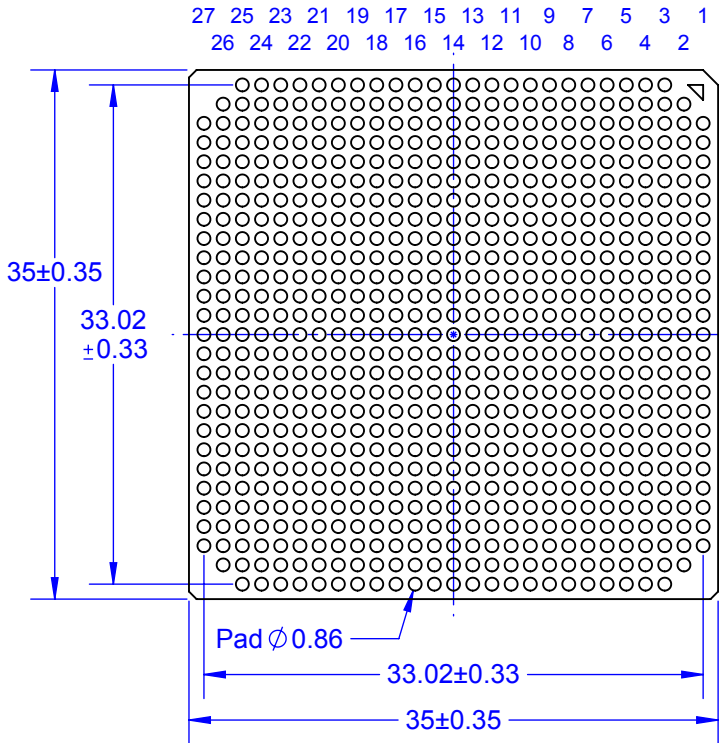
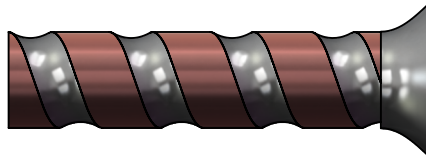


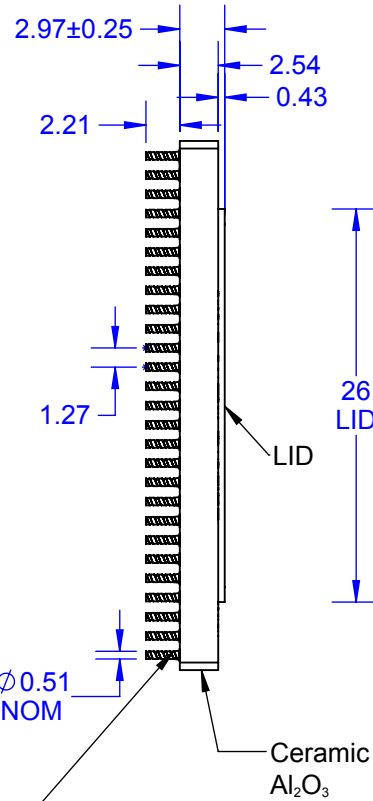
### BOTTOM VIEW



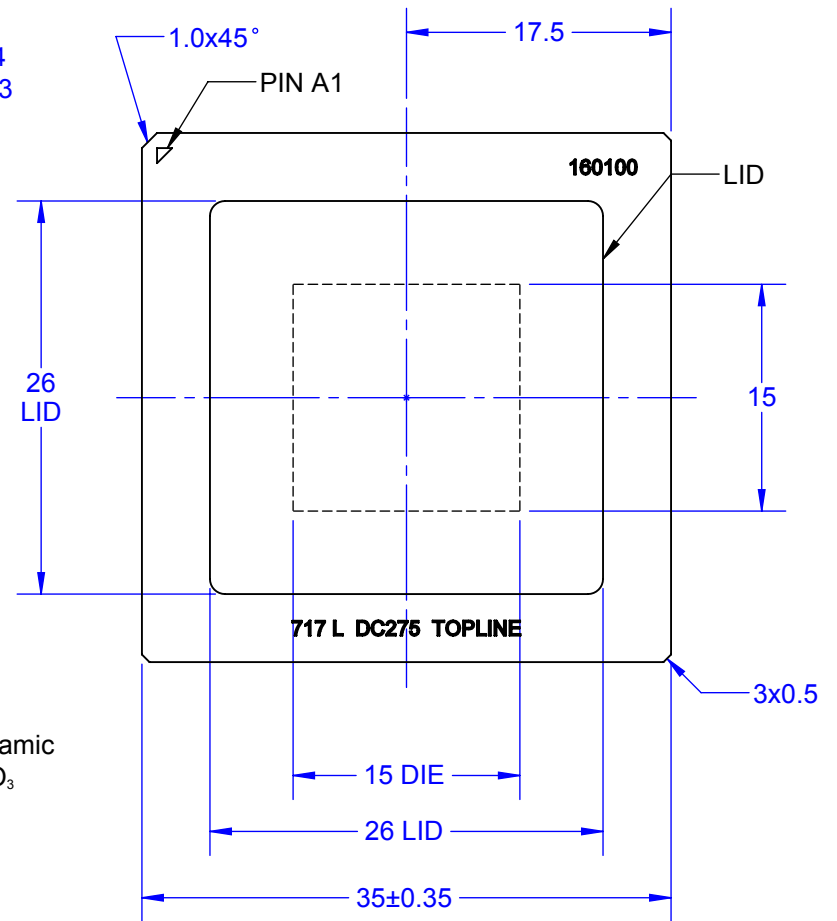
Pb80/Sn20  
Cu RIBBON  
COLUMNS



### SIDE VIEW



### TOP VIEW



Notes: (Unless Otherwise Specified).

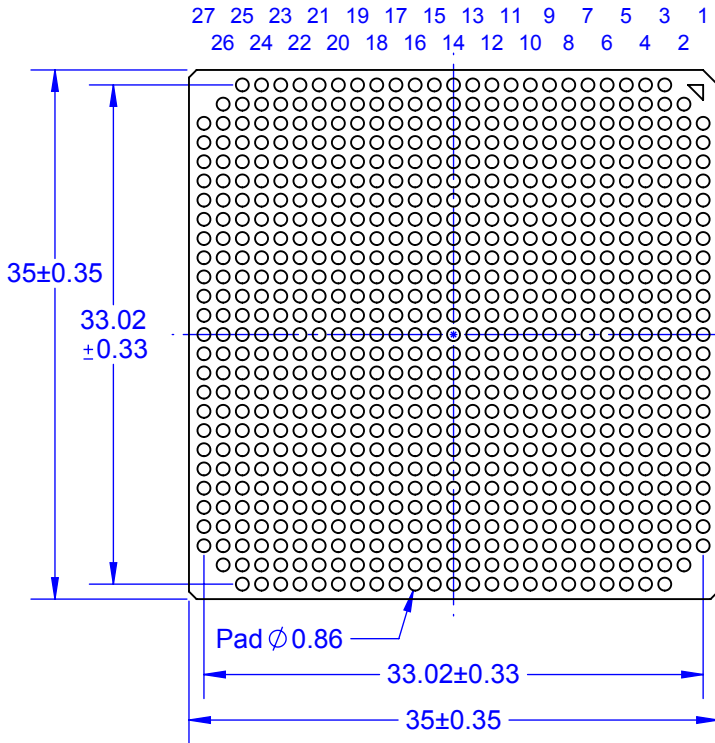
- 1) DIMENSIONS ARE IN mm.
- 2) SHOWN WITH Pb80/Sn20 RIBBON COLUMNS.
- 3) PART NUMBER CCGA717T1.27-DC275D.

#### PART NUMBER OPTIONS

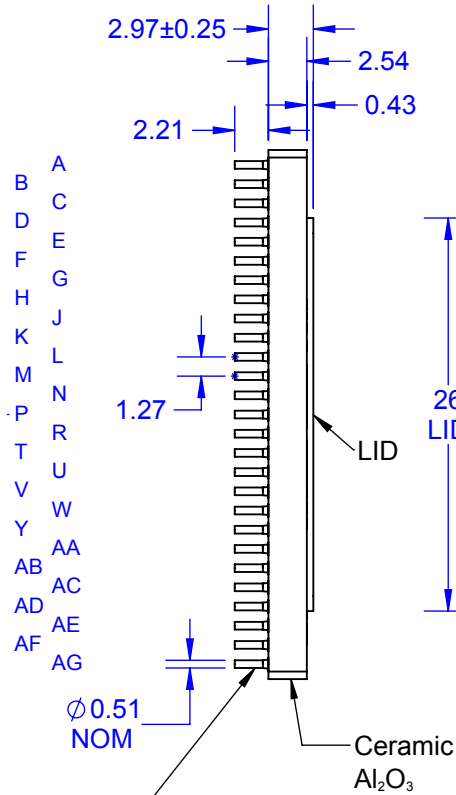
PART NUMBER	DUMMY DIE	SOLDER PIN
CCGA717T1.27-DC275D	YES	Pb80/Sn20 Cu RIBBON
CCGA717T1.27A-DC275D	YES	Pb90/Sn10
CCGA717T1.27M-DC275D	YES	Micro-Coil
CLGA717T1.27-DC275D	YES	NONE

APPROVALS	DATE	<b>TopLine</b> <sup>®</sup>			
DRAWN T. Au	07/08/15				
ENG M. Hart	07/08/15	TITLE CCGA717T1.27-DC275D DUMMY COLUMN GRID ARRAY			
MFG		SCALE	SIZE	DRAWING NO.	REV
QA		2:1	A	160100	A
CUST		DO NOT SCALE DRAWING			SHEET 1 OF 10
REVISED					

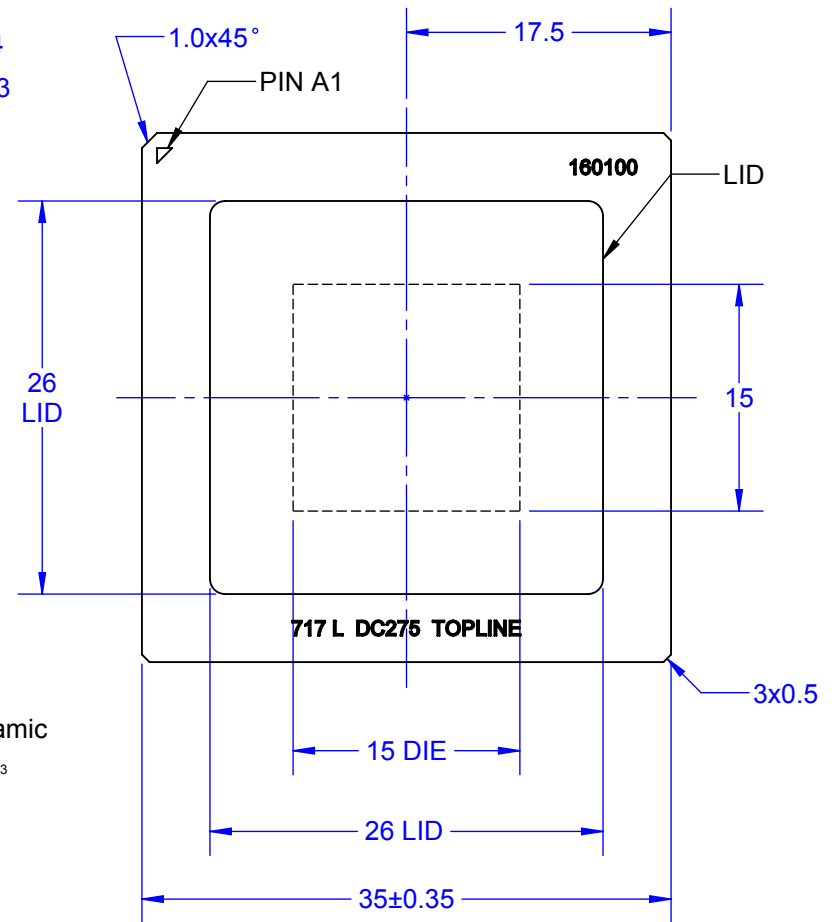
### BOTTOM VIEW



### 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 CCGA717T1.27A-DC275D.

#### PART NUMBER OPTIONS

PART NUMBER	DUMMY DIE	SOLDER PIN
CCGA717T1.27-DC275D	YES	Pb80/Sn20 Cu RIBBON
CCGA717T1.27A-DC275D	YES	Pb90/Sn10
CCGA717T1.27M-DC275D	YES	Micro-Coil
CLGA717T1.27-DC275D	YES	NONE

**TopLine**<sup>®</sup>

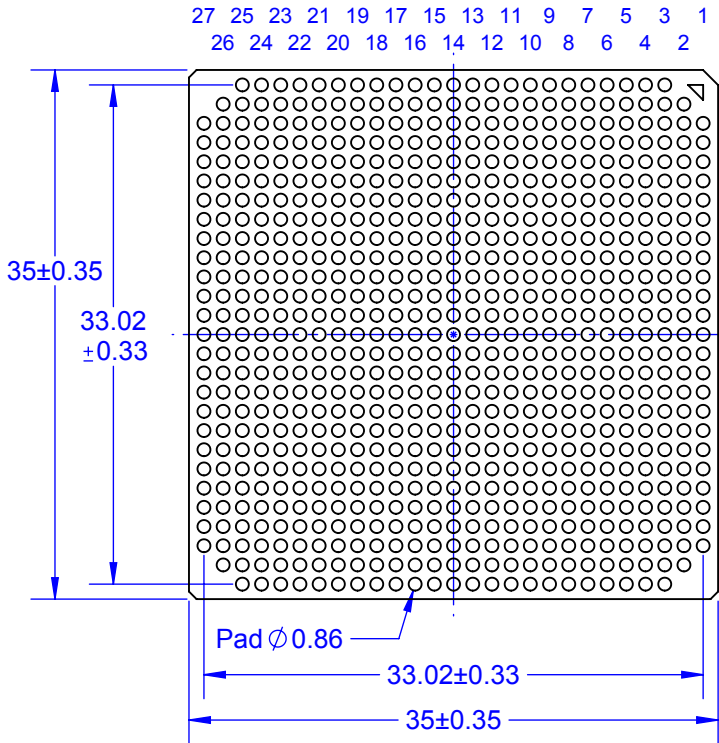
TITLE CCGA717T1.27-DC275D  
DUMMY COLUMN GRID ARRAY

SCALE 2:1	SIZE A	DRAWING NO. 160100	REV A
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DO NOT SCALE DRAWING

SHEET 2 OF 10

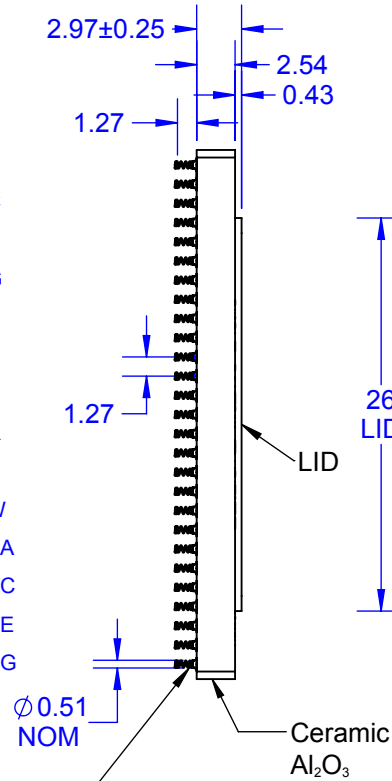
### BOTTOM VIEW



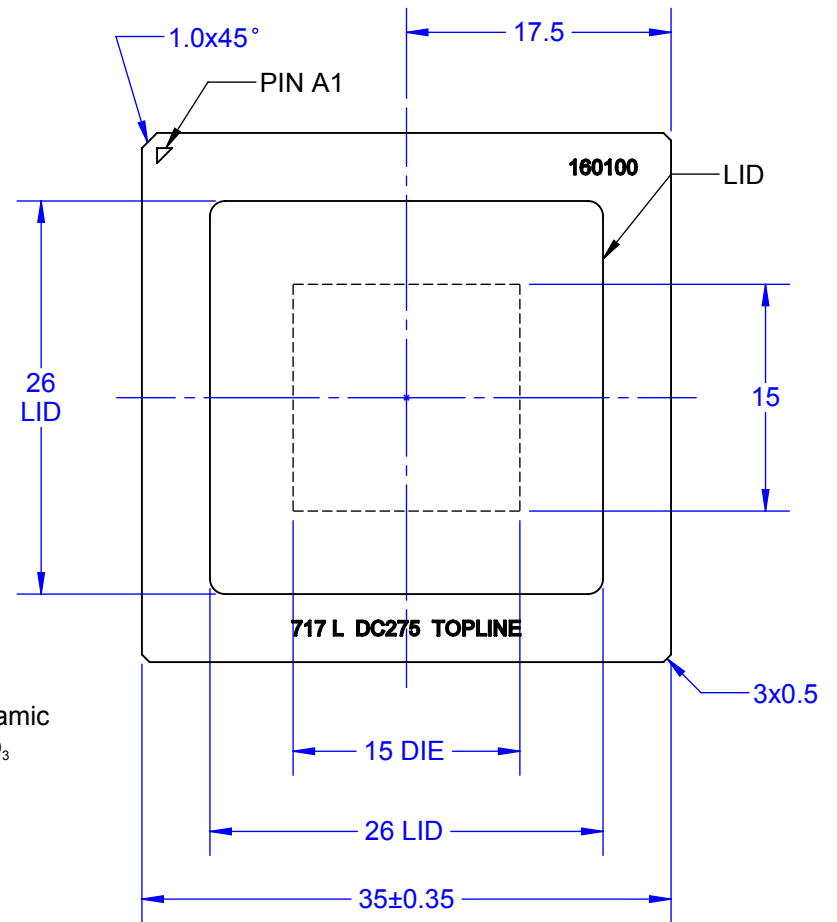
MICRO-COIL SPRING



### SIDE VIEW



### TOP VIEW



Notes: (Unless Otherwise Specified).

- 1) DIMENSIONS ARE IN mm.
- 2) SHOWN WITH Micro-Coil Springs.
- 3) PART NUMBER CCGA717T1.27M-DC275D.

#### PART NUMBER OPTIONS

PART NUMBER	DUMMY DIE	SOLDER PIN
CCGA717T1.27-DC275D	YES	Pb80/Sn20 Cu RIBBON
CCGA717T1.27A-DC275D	YES	Pb90/Sn10
CCGA717T1.27M-DC275D	YES	Micro-Coil
CLGA717T1.27-DC275D	YES	NONE

**TopLine**<sup>®</sup>

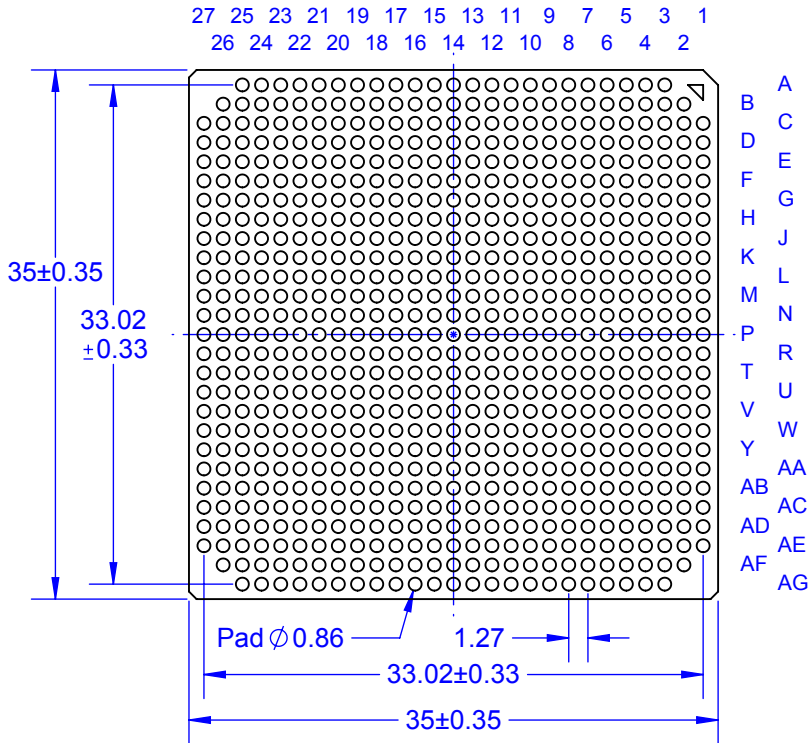
TITLE CCGA717T1.27-DC275D  
DUMMY COLUMN GRID ARRAY

SCALE 2:1	SIZE A	DRAWING NO. 160100	REV A
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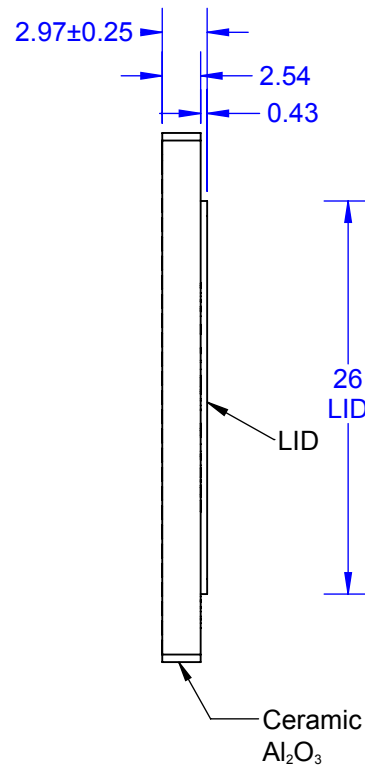
DO NOT SCALE DRAWING

SHEET 3 OF 10

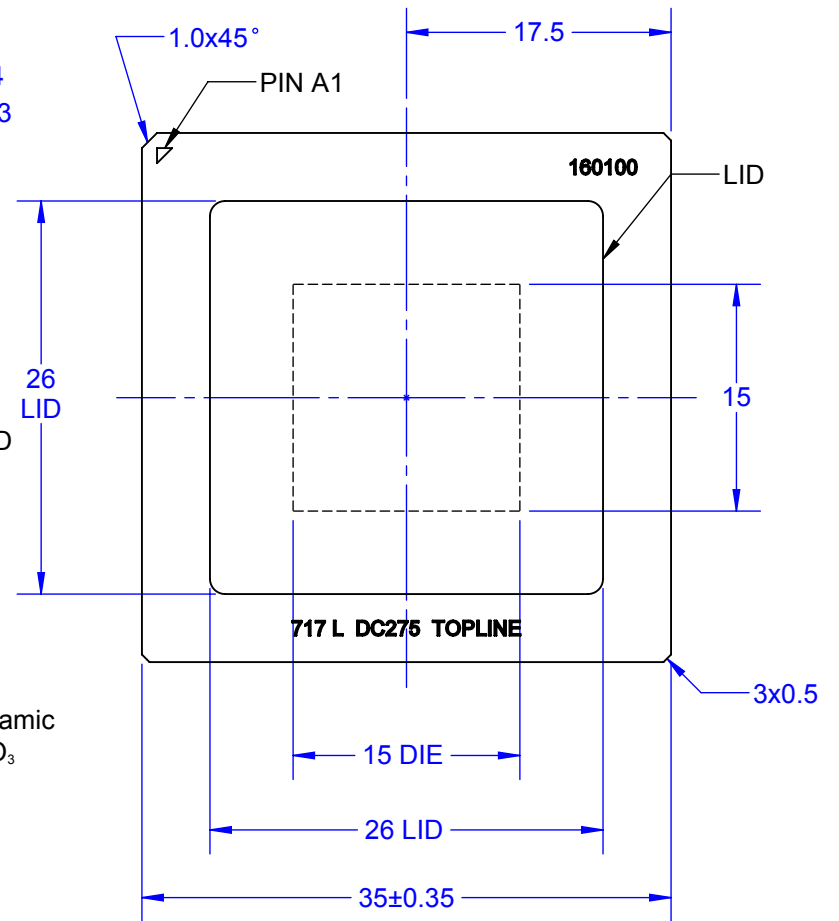
### BOTTOM VIEW



### SIDE VIEW



### TOP VIEW



#### NOTES:

1. PLATING TOP  
ELECTROLESS Ni 3.20~8.89  $\mu$ m (125~350 micro-inch).  
ELECTROLESS Au 2.50  $\mu$ m Min (100 micro-inch).
2. PLATING BOTTOM  
ELECTROLESS Ni 3.20~8.89  $\mu$ m (125~350 micro-inch).  
ELECTROLESS Au 0.25 $\mu$ m Max (10 micro-inch).

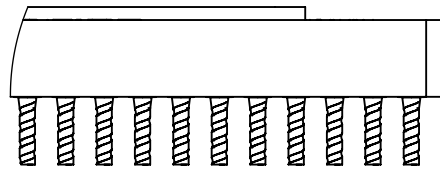
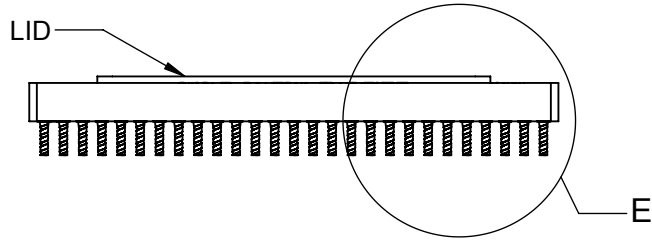
#### Notes: (Unless Otherwise Specified).

- 1) DIMENSIONS ARE IN mm.
- 2) SHOWN WITHOUT COLUMNS.
- 3) SHOWN WITH LID COVER ATTACHED.
- 4) PART NUMBER CLGA717T1.27-DC275D.

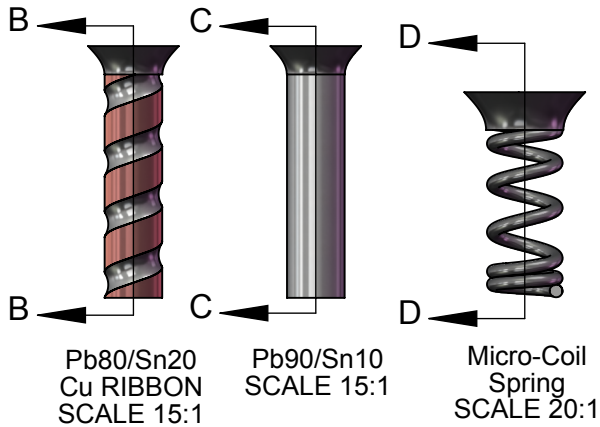
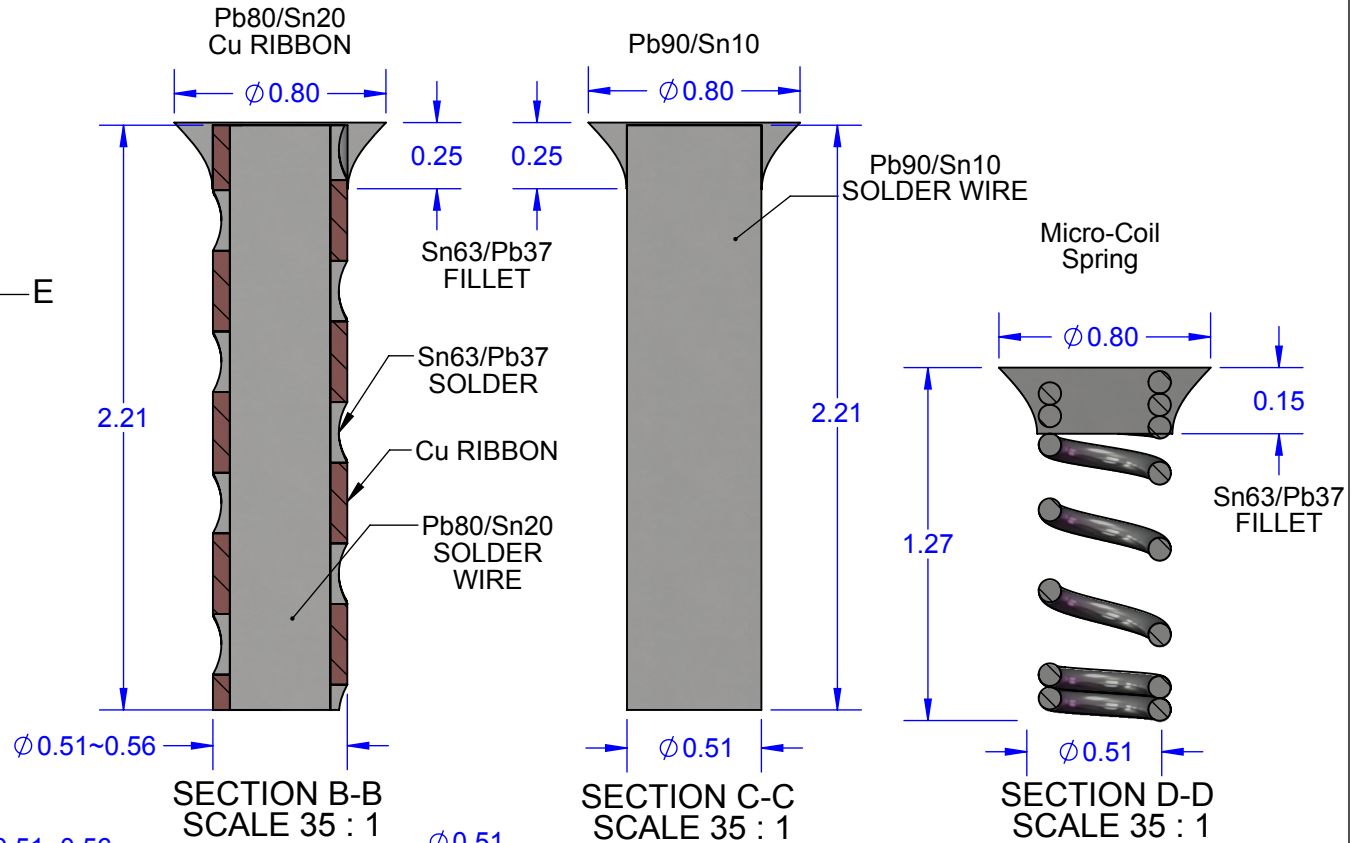
PART NUMBER OPTIONS			
PART NUMBER	DUMMY DIE	SOLDER PIN	LID
CLGA717T1.27-DC275D	YES	NONE	YES

<b>TopLine®</b>			
TITLE CCGA717T1.27-DC275D DUMMY COLUMN GRID ARRAY			
SCALE 2:1	SIZE A	DRAWING NO. 160100	REV A
DO NOT SCALE DRAWING		SHEET 4 OF 10	

# SOLDER PIN OPTIONS



DETAIL E  
SCALE 4 : 1

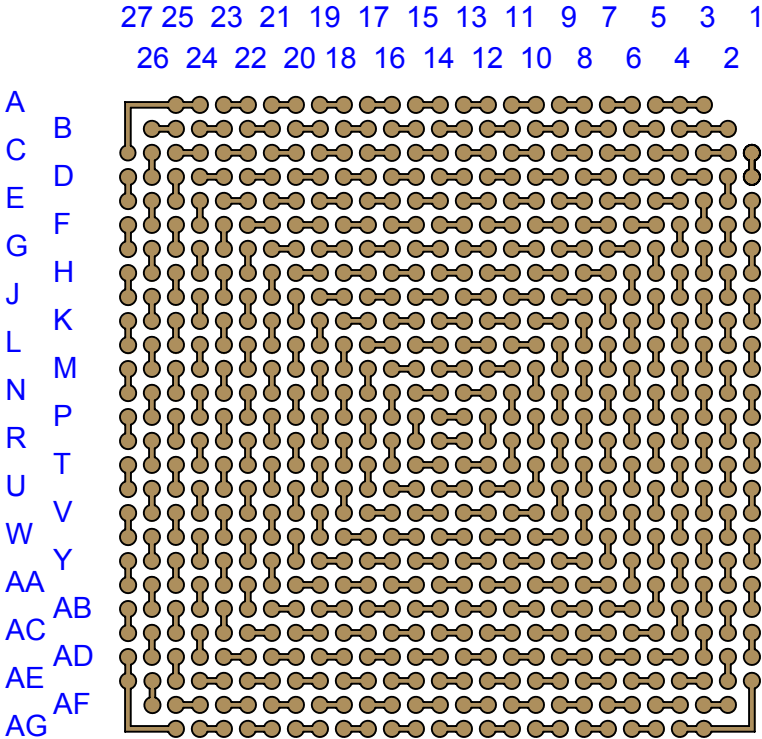


PART NUMBER OPTIONS		
PART NUMBER	DUMMY DIE	SOLDER PIN
CCGA717T1.27-DC275D	YES	Pb80/Sn20 Cu RIBBON
CCGA717T1.27A-DC275D	YES	Pb90/Sn10
CCGA717T1.27M-DC275D	YES	Micro-Coil
CLGA717T1.27-DC275D	YES	NONE

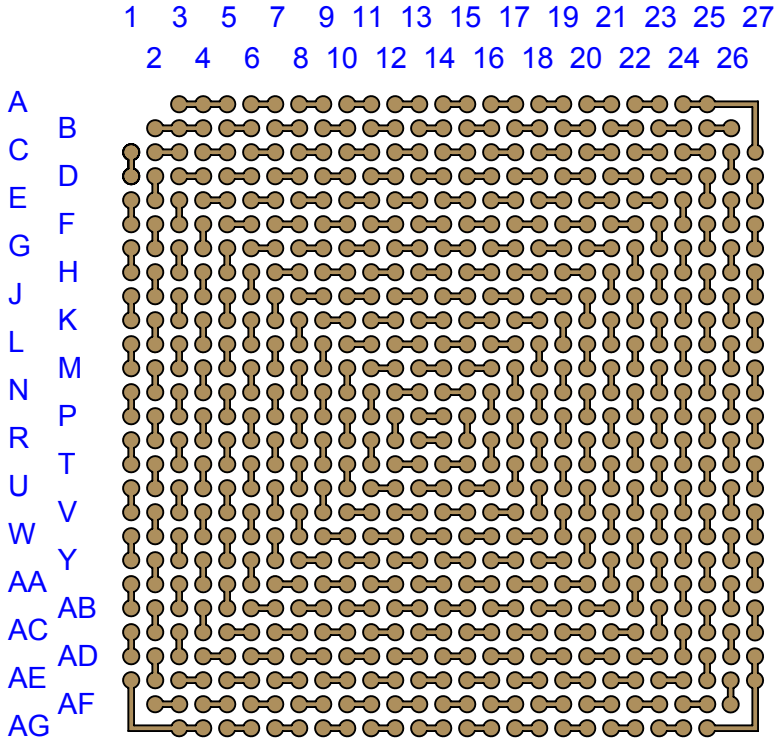
TITLE CCGA717T1.27-DC275D DUMMY COLUMN GRID ARRAY			
SCALE 2:1	SIZE A	DRAWING NO. 160100	REV A
DO NOT SCALE DRAWING			SHEET 5 OF 10

# SOLDER PIN OPTIONS

## COLUMN (PAD) VIEW



## BOTTOM X-RAY VIEWED FROM TOP



<b>TopLine®</b>			
TITLE CCGA717T1.27-DC275D DUMMY COLUMN GRID ARRAY			
SCALE 2.5:1	SIZE A	DRAWING NO. 160100	REV A
DO NOT SCALE DRAWING			SHEET 6 OF 10

## NET LIST DAISY CHAIN CONNECTION TABLE

DC PAIR	
C1	D1
E1	F1
G1	H1
J1	K1
L1	M1
N1	P1
R1	T1
U1	V1
W1	Y1
AA1	AB1
AC1	AD1
AE1	AG3
B2	B3
D2	E2
F2	G2
H2	J2
K2	L2
M2	N2
P2	R2
T2	U2
V2	W2
Y2	AA2
AB2	AC2
AD2	AE2
A3	A4
C2	C3
E3	F3
G3	H3
J3	K3
L3	M3

DC PAIR	
N3	P3
R3	T3
U3	V3
W3	Y3
AA3	AB3
AC3	AD3
AF2	AF3
B3	B4
D3	D4
F4	G4
H4	J4
K4	L4
M4	N4
P4	R4
T4	U4
V4	W4
Y4	AA4
AB4	AC4
AE3	AE4
AG3	AG4
A4	A5
C4	C5
E4	E5
G5	H5
J5	K5
L5	M5
N5	P5
R5	T5
U5	V5
W5	Y5

DC PAIR	
AA5	AB5
AD4	AD5
AF4	AF5
B5	B6
D5	D6
F5	F6
H6	J6
K6	L6
M6	N6
P6	R6
T6	U6
V6	W6
Y6	AA6
AC5	AC6
AE5	AE6
AG5	AG6
A6	A7
C6	C7
E6	E7
G6	G7
J7	K7
L7	M7
N7	P7
R7	T7
U7	V7
W7	Y7
AB6	AB7
AD6	AD7
AF6	AF7
B7	B8

DC PAIR	
D7	D8
F7	F8
H7	H8
K8	L8
M8	N8
P8	R8
T8	U8
V8	W8
AA7	AA8
AC7	AC8
AE7	AE8
AG7	AG8
A8	A9
C8	C9
E8	E9
G8	G9
J8	J9
L9	M9
N9	P9
R9	T9
U9	V9
Y8	Y9
AB8	AB9
AD8	AD9
AF8	AF9
B9	B10
D9	D10
F9	F10
H9	H10
K9	K10

DC PAIR	
M10	N10
P10	R10
T10	U10
W9	W10
AA9	AA10
AC9	AC10
AE9	AE10
AG9	AG10
A10	A11
C10	C11
E10	E11
G10	G11
J10	J11
L10	L11
N11	P11
R11	T11
V10	V11
Y10	Y11
AB10	AB11
AD10	AD11
AF10	AF11
B11	B12
D11	D12
F11	F12
H11	H12
K11	K12
M11	M12
P12	R12
U11	U12
W11	W12

DC PAIR	
AA11	AA12
AC11	AC12
AE11	AE12
AG11	AG12
A12	A13
C12	C13
E12	E13
G12	G13
J12	J13
L12	L13
N12	N13
T12	T13
V12	V13
Y12	Y13
AB12	AB13
AD12	AD13
AF12	AF13
B13	B14
D13	D14
F13	F14
H13	H14
K13	K14
M13	M14
P13	P14
R13	R14
U13	U14
W13	W14
AA13	AA14
AC13	AC14
AE13	AE14

DC PAIR	
AG13	AG14
A14	A15
C14	C15
E14	E15
G14	G15
J14	J15
L14	L15
N14	N15
P15	R15
T14	T15
V14	V15
Y14	Y15
AB14	AB15
AD14	AD15
AF14	AF15
B15	B16
D15	D16
F15	F16
H15	H16
K15	K16
M15	M16
N16	P16
R16	T16
U15	U16
W15	W16
AA15	AA16
AC15	AC16
AE15	AE16
AG15	AG16
A16	A17

DC PAIR	
C16	C17
E16	E17
G16	G17
J16	J17
L16	L17
M17	N17
P17	R17
T17	U17
V16	V17
Y16	Y17
AB16	AB17
AD16	AD17
AF16	AF17
B17	B18
D17	D18
F17	F18
H17	H18
K17	K18
L18	M18
N18	P18
R18	T18
U18	V18
W17	W18
AA17	AA18
AC17	AC18
AE17	AE18
AG17	AG18
A18	A19
C18	C19
E18	E19

CONTINUED NEXT PAGE

<b>TopLine®</b>			
TITLE CCGA717T1.27-DC275D DUMMY COLUMN GRID ARRAY			
SCALE NONE	SIZE A	DRAWING NO. 160100	REV A
DO NOT SCALE DRAWING			SHEET 7 OF 10

## NET LIST DAISY CHAIN CONNECTION TABLE

DC PAIR	
G18	G19
J18	J19
K19	L19
M19	N19
P19	R19
T19	U19
V19	W19
Y18	Y19
AB18	AB19
AD18	AD19
AF18	AF19
B19	B20
D19	D20
F19	F20
H19	H20
J20	K20
L20	M20
N20	P20
R20	T20
U20	V20
W20	Y20
AA19	AA20
AC19	AC20
AE19	AE20
AG19	AG20
A20	A21
C20	C21
E20	E21
G20	G21
H21	J21

DC PAIR	
K21	L21
M21	N21
P21	R21
T21	U21
V21	W21
Y21	AA21
AB20	AB21
AD20	AD21
AF20	AF21
B21	B22
D21	D22
F21	F22
G22	H22
J22	K22
L22	M22
N22	P22
R22	T22
U22	V22
W22	Y22
AA22	AB22
AC21	AC22
AE21	AE22
AG21	AG22
A22	A23
C22	C23
E22	E23
F23	G23
H23	J23
K23	L23
M23	N23

DC PAIR	
P23	R23
T23	U23
V23	W23
Y23	AA23
AB23	AC23
AD22	AD23
AF22	AF23
B23	B24
D23	D24
E24	F24
G24	H24
J24	K24
L24	M24
N24	P24
R24	T24
U24	V24
W24	Y24
AA24	AB24
AC24	AD24
AE23	AE24
AG23	AG24
A24	A25
C24	C25
D25	E25
F25	G25
H25	J25
K25	L25
M25	N25
P25	R25
T25	U25

DC PAIR	
V25	W25
Y25	AA25
AB25	AC25
AD25	AE25
AF24	AF25
B25	B26
C26	D26
E26	F26
G26	H26
J26	K26
L26	M26
N26	P26
R26	T26
U26	V26
W26	Y26
AA26	AB26
AC26	AD26
AE26	AF26
AG25	AE27
C27	A25
D27	E27
F27	G27
H27	J27
K27	L27
M27	N27
P27	R27
T27	U27
V27	W27
Y27	AA27
AB27	AC27

DC PAIR	
AD27	AE27

DC 3-PADS		
LGA NO.	LGA NO.	LGA NO.
AE1	AG3	AG4
B2	B3	B4
A3	A4	A5
A24	A25	C27
AD27	AE27	AG25

**TopLine®**

TITLE CCGA717T1.27-DC275D  
DUMMY COLUMN GRID ARRAY

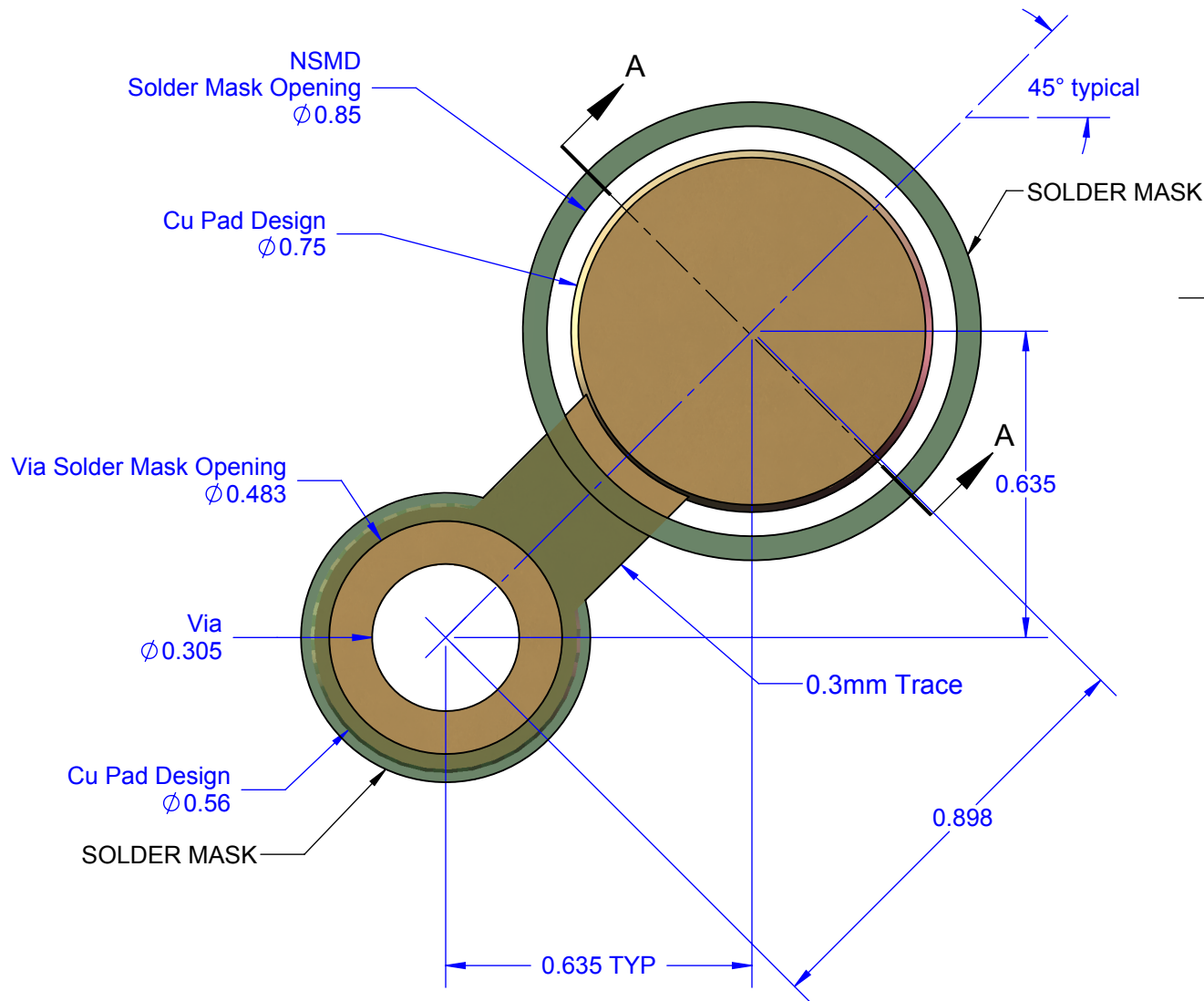
SCALE NONE	SIZE A	DRAWING NO. 160100	REV A
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DO NOT SCALE DRAWING

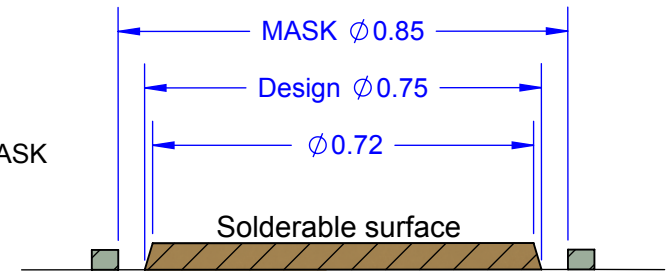
SHEET 8 OF 10



# PCB PAD DESIGN RULES CCGA PITCH 1.27MM



## Cu PAD SIDE VIEW



Section A-A

### NOTES:

1. DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED.
2. SOLDERABLE SURFACE  $\phi 0.72$  IS THE FUNCTIONAL SURFACE OF Cu PAD.
3.  $\phi 0.75$  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 CCGA PCB DESIGN RULES  
PITCH 1.27mm

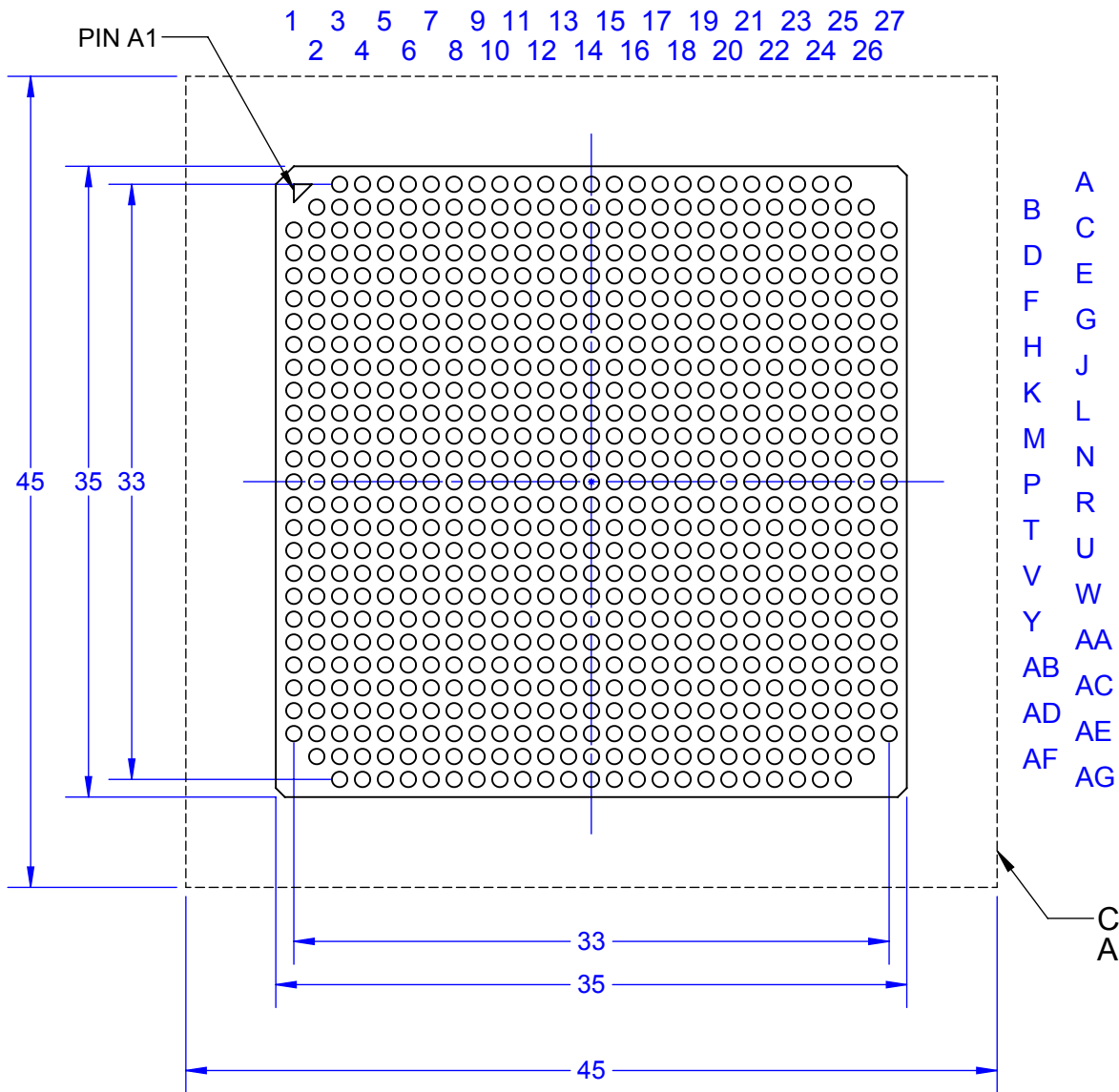
SCALE	SIZE	DRAWING NO.	REV
70:1	A	160030	A

DO NOT SCALE DRAWING

SHEET 9 OF 10

# PCB LAND ARRAY

SHOWN WITHOUT DAISY CHAIN



SOLDER PASTE STENCIL	
Thickness	200µm 8.0 mil
Aperture	1:1

SOLDER PASTE VOLUME	
Nominal	0.078~0.088mm <sup>3</sup> 5000~5600mils <sup>3</sup>
Maximum	0.12mm <sup>3</sup> 7600mils <sup>3</sup>
Minimum	0.047mm <sup>3</sup> 3000 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  $\phi 0.72$  IS THE FUNCTIONAL SURFACE OF Cu PAD.
3.  $\phi 0.75$  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.



TITLE CCGA717T1.27-DC275D  
DUMMY COLUMN GRID ARRAY

SCALE	SIZE	DRAWING NO.	REV
2.5:1	A	160100	A

DO NOT SCALE DRAWING

SHEET 10 OF 10