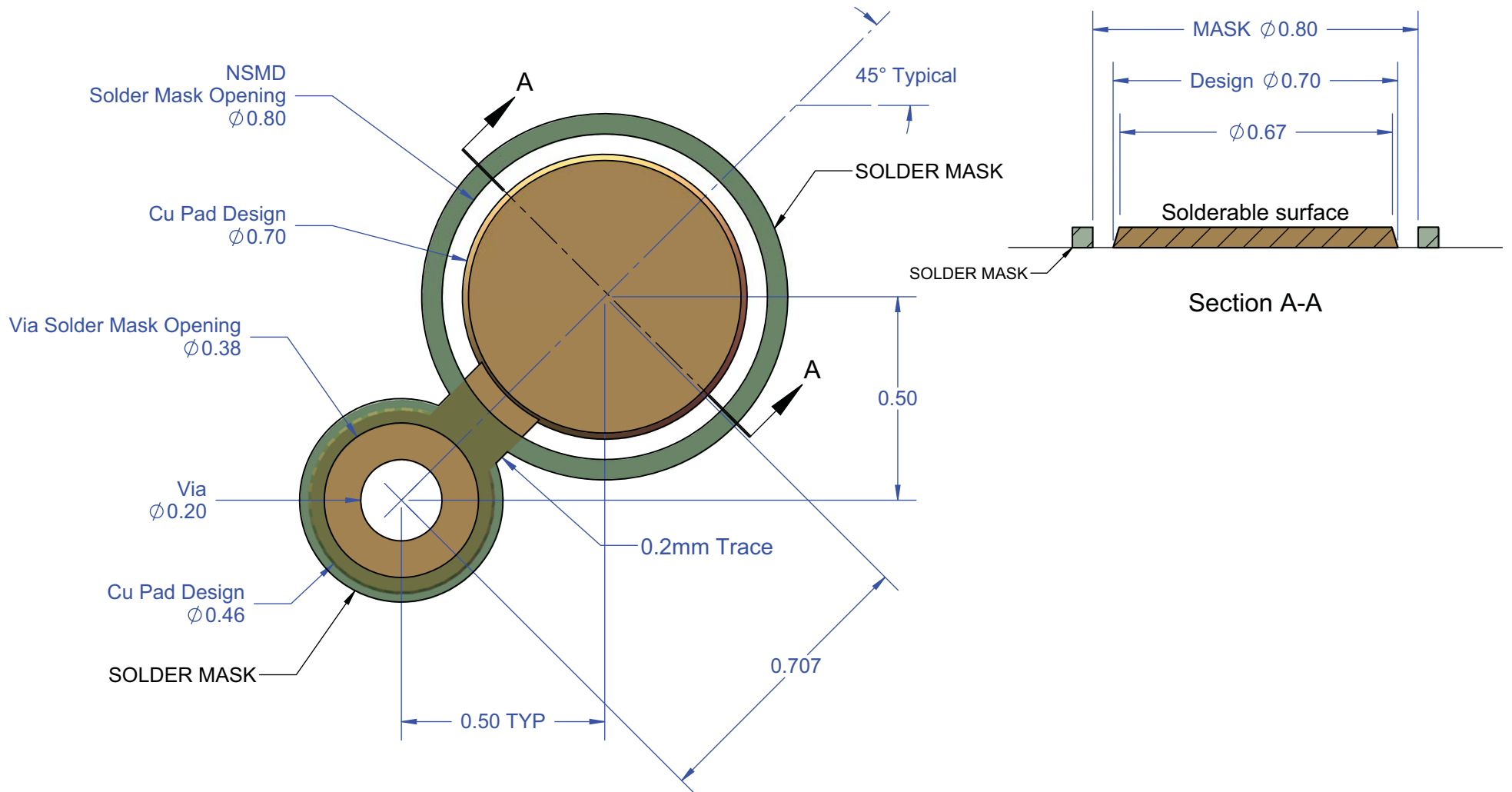
<b>NC</b>
B1

<b>NC</b>
D/A
S/R

<b>TopLine</b> <sup>®</sup>			
TITLE CCGA483T1.0-DC225D DUMMY COLUMN GRID ARRAY			
SCALE NONE	SIZE A	DRAWING NO. 160064	REV A
DO NOT SCALE DRAWING			SHEET 7 OF 9

# PCB PAD DESIGN RULES CCGA PITCH 1.0MM

## Cu PAD SIDE VIEW



### NOTES:

1. DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED.
2. SOLDERABLE SURFACE  $\phi 0.67$  IS THE FUNCTIONAL SURFACE OF Cu PAD.
3.  $\phi 0.70$  IS THE DESIGN DIMENSION OF Cu PAD.
4. PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE.  
DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.

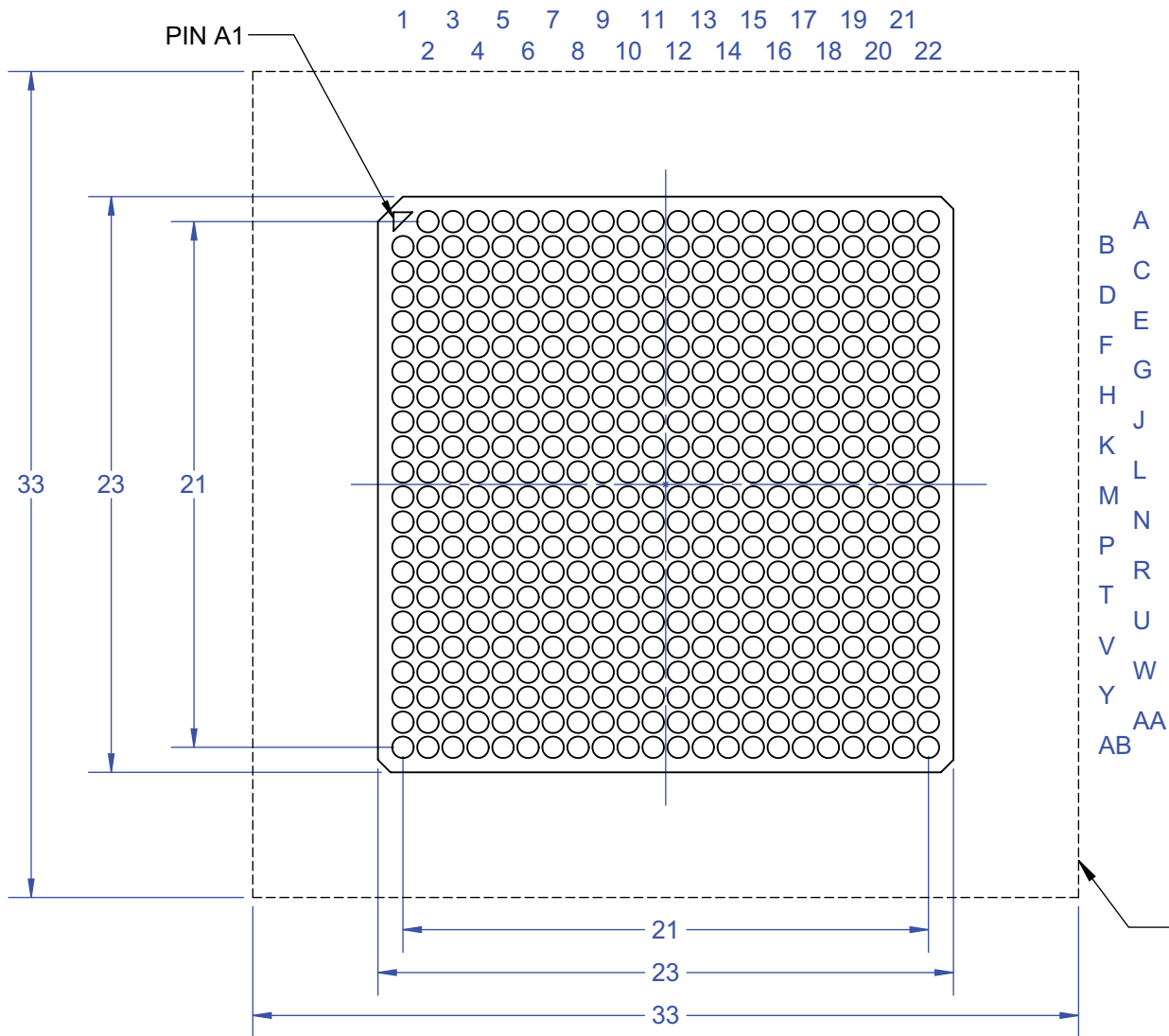
**TopLine**<sup>®</sup>

TITLE CCGA483T1.0-DC225D PITCH 1.0mm			
SCALE 70:1	SIZE A	DRAWING NO. 160064	REV A
DO NOT SCALE DRAWING		SHEET 8 OF 9	



# PCB LAND ARRAY

SHOWN WITHOUT DAISY CHAIN



SOLDER PASTE STENCIL	
Thickness	190~203µm 7.5~8.0 mil
Aperture	1:1

SOLDER PASTE VOLUME	
Nominal	0.06mm <sup>3</sup> 4000 mils <sup>3</sup>
Maximum	0.078mm <sup>3</sup> 5000 mils <sup>3</sup>
Minimum	0.031mm <sup>3</sup> 2000 mils <sup>3</sup>

SOLDER PASTE	
Sn63/Pb37 90% solder by weight 50% solids by volume Type T3 Particle Size Flux ROL0 No Clean Paste (optional)	

CLEARANCE 5.0 MIN  
ADJACENT COMPONENTS

**NOTES:**

1. DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED.
2. SOLDERABLE SURFACE  $\phi 0.67$  IS THE FUNCTIONAL SURFACE OF Cu PAD.
3.  $\phi 0.70$  IS THE DESIGN DIMENSION OF Cu PAD.
4. PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.

<b>TopLine</b> <sup>®</sup>			
TITLE CCGA483T1.0-DC225D DUMMY COLUMN GRID ARRAY			
SCALE	SIZE	DRAWING NO.	REV
3.5:1	A	160064	A
DO NOT SCALE DRAWING			SHEET 9 OF 9