SC5005

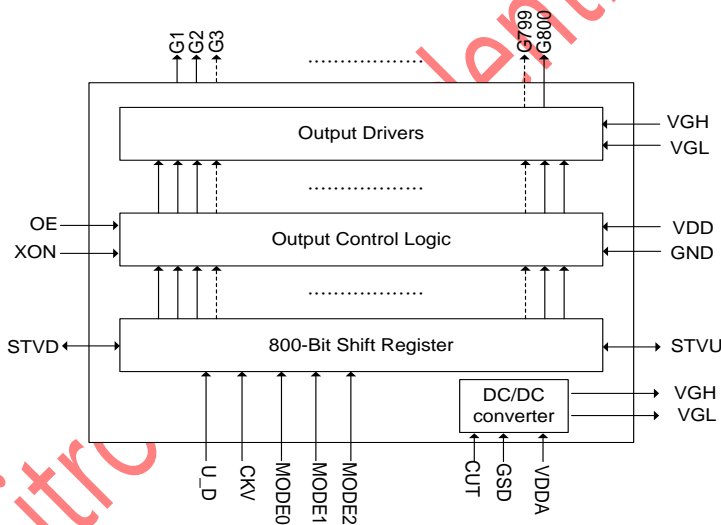## 800/768/720/640/600/540/480/384-Channel TFT LCD Gate Driver

Product Description

SC5005 is a 800/768/720/640/600/540/480/384-channel gate driver used for driving the gate electrode of TFT LCD panel. It is designed for 2-level output with maximum +40V output driving voltage. The special pin location is designed for the COG type.
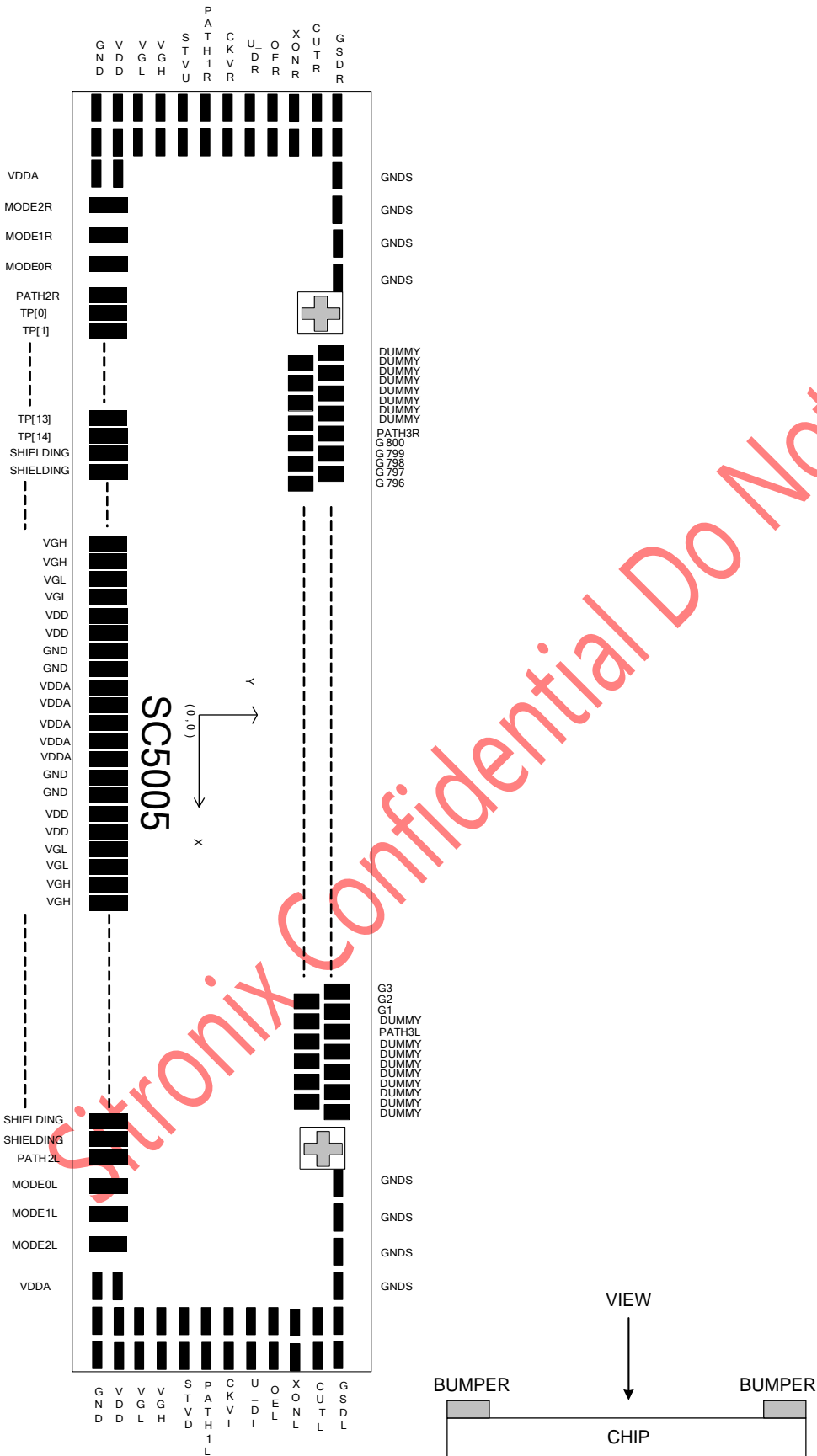
Features

- 2-level output gate driver for TFT LCD panel
- 800/768/720/640/600/540/480/384 channels output
- Digital supply voltage:3V~3.6V
- Maximum +40V output driving voltage
- Bi-directional data shift capability
- 200KHz maximum operation frequency
- High voltage CMOS process technology
- Chip on glass (COG) package
- Built-in DC/DC converter for VGH and VGL

Function Block Diagram

Pin Assignments (view from bump side)

Top pin labels (left to right): GND, VDD, VGL, VGH, STVU, PATH1R, CKVR, U_DR, OER, XONR, CUTR, GSDR

Left side labels (top to bottom): VDDA, MODE2R, MODE1R, MODE0R, PATH2R, TP[0], TP[1], TP[13], TP[14], SHIELDING, SHIELDING, VGH, VGH, VGL, VGL, VDD, VDD, GND, GND, VDDA, VDDA, VDDA, VDDA, VDDA, GND, GND, VDD, VDD, VGL, VGL, VGH, VGH, SHIELDING, SHIELDING, PATH2L, MODE0L, MODE1L, MODE2L, VDDA

Right side labels (top to bottom): GNDS, GNDS, GNDS, GNDS, DUMMY, DUMMY, DUMMY, DUMMY, DUMMY, DUMMY, DUMMY, PATH3R, G 800, G 799, G 798, G 797, G 796, G3, G2, G1, DUMMY, PATH3L, DUMMY, DUMMY, DUMMY, DUMMY, DUMMY, DUMMY, DUMMY, DUMMY, GNDS, GNDS, GNDS, GNDS

Center text: SC5005, (0,0), X, Y

Bottom pin labels (left to right): GND, VDD, VGL, VGH, STVD, PATH1L, CKVL, U_DL, OEL, XONL, CUTL, GSDL

VIEW

BUMPER   BUMPER

CHIP

Pin Description

Designation	I/O	Int. pulled	Description
CKVR,CKVL	I	-	**Vertical shift clock** This is the shift clock for the shift registers. The data in shift registers A and B are shifted synchronously with each rising edge of CKV

XONR,XONL	I	H	**Display On input pin**
			XON=Low Use Built-in DC/DC, all output pins output VDDA,
			                  Use external power, all output pins output VGH
			                  In both conditions, the output voltage irrespective of the shift data and the content of input data. However, this does not cause the contents of the shift registers to be cleared. XON operates asynchronously with CKV, and has priority over OE.
			XON=High All Output pins Output normal voltage levels.

OER,OEL	I	-	These pads are shorted internally ,active high When this pin is applied to "H", channel outputs are disabled(=VGL) This condition will not affect the operation of the internal registers. OE control signals is independent with the CKV.
U_DR,U_DL	I	L	**Transfer direction select pin** This pin specifies the direction in which data is transferred through the shift registers. When U_D=H: Data is shifted in the direction STVD→G1→G2→...→G799→G800→STVU. U_D=L: Data is shifted in the direction STVD←G1←G2←...←G799←G800←STVU.
STVD,STVU	I/O	-	**Vertical shift data input / Output pins** These pins are used to input and output shift data. The function of these pins is switched for input or output by U_D pin as shown below. U_D =H : STVD is input ; STVU as Output to next stage. U_D =L : STVU is input ; STVD as Output to next stage. When set for input, the data is latched into the internal shift registers synchronously with the rising edge of CKV. When set for Output and more then one gate driver are cascaded, these pins Output the data to be fed into the next stage.
MODE0R MODE0L MODE1R MODE1L MODE2R MODE2L	I	-	**Selecting the output mode:** 800/768/720/600/540/480/384 channels
CUTR,CUTL	I	-	Decode enable pin. It is controlled by ST5821.

MODE2	MODE1	MODE0	Output channel	Remark
1	1	1	800	Using G1~G800 (default setting)
1	1	0	768	Using G1~G384 , G417~G800 G385~G416 are fixed to VGL
1	0	1	720	Using G1~G360 , G441~G800 G361~G440 are fixed to VGL
1	0	0	640	Using G1~G320 , G481~G800 G321~G480 are fixed to VGL
0	1	1	600	Using G1~G300 , G501~G800 G301~G500 are fixed to VGL
0	1	0	540	Using G1~G270 , G531~G800 G271~G530 are fixed to VGL
0	0	1	480	Using G1~G240 , G561~G800 G241~G560 are fixed to VGL
0	0	0	384	Using G1~G192 , G609~G800 G193~G608 are fixed to VGL

Designation	I/O	Int. pulled	Description
GSDR,GSDL	I	-	VGH and VGL enable and pump ratio selection. VGH ratio: {TABLE} Note : maximum VGH = 2.0*VDDA

VGH ratio table:

Step	VGH (V)
0	14.5
1	15.0
2	15.5
3	16.0
4	16.5
5	17.0
6	17.5
7	18.0
8	18.5
9	19.0
10	19.5
11	20.0
12	20.5
13	21.0
14	21.5
15	22.0 (default)
16	reserved
17	reserved
18	reserved
19	reserved
20	reserved
21	reserved
22	reserved
23	reserved
24	reserved
25	reserved
26	reserved
27	reserved
28	reserved
29	reserved
30	reserved
31	reserved

Note : maximum VGH = 2.0*VDDA

Designation	I/O	Int. pulled	Description
GSDR,GSDL	I	-	VGH and VGL enable and pump ratio selection. VGL ratio: | Step	VGL (V)
---	---
0	-3.0
1	-3.5
2	-4.0
3	-4.5
4	-5.0
5	-5.5
6	-6.0
7	-6.5
8	-7.0 (default)
9	-7.5
10	-8.0
11	-8.5
12	-9.0
13	-9.5
14	-10.0
15	-10.5	 Note : maximum |VGL|= VDDA
G1~G800	O	-	LCD gate driver outputs
VGH	P	-	Power supply for LCD driver output high (ON)
VDDA	P	-	Charge pump supply
VDD	P	-	Logic power supply
GND	P	-	Logic ground
GNDS	O	-	Logic ground for GSD and CUT on-glass setting only
VGL	P	-	Power supply for LCD driver output low (OFF)
SHIELDING	SD	-	This pin is connected to GND internally. Don't connect to others external voltage.
DUMMY	SD	-	This pin is connected to VGL internally. Don't connect to others external voltage.
TP[13:0]	I	-	Test pins for trimming use, don't connect
TP[14]	O	-	Test pin for trimming use, don't connect
PATH1R, PATH1L	S		Linked together internal
PATH2R, PATH2L	S		Linked together internal
PATH3R, PATH3L	S		Linked together internal

Note1: I:Input;O:Output;I/O:Input/Output;P:Power;S:Shorted line;SD:Shielding pad;
Note2:The unused input pins are recommended to be connected to VDD or GND

Recommend wiring resistance value

Function Type	Pin Name	Wiring resistance value(Ω)
Power Supply	VGH	< 10
	VDDA	
	VDD	
	GND	
	VGL	
Control	XON	< 150
	OE	
	U_D	
	STV	
	CUT	
	GSD	
	Mode[2:0]	
	GNDS	
	SHILDING	
	TP[0:14]	
	PATH1.PATH2.PATH3	

Function Description

IO signal voltage levels

G1 ~ G800

VGH

Logic
signals

VDD

GND

VGL
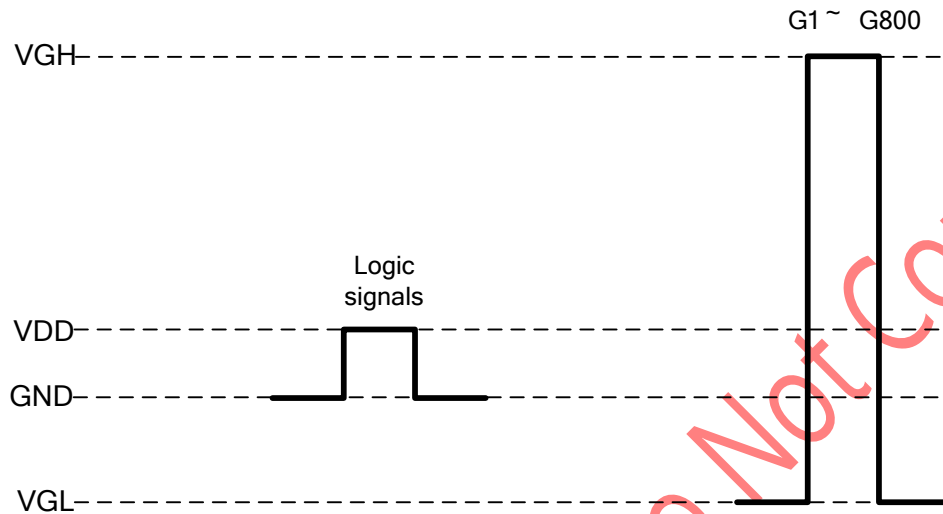
Output Sequence & Frame Control

U_D=H
G1->G2->G3->G4->G5->G6->G7->G8->…->G798->G799->G800

U_D=L
G800->G799->G798->G797->G796->G795->G794->G793->…->G3->->G2->G1

Start Pulse Usage

CKV
STV(input)
G1
G2
G3
G4
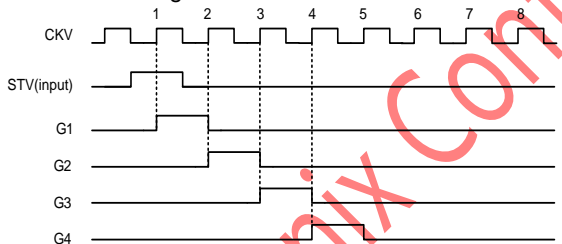
Single Start Pulse Input

CKV
STV(input)
G1
G2
G3
G4
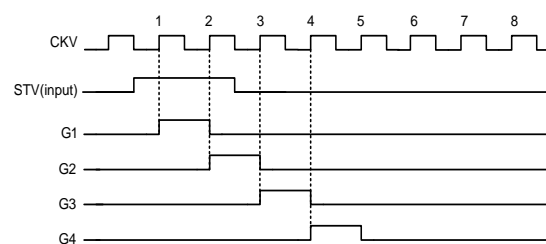
Long Start Pulse Input (2 CKV Period)

CKV
STV(input)
G1
G2
G3
G4
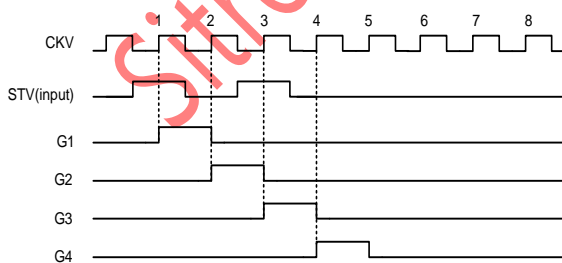
Dual Start Pulse Input

CKV
STV(input)
G1
G2
G3
G4
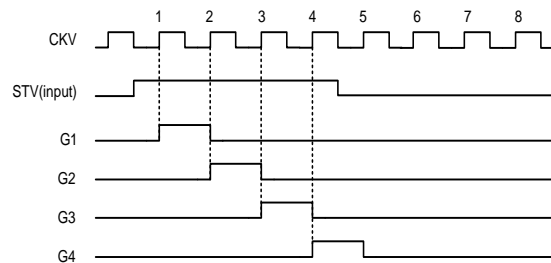
Long Start Pulse Input (continuous 4 CKV Period)

XON function

When XON = "L", all outputs from G1 to G800 are switched ON (set to VGH or VDDA). The action of XON is not CKV synchronous. The outputs switching delays are distributed, so the peak supply current is reduced. The shift register is not affected by XON.

Power up/down sequence

To prevent the device from damage due to latch up, the power ON/OFF sequence shown below must be followed.

Power on: VDD → VDDA → VGL → VGH
Power off: VGH → VGL → VDDA → VDD
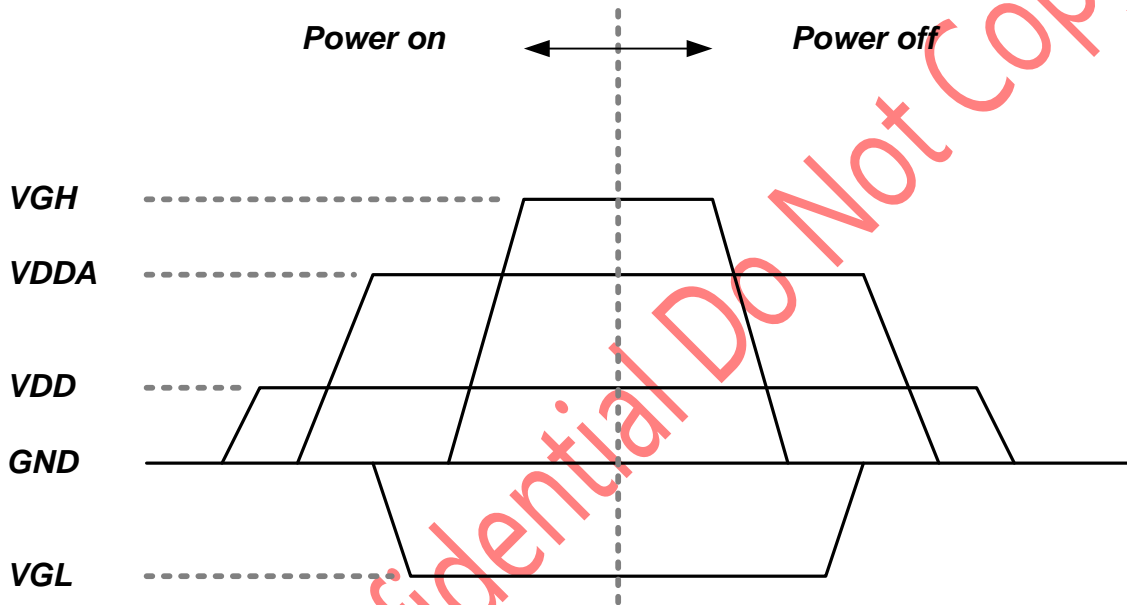
Output Sequence Timing
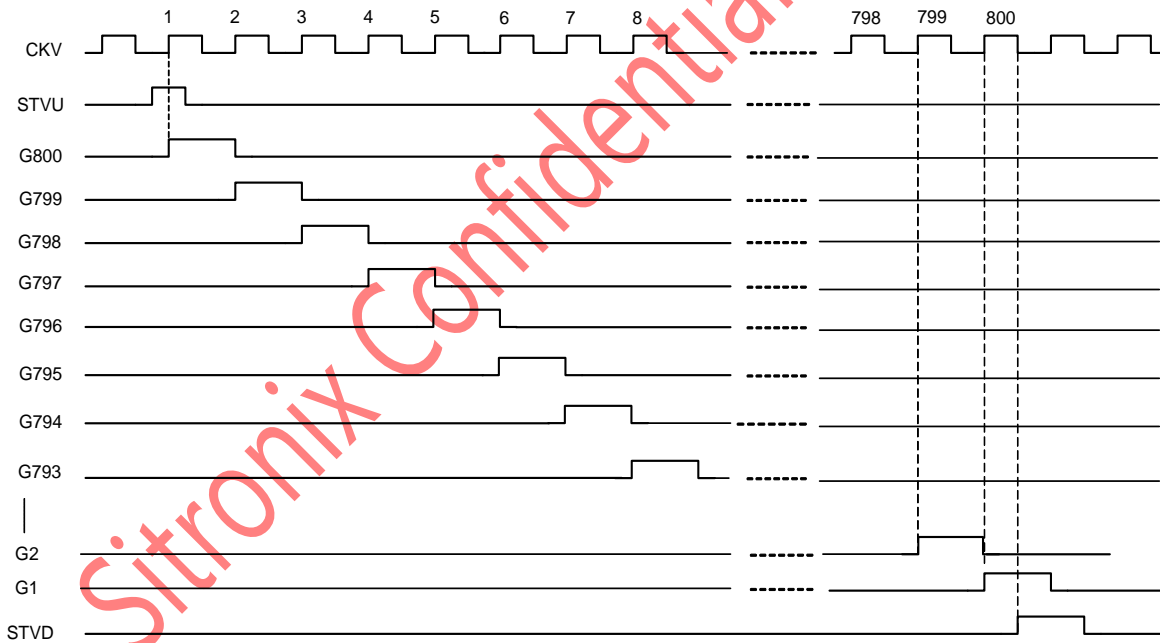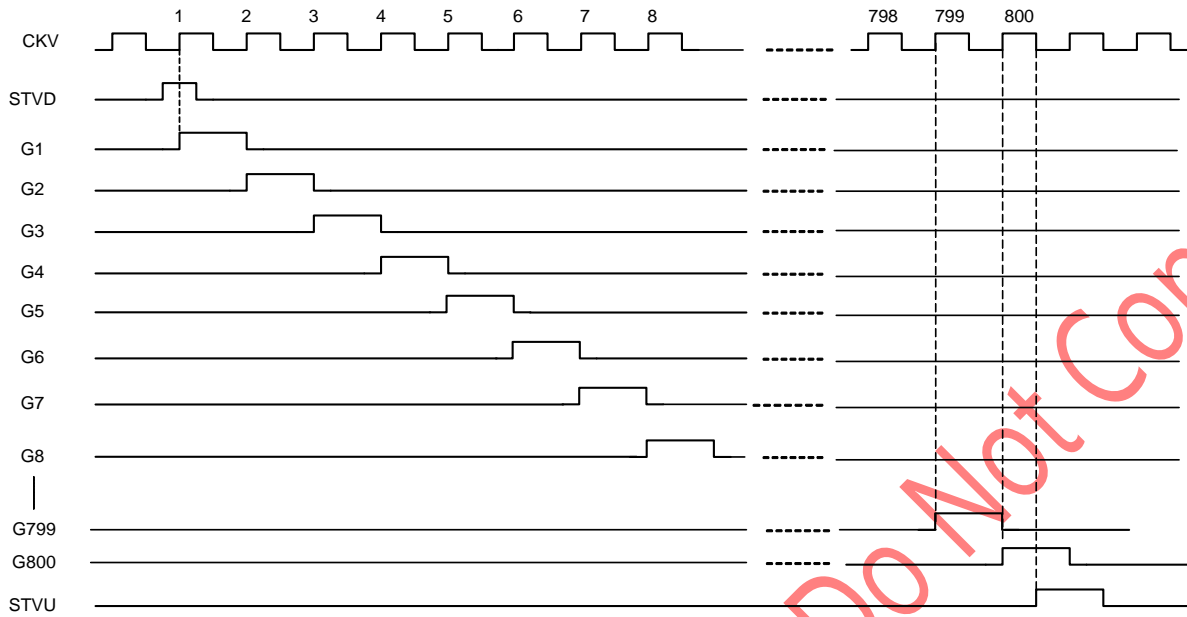
General explanation of XON , OE and CUT

U_D="H"
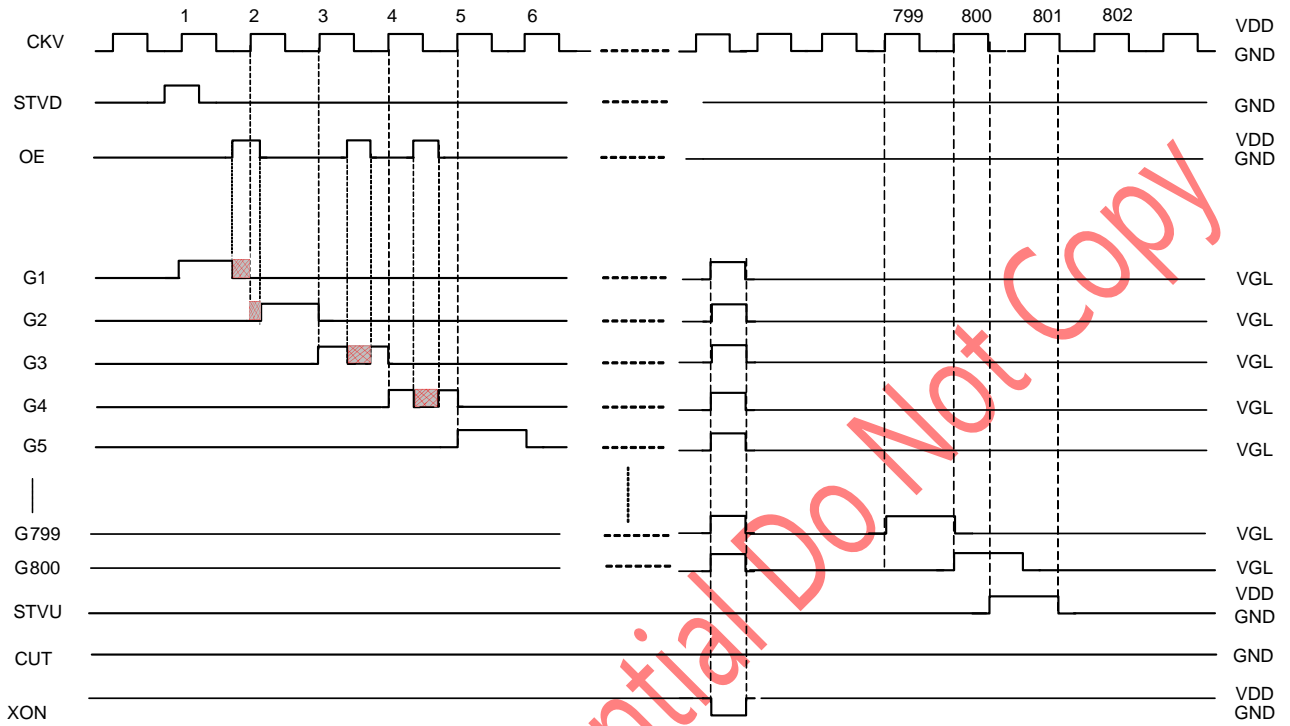
U_D="L"
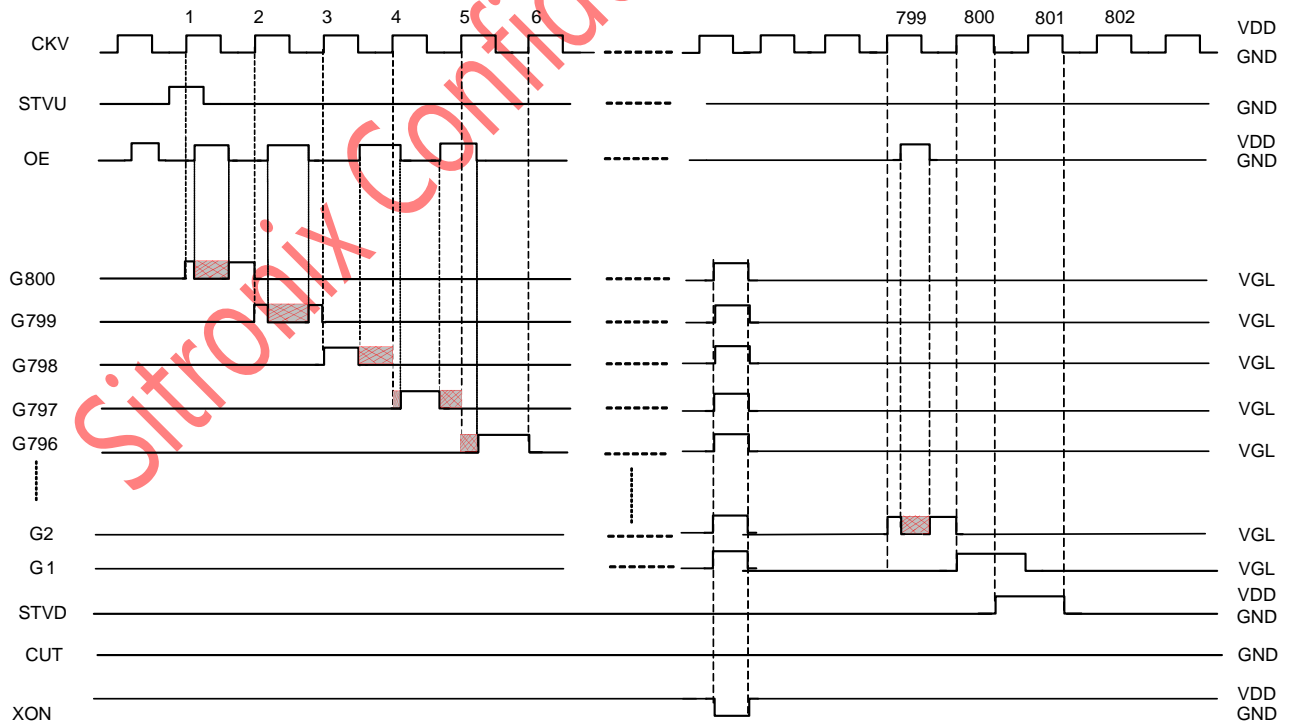
▨ : **Delete from Gate Output By OE**

DC Characteristics

Absolute Maximum Rating (GND = 0V)

Parameter	Symbol	Ratings		Unit
		Min.	Max.	
Power supply voltage (1)	VDDA	-0.3	+14.85	V
Power supply voltage (2)	VGH	-0.3	+42	V
Power supply voltage (3)	VGL	VGH-42	+0.3	V
Power supply voltage (4)	VGH-VGL	-0.3	+42.0	V
Input voltage	Vin	-0.3	VDD+0.3	V
Storage temperature	T_{STG}	-55	+125	ºC

Note: Device is subject to be damaged permanently if stresses beyound those absolute maximum ratings listed above.

Recommended Operation Conditions (GND = 0V)

Parameter	Symbol	Ratings			Unit
		Min.	Typ.	Max.	
Power supply voltage (1)	VDD	3	3.3	3.6	V
Power supply voltage (2)	VDDA	8	11	13.5	V
Power supply voltage (3)	VGH	14.5	22	VGL+40	V
Power supply voltage (4)	VGL	-3	-7	-10.5	V
Power supply voltage (5)	VGH-VGL	17.5	29	40	V
Operation frequency	F_{CKV}			200	KHz
Operation temperature	T_A	-20		+85	ºC

Note: VGH and VGL have +/- 200 mV accuracy with external 1uF and the pump frequency is 0.7MHz ~ 1.4MHz with +/- 8% accuracy by trimming

Electrical Characteristics

(VGH=25V,VGL=-15V,VDD=3.3V,GND=0V, T_A = -20 ºC~ +85 ºC)

Parameter	Symbol	Condition	Ratings			Unit	Application Pin
			Min.	Typ.	Max.		
Input "H" voltage	V_{IH}	-	0.7 x VDD		VDD	V	All input pins
Input "L" voltage	V_{IL}	-	GND		0.3 x VDD		
Ouput "H" voltage	V_{OH}	I_{OH} = 200uA	VDD – 0.4		VDD		STVD,U
Output "L" voltage	V_{OL}	I_{OL} = 200uA	GND		GND + 0.4		
Output "H" resistance	R_{OH}	V_G = VGH – 0.5V			1000	Ω	G1~G800
Output "L" resistance	R_{OL}	V_G = VGL + 0.5V			1000		
Input leakage current	I_{IN}	-	-1.0		+1.0	uA	Note1
Pull high/low resistance	R_{PU}	VDD=3.3V, T_A=25℃	70	200	400	KΩ	Note2
Power consumption (1)	I_{VGH}				200		VGH
Power consumption (2)	I_{VGL}	Note3			200	uA	VGL
Power consumption (3)	I_{DD}				100		VDD

Note (1) CKV, OE, STVU, STVD   (2) XON, MODE0,MODE1, MODE2 pulled high ; CUT, GSD pulled low
      (3) Power consumption with the following condition:
          Output no load, F_{CPV} = 50kHz, OE = V_{IL} , XON = V_{IH} , VGH = 20V, VGL = -8V,VDD = 3.0V, V_{IH} = VDD, V_{IL} = GND

AC Characteristics

(VGH=25V,VGL=-15,VDD=3.3V,GND=0V, T_A = -20 ºC~ +85 ºC)

Parameter	Symbol	Condition	Spec.		Unit
			Min.	Max.	
Operation frequency	T_{CKV}		5		μs
CPV pulse width high	T_{CKVH}	T_{CKVH} + T_{CKVL} = T_{CKV}	1	T_{CKV} – 1	
CPV pulse width low	T_{CKVL}	T_{CKVH} + T_{CKVL} = T_{CKV}	1	T_{CKV} – 1	
OE pulse width	T_{WOE}		1		
CUT pulse width	T_{WCUT}		0.5		
XON pulse width	T_{WXON}		10		
Data setup time	T_{SU}		1.0		μs
Data hold time	T_{HD}		1.0		
Output delay time (1)	T_{PD1}	CL = 300pf		1.2	
Output delay time (2)	T_{PD2}	CL = 30pf		1.2	
Output delay time (3)	T_{PD3}	CL = 300pf		0.8	
Output delay time (4)	T_{PD4}	CL = 300pf		50	

Note: The measurement point for all of above signals is at 50% of input/output amplitude.

Waveform

Application Block Diagram – Gate driver power control setting

Single Gate With charge pump connection

TFT array

SC5005

VGH

VGL

SC5004

SC5004

GSDR
CUTR
XONR
OEVR
UDR
CKVR
STV2R
STV1R

TCON=1
MASTER=1
GCPH_EN=1 (software)
GCPL_EN=1 (software)

SC5005

VGH

VGL

TFT array

GSDL
CUTL
XONL
OEVL
UDL
CKVL
STV1L
STV2L

SC5004

GSDR
CUTR
XONR
OEVR
UDR
CKVR
STV2R
STV1R

SC5004

TCON=1
MASTER=1
GCPH_EN=1 (software)
GCPL_EN=1 (software)

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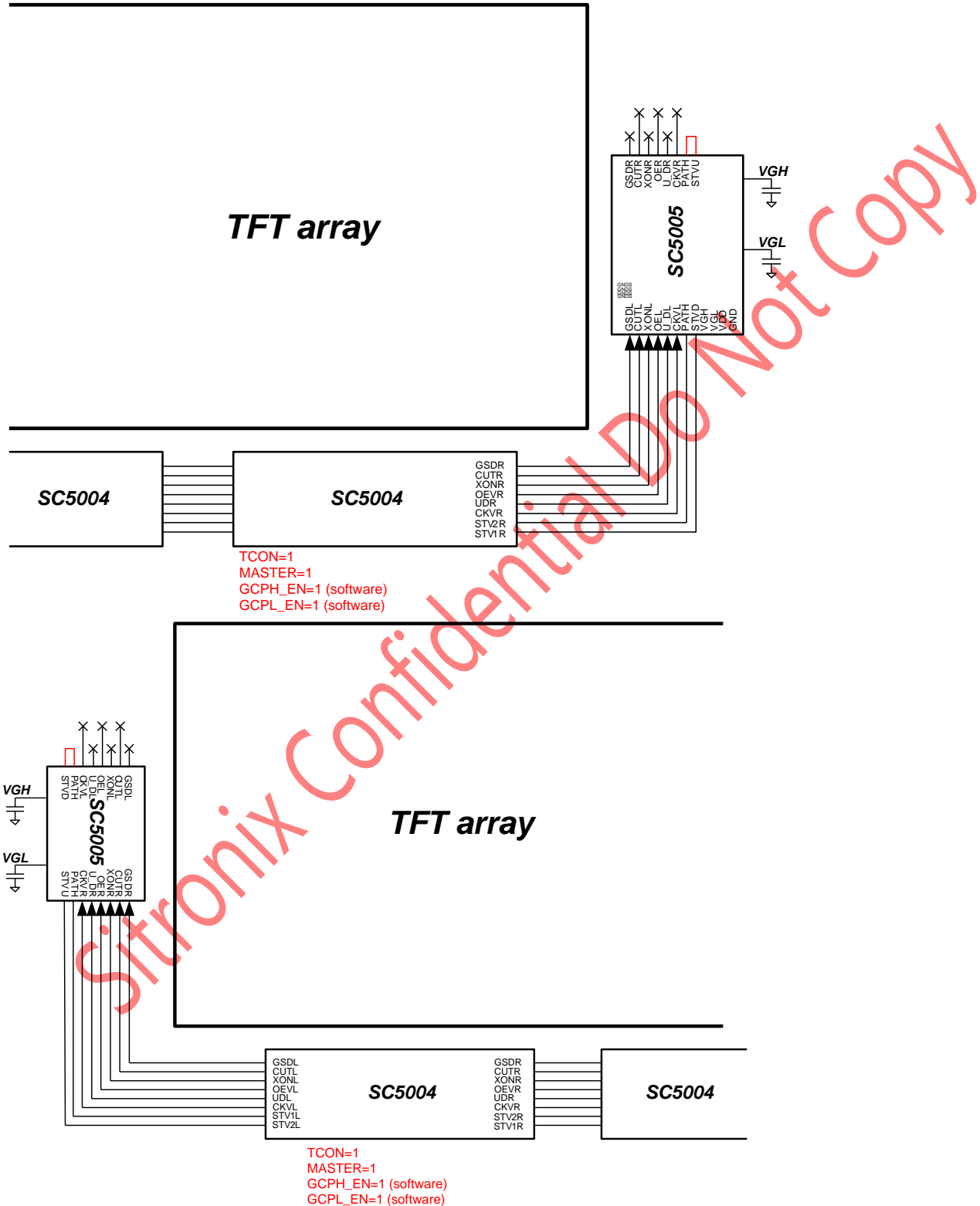
Cascade Gate With charge pump connection
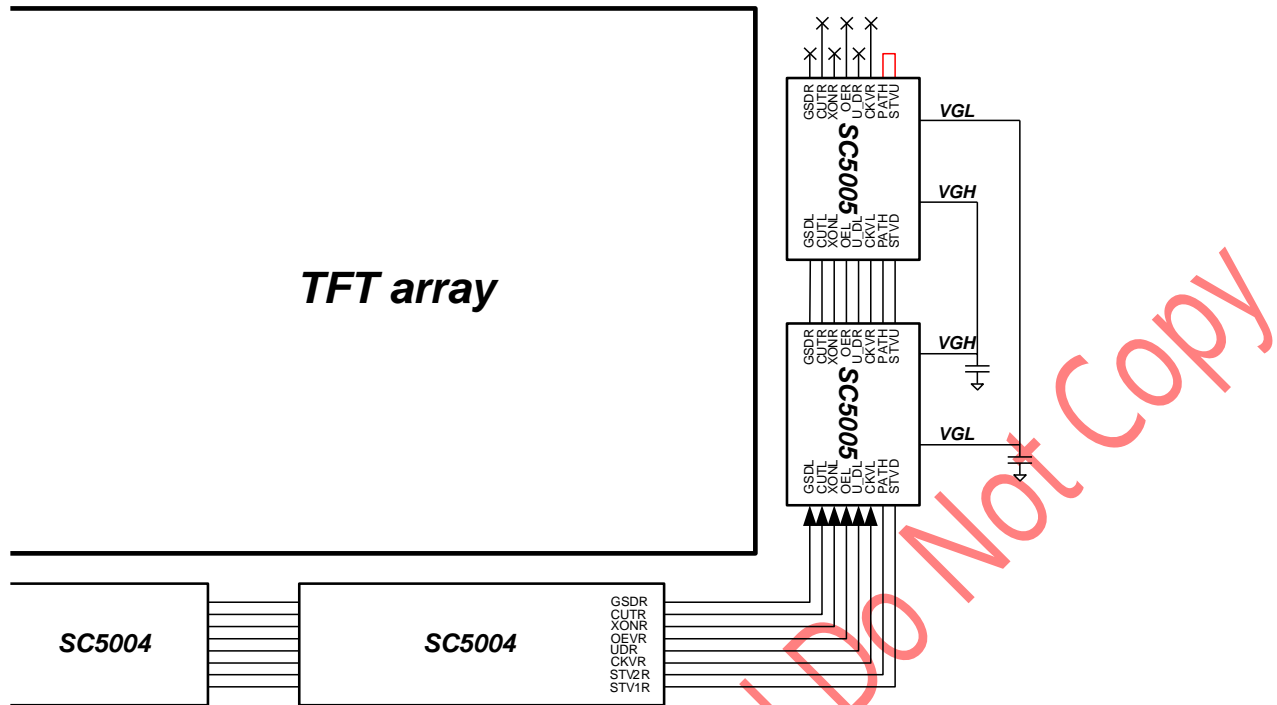
TFT array

SC5004   SC5004

GSDR
CUTR
XONR
OEVR
UDR
CKVR
STV2R
STV1R

TCON=1
MASTER=1
GCPH_EN=1 (software)
GCPL_EN=1 (software)

VGL
VGH
VGH
VGL

VGL
VGH
VGH
VGL

TFT array

SC5005
SC5005

GSDL
CUTL
XONL
OEVL
UDL
CKVL
STV1L
STV2L

SC5004

GSDR
CUTR
XONR
OEVR
UDR
CKVR
STV2R
STV1R

SC5004
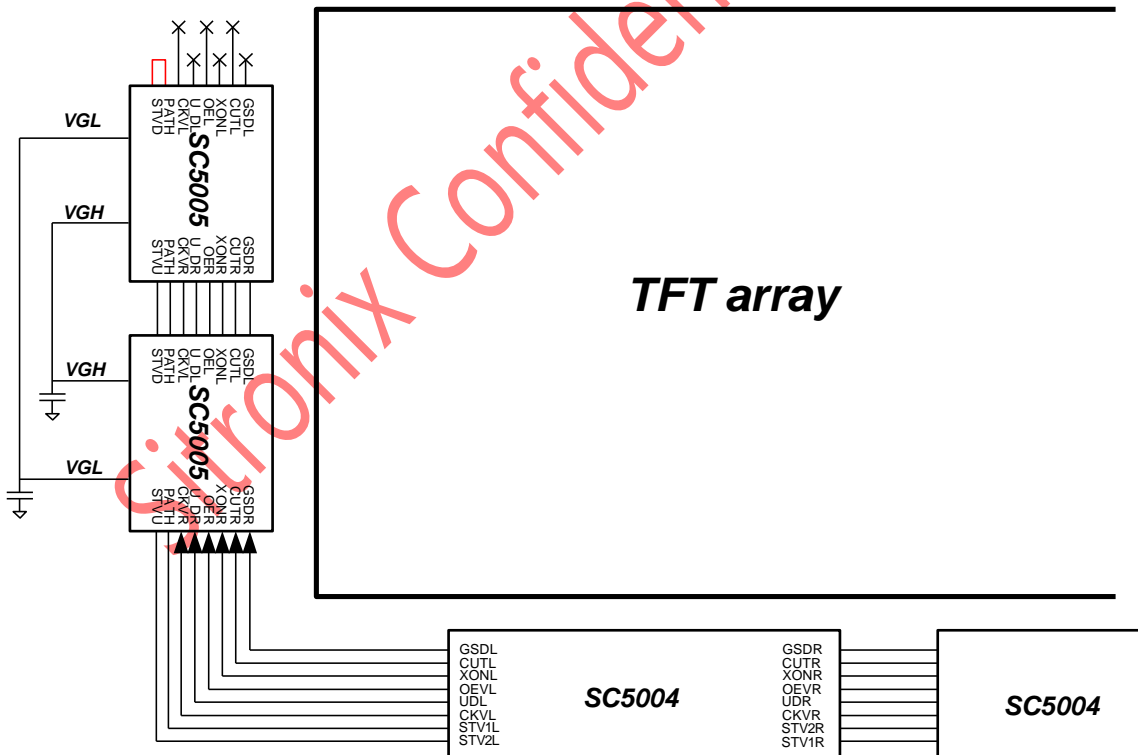
TCON=1
MASTER=1
GCPH_EN=1 (software)
GCPL_EN=1 (software)

Single Gate Without charge pump connection – Pure Gate

Cascade Gate Without charge pump connection – Pure Gate

Chip line Dimensions (unit: um) and view from bump side
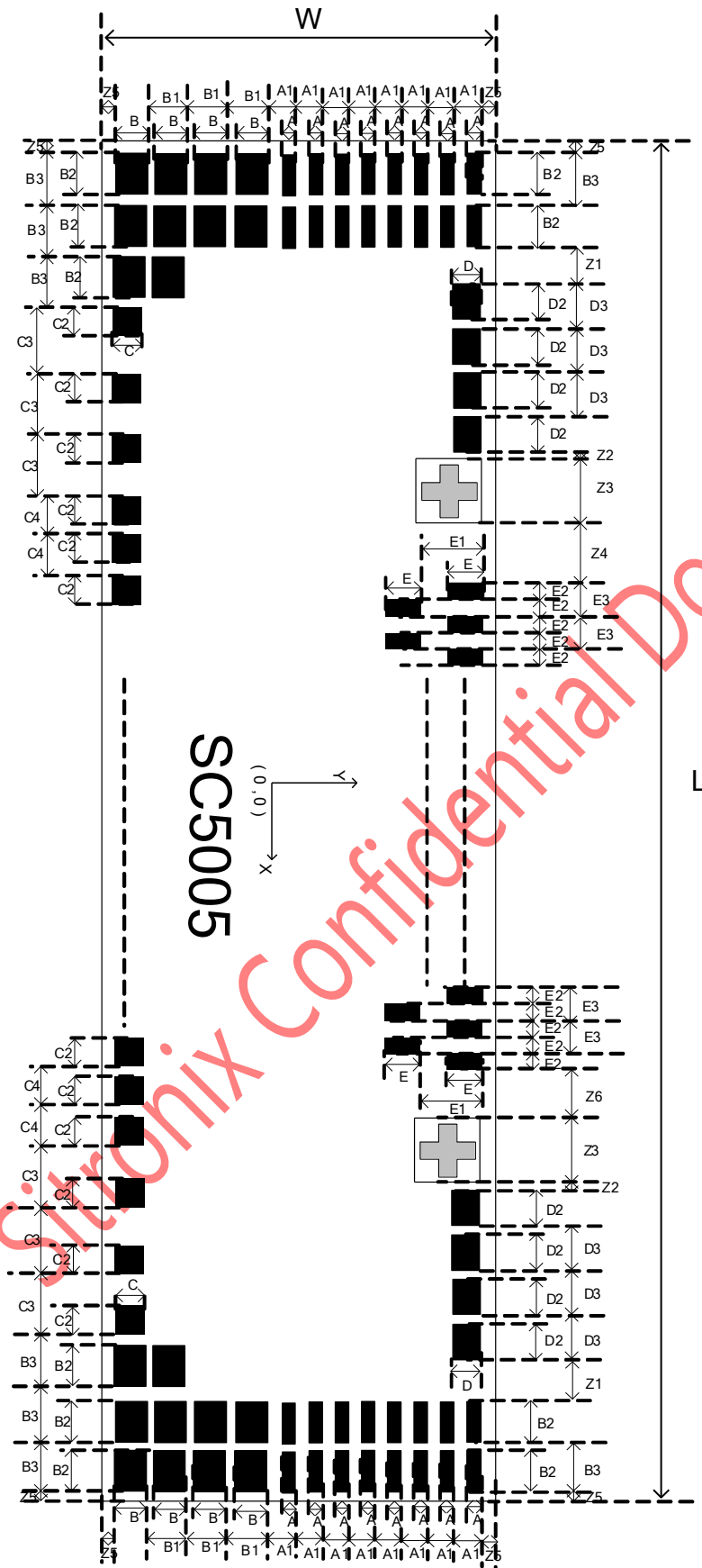
Alignment Mark
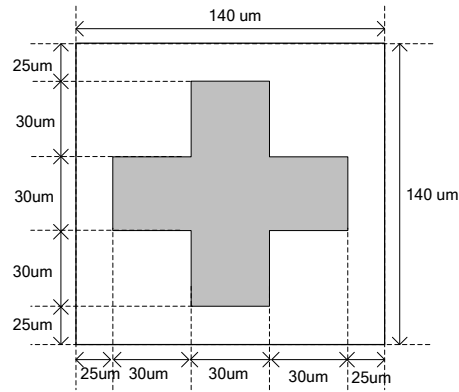
Symbol	Dimensions (um)	Symbol	Dimensions (um)
A	20	E	115
A1	40	E1	145
B	70	E2	18
B1	90	E3	36
B2	120	Z1	60
B3	140	Z2	3.5
C	60	Z3	140
C2	90	Z4	47.5
C3	140	Z5	15
C4	110	Z6	29.5
D	50	W	690
D2	40	L	16540
D3	60		

Chip size dimension:

	Min.	Typical	Max.
W	690	720	760
L	16540	16570	16610

PAD coordinate

num	name	X	Y	Width	Height
1	GSDR	-8195	318.5	120	20
2	CUTR	-8195	278.5	120	20
3	XONB	-8195	238.5	120	20
4	OER	-8195	198.5	120	20
5	U_DR	-8195	158.5	120	20
6	U_DR	-8055	158.5	120	20
7	CKVR	-8195	118.5	120	20
8	CKVR	-8055	118.5	120	20
9	PATH1R	-8195	78.5	120	20
10	PATH1R	-8055	78.5	120	20
11	STVU	-8195	38.5	120	20
12	STVU	-8055	38.5	120	20
13	VGH	-8195	-26.5	120	70
14	VGH	-8055	-26.5	120	70
15	VGL	-8195	-116.5	120	70
16	VGL	-8055	-116.5	120	70
17	VDD	-8195	-206.5	120	70
18	GND	-8195	-296.5	120	70
19	GND	-8055	-296.5	120	70
20	VDD	-8055	-206.5	120	70
21	VDDA	-7915	-296.5	120	70
22	VDDA	-7915	-206.5	120	70
23	MODE2R	-7790	-301.5	90	60
24	MODE1R	-7650	-301.5	90	60
25	MODE0R	-7510	-301.5	90	60
26	PATH2R	-7370	-301.5	90	60
27	TP[0]	-7260	-301.5	90	60
28	TP[1]	-7150	-301.5	90	60
29	TP[2]	-7040	-301.5	90	60
30	TP[3]	-6930	-301.5	90	60
31	TP[4]	-6820	-301.5	90	60
32	TP[5]	-6710	-301.5	90	60
33	TP[6]	-6600	-301.5	90	60
34	TP[7]	-6490	-301.5	90	60
35	TP[8]	-6380	-301.5	90	60
36	TP[9]	-6270	-301.5	90	60
37	TP[10]	-6160	-301.5	90	60
38	TP[11]	-6050	-301.5	90	60
39	TP[12]	-5940	-301.5	90	60
40	TP[13]	-5830	-301.5	90	60
41	TP[14]	-5720	-301.5	90	60
42	SHILDING	-5610	-301.5	90	60
43	SHILDING	-5500	-301.5	90	60
44	SHILDING	-5390	-301.5	90	60
45	SHILDING	-5280	-301.5	90	60
46	SHILDING	-5170	-301.5	90	60
47	SHILDING	-5060	-301.5	90	60
48	SHILDING	-4950	-301.5	90	60
49	SHILDING	-4840	-301.5	90	60
50	SHILDING	-4730	-301.5	90	60
51	SHILDING	-4620	-301.5	90	60
52	SHILDING	-4510	-301.5	90	60
53	SHILDING	-4400	-301.5	90	60
54	SHILDING	-4290	-301.5	90	60
55	SHILDING	-4180	-301.5	90	60
56	SHILDING	-4070	-301.5	90	60
57	SHILDING	-3960	-301.5	90	60
58	SHILDING	-3850	-301.5	90	60
59	SHILDING	-3740	-301.5	90	60
60	SHILDING	-3630	-301.5	90	60
61	SHILDING	-3520	-301.5	90	60
62	SHILDING	-3410	-301.5	90	60
63	SHILDING	-3300	-301.5	90	60
64	SHILDING	-3190	-301.5	90	60
65	SHILDING	-3080	-301.5	90	60
66	SHILDING	-2970	-301.5	90	60
67	SHILDING	-2860	-301.5	90	60
68	SHILDING	-2750	-301.5	90	60
69	SHILDING	-2640	-301.5	90	60
70	SHILDING	-2530	-301.5	90	60
71	SHILDING	-2420	-301.5	90	60
72	SHILDING	-2310	-301.5	90	60
73	SHILDING	-2200	-301.5	90	60
74	SHILDING	-2090	-301.5	90	60
75	SHILDING	-1980	-301.5	90	60
76	SHILDING	-1870	-301.5	90	60
77	SHILDING	-1760	-301.5	90	60
78	SHILDING	-1650	-301.5	90	60
79	SHILDING	-1540	-301.5	90	60
80	SHILDING	-1430	-301.5	90	60
81	SHILDING	-1320	-301.5	90	60
82	SHILDING	-1210	-301.5	90	60
83	VGH	-1100	-301.5	90	60
84	VGH	-990	-301.5	90	60
85	VGL	-880	-301.5	90	60
86	VGL	-770	-301.5	90	60
87	VDD	-660	-301.5	90	60
88	VDD	-550	-301.5	90	60
89	GND	-440	-301.5	90	60
90	GND	-330	-301.5	90	60
91	VDDA	-220	-301.5	90	60
92	VDDA	-110	-301.5	90	60
93	VDDA	0	-301.5	90	60
94	VDDA	110	-301.5	90	60
95	VDDA	220	-301.5	90	60
96	GND	330	-301.5	90	60
97	GND	440	-301.5	90	60
98	VDD	550	-301.5	90	60
99	VDD	660	-301.5	90	60
100	VGL	770	-301.5	90	60

num	name	X	Y	Width	Height
101	VGL	880	-301.5	90	60
102	VGH	990	-301.5	90	60
103	VGH	1100	-301.5	90	60
104	SHILDING	1210	-301.5	90	60
105	SHILDING	1320	-301.5	90	60
106	SHILDING	1430	-301.5	90	60
107	SHILDING	1540	-301.5	90	60
108	SHILDING	1650	-301.5	90	60
109	SHILDING	1760	-301.5	90	60
110	SHILDING	1870	-301.5	90	60
111	SHILDING	1980	-301.5	90	60
112	SHILDING	2090	-301.5	90	60
113	SHILDING	2200	-301.5	90	60
114	SHILDING	2310	-301.5	90	60
115	SHILDING	2420	-301.5	90	60
116	SHILDING	2530	-301.5	90	60
117	SHILDING	2640	-301.5	90	60
118	SHILDING	2750	-301.5	90	60
119	SHILDING	2860	-301.5	90	60
120	SHILDING	2970	-301.5	90	60
121	SHILDING	3080	-301.5	90	60
122	SHILDING	3190	-301.5	90	60
123	SHILDING	3300	-301.5	90	60
124	SHILDING	3410	-301.5	90	60
125	SHILDING	3520	-301.5	90	60
126	SHILDING	3630	-301.5	90	60
127	SHILDING	3740	-301.5	90	60
128	SHILDING	3850	-301.5	90	60
129	SHILDING	3960	-301.5	90	60
130	SHILDING	4070	-301.5	90	60
131	SHILDING	4180	-301.5	90	60
132	SHILDING	4290	-301.5	90	60
133	SHILDING	4400	-301.5	90	60
134	SHILDING	4510	-301.5	90	60
135	SHILDING	4620	-301.5	90	60
136	SHILDING	4730	-301.5	90	60
137	SHILDING	4840	-301.5	90	60
138	SHILDING	4950	-301.5	90	60
139	SHILDING	5060	-301.5	90	60
140	SHILDING	5170	-301.5	90	60
141	SHILDING	5280	-301.5	90	60
142	SHILDING	5390	-301.5	90	60
143	SHILDING	5500	-301.5	90	60
144	SHILDING	5610	-301.5	90	60
145	SHILDING	5720	-301.5	90	60
146	SHILDING	5830	-301.5	90	60
147	SHILDING	5940	-301.5	90	60
148	SHILDING	6050	-301.5	90	60
149	SHILDING	6160	-301.5	90	60
150	SHILDING	6270	-301.5	90	60

num	name	X	Y	Width	Height
151	SHILDING	6380	-301.5	90	60
152	SHILDING	6490	-301.5	90	60
153	SHILDING	6600	-301.5	90	60
154	SHILDING	6710	-301.5	90	60
155	SHILDING	6820	-301.5	90	60
156	SHILDING	6930	-301.5	90	60
157	SHILDING	7040	-301.5	90	60
158	SHILDING	7150	-301.5	90	60
159	SHILDING	7260	-301.5	90	60
160	PATH2L	7370	-301.5	90	60
161	MODE0L	7510	-301.5	90	60
162	MODE1L	7650	-301.5	90	60
163	MODE2L	7790	-301.5	90	60
164	VDDA	7915	-296.5	120	70
165	VDDA	7915	-206.5	120	70
166	GND	8055	-296.5	120	70
167	VDD	8055	-206.5	120	70
168	GND	8195	-296.5	120	70
169	VDD	8195	-206.5	120	70
170	VGL	8055	-116.5	120	70
171	VGL	8195	-116.5	120	70
172	VGH	8055	-26.5	120	70
173	VGH	8195	-26.5	120	70
174	STVD	8055	38.5	120	20
175	STVD	8195	38.5	120	20
176	PATH1L	8055	78.5	120	20
177	PATH1L	8195	78.5	120	20
178	CKVL	8055	118.5	120	20
179	CKVL	8195	118.5	120	20
180	U_DL	8055	158.5	120	20
181	U_DL	8195	158.5	120	20
182	OEL	8195	198.5	120	20
183	XONL	8195	238.5	120	20
184	CUTL	8195	278.5	120	20
185	GSDL	8195	318.5	120	20
186	GSDL	8055	318.5	120	20
187	CUTL	8055	278.5	120	20
188	XONL	8055	238.5	120	20
189	OEL	8055	198.5	120	20
190	GNDS	7915	303.5	40	50
191	GNDS	7855	303.5	40	50
192	GNDS	7795	303.5	40	50
193	GNDS	7735	303.5	40	50
194	ALIGNMENT MARK	7641.5	262	140	140
195	DUMMY1[1]	7533	271	18	115
196	DUMMY1[2]	7515	126	18	115
197	DUMMY1[3]	7497	271	18	115
198	DUMMY1[4]	7479	126	18	115
199	DUMMY1[5]	7461	271	18	115
200	DUMMY1[6]	7443	126	18	115

num	name	X	Y	Width	Height	num	name	X	Y	Width	Height
201	DUMMY1[7]	7425	271	18	115	251	GO[47]	6525	271	18	115
202	DUMMY1[8]	7407	126	18	115	252	GO[48]	6507	126	18	115
203	PATH3L	7389	271	18	115	253	GO[49]	6489	271	18	115
204	DUMMY1[9]	7371	126	18	115	254	GO[50]	6471	126	18	115
205	GO[1]	7353	271	18	115	255	GO[51]	6453	271	18	115
206	GO[2]	7335	126	18	115	256	GO[52]	6435	126	18	115
207	GO[3]	7317	271	18	115	257	GO[53]	6417	271	18	115
208	GO[4]	7299	126	18	115	258	GO[54]	6399	126	18	115
209	GO[5]	7281	271	18	115	259	GO[55]	6381	271	18	115
210	GO[6]	7263	126	18	115	260	GO[56]	6363	126	18	115
211	GO[7]	7245	271	18	115	261	GO[57]	6345	271	18	115
212	GO[8]	7227	126	18	115	262	GO[58]	6327	126	18	115
213	GO[9]	7209	271	18	115	263	GO[59]	6309	271	18	115
214	GO[10]	7191	126	18	115	264	GO[60]	6291	126	18	115
215	GO[11]	7173	271	18	115	265	GO[61]	6273	271	18	115
216	GO[12]	7155	126	18	115	266	GO[62]	6255	126	18	115
217	GO[13]	7137	271	18	115	267	GO[63]	6237	271	18	115
218	GO[14]	7119	126	18	115	268	GO[64]	6219	126	18	115
219	GO[15]	7101	271	18	115	269	GO[65]	6201	271	18	115
220	GO[16]	7083	126	18	115	270	GO[66]	6183	126	18	115
221	GO[17]	7065	271	18	115	271	GO[67]	6165	271	18	115
222	GO[18]	7047	126	18	115	272	GO[68]	6147	126	18	115
223	GO[19]	7029	271	18	115	273	GO[69]	6129	271	18	115
224	GO[20]	7011	126	18	115	274	GO[70]	6111	126	18	115
225	GO[21]	6993	271	18	115	275	GO[71]	6093	271	18	115
226	GO[22]	6975	126	18	115	276	GO[72]	6075	126	18	115
227	GO[23]	6957	271	18	115	277	GO[73]	6057	271	18	115
228	GO[24]	6939	126	18	115	278	GO[74]	6039	126	18	115
229	GO[25]	6921	271	18	115	279	GO[75]	6021	271	18	115
230	GO[26]	6903	126	18	115	280	GO[76]	6003	126	18	115
231	GO[27]	6885	271	18	115	281	GO[77]	5985	271	18	115
232	GO[28]	6867	126	18	115	282	GO[78]	5967	126	18	115
233	GO[29]	6849	271	18	115	283	GO[79]	5949	271	18	115
234	GO[30]	6831	126	18	115	284	GO[80]	5931	126	18	115
235	GO[31]	6813	271	18	115	285	GO[81]	5913	271	18	115
236	GO[32]	6795	126	18	115	286	GO[82]	5895	126	18	115
237	GO[33]	6777	271	18	115	287	GO[83]	5877	271	18	115
238	GO[34]	6759	126	18	115	288	GO[84]	5859	126	18	115
239	GO[35]	6741	271	18	115	289	GO[85]	5841	271	18	115
240	GO[36]	6723	126	18	115	290	GO[86]	5823	126	18	115
241	GO[37]	6705	271	18	115	291	GO[87]	5805	271	18	115
242	GO[38]	6687	126	18	115	292	GO[88]	5787	126	18	115
243	GO[39]	6669	271	18	115	293	GO[89]	5769	271	18	115
244	GO[40]	6651	126	18	115	294	GO[90]	5751	126	18	115
245	GO[41]	6633	271	18	115	295	GO[91]	5733	271	18	115
246	GO[42]	6615	126	18	115	296	GO[92]	5715	126	18	115
247	GO[43]	6597	271	18	115	297	GO[93]	5697	271	18	115
248	GO[44]	6579	126	18	115	298	GO[94]	5679	126	18	115
249	GO[45]	6561	271	18	115	299	GO[95]	5661	271	18	115
250	GO[46]	6543	126	18	115	300	GO[96]	5643	126	18	115

num	name	X	Y	Width	Height
301	GO[97]	5625	271	18	115
302	GO[98]	5607	126	18	115
303	GO[99]	5589	271	18	115
304	GO[100]	5571	126	18	115
305	GO[101]	5553	271	18	115
306	GO[102]	5535	126	18	115
307	GO[103]	5517	271	18	115
308	GO[104]	5499	126	18	115
309	GO[105]	5481	271	18	115
310	GO[106]	5463	126	18	115
311	GO[107]	5445	271	18	115
312	GO[108]	5427	126	18	115
313	GO[109]	5409	271	18	115
314	GO[110]	5391	126	18	115
315	GO[111]	5373	271	18	115
316	GO[112]	5355	126	18	115
317	GO[113]	5337	271	18	115
318	GO[114]	5319	126	18	115
319	GO[115]	5301	271	18	115
320	GO[116]	5283	126	18	115
321	GO[117]	5265	271	18	115
322	GO[118]	5247	126	18	115
323	GO[119]	5229	271	18	115
324	GO[120]	5211	126	18	115
325	GO[121]	5193	271	18	115
326	GO[122]	5175	126	18	115
327	GO[123]	5157	271	18	115
328	GO[124]	5139	126	18	115
329	GO[125]	5121	271	18	115
330	GO[126]	5103	126	18	115
331	GO[127]	5085	271	18	115
332	GO[128]	5067	126	18	115
333	GO[129]	5049	271	18	115
334	GO[130]	5031	126	18	115
335	GO[131]	5013	271	18	115
336	GO[132]	4995	126	18	115
337	GO[133]	4977	271	18	115
338	GO[134]	4959	126	18	115
339	GO[135]	4941	271	18	115
340	GO[136]	4923	126	18	115
341	GO[137]	4905	271	18	115
342	GO[138]	4887	126	18	115
343	GO[139]	4869	271	18	115
344	GO[140]	4851	126	18	115
345	GO[141]	4833	271	18	115
346	GO[142]	4815	126	18	115
347	GO[143]	4797	271	18	115
348	GO[144]	4779	126	18	115
349	GO[145]	4761	271	18	115
350	GO[146]	4743	126	18	115

num	name	X	Y	Width	Height
351	GO[147]	4725	271	18	115
352	GO[148]	4707	126	18	115
353	GO[149]	4689	271	18	115
354	GO[150]	4671	126	18	115
355	GO[151]	4653	271	18	115
356	GO[152]	4635	126	18	115
357	GO[153]	4617	271	18	115
358	GO[154]	4599	126	18	115
359	GO[155]	4581	271	18	115
360	GO[156]	4563	126	18	115
361	GO[157]	4545	271	18	115
362	GO[158]	4527	126	18	115
363	GO[159]	4509	271	18	115
364	GO[160]	4491	126	18	115
365	GO[161]	4473	271	18	115
366	GO[162]	4455	126	18	115
367	GO[163]	4437	271	18	115
368	GO[164]	4419	126	18	115
369	GO[165]	4401	271	18	115
370	GO[166]	4383	126	18	115
371	GO[167]	4365	271	18	115
372	GO[168]	4347	126	18	115
373	GO[169]	4329	271	18	115
374	GO[170]	4311	126	18	115
375	GO[171]	4293	271	18	115
376	GO[172]	4275	126	18	115
377	GO[173]	4257	271	18	115
378	GO[174]	4239	126	18	115
379	GO[175]	4221	271	18	115
380	GO[176]	4203	126	18	115
381	GO[177]	4185	271	18	115
382	GO[178]	4167	126	18	115
383	GO[179]	4149	271	18	115
384	GO[180]	4131	126	18	115
385	GO[181]	4113	271	18	115
386	GO[182]	4095	126	18	115
387	GO[183]	4077	271	18	115
388	GO[184]	4059	126	18	115
389	GO[185]	4041	271	18	115
390	GO[186]	4023	126	18	115
391	GO[187]	4005	271	18	115
392	GO[188]	3987	126	18	115
393	GO[189]	3969	271	18	115
394	GO[190]	3951	126	18	115
395	GO[191]	3933	271	18	115
396	GO[192]	3915	126	18	115
397	GO[193]	3897	271	18	115
398	GO[194]	3879	126	18	115
399	GO[195]	3861	271	18	115
400	GO[196]	3843	126	18	115

num	name	X	Y	Width	Height	num	name	X	Y	Width	Height
401	GO[197]	3825	271	18	115	451	GO[241]	2925	271	18	115
402	GO[198]	3807	126	18	115	452	GO[242]	2907	126	18	115
403	GO[199]	3789	271	18	115	453	GO[243]	2889	271	18	115
404	GO[200]	3771	126	18	115	454	GO[244]	2871	126	18	115
405	DUMMY2[1]	3753	271	18	115	455	GO[245]	2853	271	18	115
406	DUMMY2[2]	3735	126	18	115	456	GO[246]	2835	126	18	115
407	DUMMY2[3]	3717	271	18	115	457	GO[247]	2817	271	18	115
408	DUMMY2[4]	3699	126	18	115	458	GO[248]	2799	126	18	115
409	DUMMY2[5]	3681	271	18	115	459	GO[249]	2781	271	18	115
410	DUMMY2[6]	3663	126	18	115	460	GO[250]	2763	126	18	115
411	GO[201]	3645	271	18	115	461	GO[251]	2745	271	18	115
412	GO[202]	3627	126	18	115	462	GO[252]	2727	126	18	115
413	GO[203]	3609	271	18	115	463	GO[253]	2709	271	18	115
414	GO[204]	3591	126	18	115	464	GO[254]	2691	126	18	115
415	GO[205]	3573	271	18	115	465	GO[255]	2673	271	18	115
416	GO[206]	3555	126	18	115	466	GO[256]	2655	126	18	115
417	GO[207]	3537	271	18	115	467	GO[257]	2637	271	18	115
418	GO[208]	3519	126	18	115	468	GO[258]	2619	126	18	115
419	GO[209]	3501	271	18	115	469	GO[259]	2601	271	18	115
420	GO[210]	3483	126	18	115	470	GO[260]	2583	126	18	115
421	GO[211]	3465	271	18	115	471	GO[261]	2565	271	18	115
422	GO[212]	3447	126	18	115	472	GO[262]	2547	126	18	115
423	GO[213]	3429	271	18	115	473	GO[263]	2529	271	18	115
424	GO[214]	3411	126	18	115	474	GO[264]	2511	126	18	115
425	GO[215]	3393	271	18	115	475	GO[265]	2493	271	18	115
426	GO[216]	3375	126	18	115	476	GO[266]	2475	126	18	115
427	GO[217]	3357	271	18	115	477	GO[267]	2457	271	18	115
428	GO[218]	3339	126	18	115	478	GO[268]	2439	126	18	115
429	GO[219]	3321	271	18	115	479	GO[269]	2421	271	18	115
430	GO[220]	3303	126	18	115	480	GO[270]	2403	126	18	115
431	GO[221]	3285	271	18	115	481	GO[271]	2385	271	18	115
432	GO[222]	3267	126	18	115	482	GO[272]	2367	126	18	115
433	GO[223]	3249	271	18	115	483	GO[273]	2349	271	18	115
434	GO[224]	3231	126	18	115	484	GO[274]	2331	126	18	115
435	GO[225]	3213	271	18	115	485	GO[275]	2313	271	18	115
436	GO[226]	3195	126	18	115	486	GO[276]	2295	126	18	115
437	GO[227]	3177	271	18	115	487	GO[277]	2277	271	18	115
438	GO[228]	3159	126	18	115	488	GO[278]	2259	126	18	115
439	GO[229]	3141	271	18	115	489	GO[279]	2241	271	18	115
440	GO[230]	3123	126	18	115	490	GO[280]	2223	126	18	115
441	GO[231]	3105	271	18	115	491	GO[281]	2205	271	18	115
442	GO[232]	3087	126	18	115	492	GO[282]	2187	126	18	115
443	GO[233]	3069	271	18	115	493	GO[283]	2169	271	18	115
444	GO[234]	3051	126	18	115	494	GO[284]	2151	126	18	115
445	GO[235]	3033	271	18	115	495	GO[285]	2133	271	18	115
446	GO[236]	3015	126	18	115	496	GO[286]	2115	126	18	115
447	GO[237]	2997	271	18	115	497	GO[287]	2097	271	18	115
448	GO[238]	2979	126	18	115	498	GO[288]	2079	126	18	115
449	GO[239]	2961	271	18	115	499	GO[289]	2061	271	18	115
450	GO[240]	2943	126	18	115	500	GO[290]	2043	126	18	115

num	name	X	Y	Width	Height
501	GO[291]	2025	271	18	115
502	GO[292]	2007	126	18	115
503	GO[293]	1989	271	18	115
504	GO[294]	1971	126	18	115
505	GO[295]	1953	271	18	115
506	GO[296]	1935	126	18	115
507	GO[297]	1917	271	18	115
508	GO[298]	1899	126	18	115
509	GO[299]	1881	271	18	115
510	GO[300]	1863	126	18	115
511	GO[301]	1845	271	18	115
512	GO[302]	1827	126	18	115
513	GO[303]	1809	271	18	115
514	GO[304]	1791	126	18	115
515	GO[305]	1773	271	18	115
516	GO[306]	1755	126	18	115
517	GO[307]	1737	271	18	115
518	GO[308]	1719	126	18	115
519	GO[309]	1701	271	18	115
520	GO[310]	1683	126	18	115
521	GO[311]	1665	271	18	115
522	GO[312]	1647	126	18	115
523	GO[313]	1629	271	18	115
524	GO[314]	1611	126	18	115
525	GO[315]	1593	271	18	115
526	GO[316]	1575	126	18	115
527	GO[317]	1557	271	18	115
528	GO[318]	1539	126	18	115
529	GO[319]	1521	271	18	115
530	GO[320]	1503	126	18	115
531	GO[321]	1485	271	18	115
532	GO[322]	1467	126	18	115
533	GO[323]	1449	271	18	115
534	GO[324]	1431	126	18	115
535	GO[325]	1413	271	18	115
536	GO[326]	1395	126	18	115
537	GO[327]	1377	271	18	115
538	GO[328]	1359	126	18	115
539	GO[329]	1341	271	18	115
540	GO[330]	1323	126	18	115
541	GO[331]	1305	271	18	115
542	GO[332]	1287	126	18	115
543	GO[333]	1269	271	18	115
544	GO[334]	1251	126	18	115
545	GO[335]	1233	271	18	115
546	GO[336]	1215	126	18	115
547	GO[337]	1197	271	18	115
548	GO[338]	1179	126	18	115
549	GO[339]	1161	271	18	115
550	GO[340]	1143	126	18	115

num	name	X	Y	Width	Height
551	GO[341]	1125	271	18	115
552	GO[342]	1107	126	18	115
553	GO[343]	1089	271	18	115
554	GO[344]	1071	126	18	115
555	GO[345]	1053	271	18	115
556	GO[346]	1035	126	18	115
557	GO[347]	1017	271	18	115
558	GO[348]	999	126	18	115
559	GO[349]	981	271	18	115
560	GO[350]	963	126	18	115
561	GO[351]	945	271	18	115
562	GO[352]	927	126	18	115
563	GO[353]	909	271	18	115
564	GO[354]	891	126	18	115
565	GO[355]	873	271	18	115
566	GO[356]	855	126	18	115
567	GO[357]	837	271	18	115
568	GO[358]	819	126	18	115
569	GO[359]	801	271	18	115
570	GO[360]	783	126	18	115
571	GO[361]	765	271	18	115
572	GO[362]	747	126	18	115
573	GO[363]	729	271	18	115
574	GO[364]	711	126	18	115
575	GO[365]	693	271	18	115
576	GO[366]	675	126	18	115
577	GO[367]	657	271	18	115
578	GO[368]	639	126	18	115
579	GO[369]	621	271	18	115
580	GO[370]	603	126	18	115
581	GO[371]	585	271	18	115
582	GO[372]	567	126	18	115
583	GO[373]	549	271	18	115
584	GO[374]	531	126	18	115
585	GO[375]	513	271	18	115
586	GO[376]	495	126	18	115
587	GO[377]	477	271	18	115
588	GO[378]	459	126	18	115
589	GO[379]	441	271	18	115
590	GO[380]	423	126	18	115
591	GO[381]	405	271	18	115
592	GO[382]	387	126	18	115
593	GO[383]	369	271	18	115
594	GO[384]	351	126	18	115
595	GO[385]	333	271	18	115
596	GO[386]	315	126	18	115
597	GO[387]	297	271	18	115
598	GO[388]	279	126	18	115
599	GO[389]	261	271	18	115
600	GO[390]	243	126	18	115

num	name	X	Y	Width	Height
601	GO[391]	225	271	18	115
602	GO[392]	207	126	18	115
603	GO[393]	189	271	18	115
604	GO[394]	171	126	18	115
605	GO[395]	153	271	18	115
606	GO[396]	135	126	18	115
607	GO[397]	117	271	18	115
608	GO[398]	99	126	18	115
609	GO[399]	81	271	18	115
610	GO[400]	63	126	18	115
611	DUMMY3[1]	45	271	18	115
612	DUMMY3[2]	27	126	18	115
613	DUMMY3[3]	9	271	18	115
614	DUMMY3[4]	-9	126	18	115
615	DUMMY3[5]	-27	271	18	115
616	DUMMY3[6]	-45	126	18	115
617	GO[401]	-63	271	18	115
618	GO[402]	-81	126	18	115
619	GO[403]	-99	271	18	115
620	GO[404]	-117	126	18	115
621	GO[405]	-135	271	18	115
622	GO[406]	-153	126	18	115
623	GO[407]	-171	271	18	115
624	GO[408]	-189	126	18	115
625	GO[409]	-207	271	18	115
626	GO[410]	-225	126	18	115
627	GO[411]	-243	271	18	115
628	GO[412]	-261	126	18	115
629	GO[413]	-279	271	18	115
630	GO[414]	-297	126	18	115
631	GO[415]	-315	271	18	115
632	GO[416]	-333	126	18	115
633	GO[417]	-351	271	18	115
634	GO[418]	-369	126	18	115
635	GO[419]	-387	271	18	115
636	GO[420]	-405	126	18	115
637	GO[421]	-423	271	18	115
638	GO[422]	-441	126	18	115
639	GO[423]	-459	271	18	115
640	GO[424]	-477	126	18	115
641	GO[425]	-495	271	18	115
642	GO[426]	-513	126	18	115
643	GO[427]	-531	271	18	115
644	GO[428]	-549	126	18	115
645	GO[429]	-567	271	18	115
646	GO[430]	-585	126	18	115
647	GO[431]	-603	271	18	115
648	GO[432]	-621	126	18	115
649	GO[433]	-639	271	18	115
650	GO[434]	-657	126	18	115

num	name	X	Y	Width	Height
651	GO[435]	-675	271	18	115
652	GO[436]	-693	126	18	115
653	GO[437]	-711	271	18	115
654	GO[438]	-729	126	18	115
655	GO[439]	-747	271	18	115
656	GO[440]	-765	126	18	115
657	GO[441]	-783	271	18	115
658	GO[442]	-801	126	18	115
659	GO[443]	-819	271	18	115
660	GO[444]	-837	126	18	115
661	GO[445]	-855	271	18	115
662	GO[446]	-873	126	18	115
663	GO[447]	-891	271	18	115
664	GO[448]	-909	126	18	115
665	GO[449]	-927	271	18	115
666	GO[450]	-945	126	18	115
667	GO[451]	-963	271	18	115
668	GO[452]	-981	126	18	115
669	GO[453]	-999	271	18	115
670	GO[454]	-1017	126	18	115
671	GO[455]	-1035	271	18	115
672	GO[456]	-1053	126	18	115
673	GO[457]	-1071	271	18	115
674	GO[458]	-1089	126	18	115
675	GO[459]	-1107	271	18	115
676	GO[460]	-1125	126	18	115
677	GO[461]	-1143	271	18	115
678	GO[462]	-1161	126	18	115
679	GO[463]	-1179	271	18	115
680	GO[464]	-1197	126	18	115
681	GO[465]	-1215	271	18	115
682	GO[466]	-1233	126	18	115
683	GO[467]	-1251	271	18	115
684	GO[468]	-1269	126	18	115
685	GO[469]	-1287	271	18	115
686	GO[470]	-1305	126	18	115
687	GO[471]	-1323	271	18	115
688	GO[472]	-1341	126	18	115
689	GO[473]	-1359	271	18	115
690	GO[474]	-1377	126	18	115
691	GO[475]	-1395	271	18	115
692	GO[476]	-1413	126	18	115
693	GO[477]	-1431	271	18	115
694	GO[478]	-1449	126	18	115
695	GO[479]	-1467	271	18	115
696	GO[480]	-1485	126	18	115
697	GO[481]	-1503	271	18	115
698	GO[482]	-1521	126	18	115
699	GO[483]	-1539	271	18	115
700	GO[484]	-1557	126	18	115

num	name	X	Y	Width	Height
701	GO[485]	-1575	271	18	115
702	GO[486]	-1593	126	18	115
703	GO[487]	-1611	271	18	115
704	GO[488]	-1629	126	18	115
705	GO[489]	-1647	271	18	115
706	GO[490]	-1665	126	18	115
707	GO[491]	-1683	271	18	115
708	GO[492]	-1701	126	18	115
709	GO[493]	-1719	271	18	115
710	GO[494]	-1737	126	18	115
711	GO[495]	-1755	271	18	115
712	GO[496]	-1773	126	18	115
713	GO[497]	-1791	271	18	115
714	GO[498]	-1809	126	18	115
715	GO[499]	-1827	271	18	115
716	GO[500]	-1845	126	18	115
717	GO[501]	-1863	271	18	115
718	GO[502]	-1881	126	18	115
719	GO[503]	-1899	271	18	115
720	GO[504]	-1917	126	18	115
721	GO[505]	-1935	271	18	115
722	GO[506]	-1953	126	18	115
723	GO[507]	-1971	271	18	115
724	GO[508]	-1989	126	18	115
725	GO[509]	-2007	271	18	115
726	GO[510]	-2025	126	18	115
727	GO[511]	-2043	271	18	115
728	GO[512]	-2061	126	18	115
729	GO[513]	-2079	271	18	115
730	GO[514]	-2097	126	18	115
731	GO[515]	-2115	271	18	115
732	GO[516]	-2133	126	18	115
733	GO[517]	-2151	271	18	115
734	GO[518]	-2169	126	18	115
735	GO[519]	-2187	271	18	115
736	GO[520]	-2205	126	18	115
737	GO[521]	-2223	271	18	115
738	GO[522]	-2241	126	18	115
739	GO[523]	-2259	271	18	115
740	GO[524]	-2277	126	18	115
741	GO[525]	-2295	271	18	115
742	GO[526]	-2313	126	18	115
743	GO[527]	-2331	271	18	115
744	GO[528]	-2349	126	18	115
745	GO[529]	-2367	271	18	115
746	GO[530]	-2385	126	18	115
747	GO[531]	-2403	271	18	115
748	GO[532]	-2421	126	18	115
749	GO[533]	-2439	271	18	115
750	GO[534]	-2457	126	18	115

num	name	X	Y	Width	Height
751	GO[535]	-2475	271	18	115
752	GO[536]	-2493	126	18	115
753	GO[537]	-2511	271	18	115
754	GO[538]	-2529	126	18	115
755	GO[539]	-2547	271	18	115
756	GO[540]	-2565	126	18	115
757	GO[541]	-2583	271	18	115
758	GO[542]	-2601	126	18	115
759	GO[543]	-2619	271	18	115
760	GO[544]	-2637	126	18	115
761	GO[545]	-2655	271	18	115
762	GO[546]	-2673	126	18	115
763	GO[547]	-2691	271	18	115
764	GO[548]	-2709	126	18	115
765	GO[549]	-2727	271	18	115
766	GO[550]	-2745	126	18	115
767	GO[551]	-2763	271	18	115
768	GO[552]	-2781	126	18	115
769	GO[553]	-2799	271	18	115
770	GO[554]	-2817	126	18	115
771	GO[555]	-2835	271	18	115
772	GO[556]	-2853	126	18	115
773	GO[557]	-2871	271	18	115
774	GO[558]	-2889	126	18	115
775	GO[559]	-2907	271	18	115
776	GO[560]	-2925	126	18	115
777	GO[561]	-2943	271	18	115
778	GO[562]	-2961	126	18	115
779	GO[563]	-2979	271	18	115
780	GO[564]	-2997	126	18	115
781	GO[565]	-3015	271	18	115
782	GO[566]	-3033	126	18	115
783	GO[567]	-3051	271	18	115
784	GO[568]	-3069	126	18	115
785	GO[569]	-3087	271	18	115
786	GO[570]	-3105	126	18	115
787	GO[571]	-3123	271	18	115
788	GO[572]	-3141	126	18	115
789	GO[573]	-3159	271	18	115
790	GO[574]	-3177	126	18	115
791	GO[575]	-3195	271	18	115
792	GO[576]	-3213	126	18	115
793	GO[577]	-3231	271	18	115
794	GO[578]	-3249	126	18	115
795	GO[579]	-3267	271	18	115
796	GO[580]	-3285	126	18	115
797	GO[581]	-3303	271	18	115
798	GO[582]	-3321	126	18	115
799	GO[583]	-3339	271	18	115
800	GO[584]	-3357	126	18	115

num	name	X	Y	Width	Height
801	GO[585]	-3375	271	18	115
802	GO[586]	-3393	126	18	115
803	GO[587]	-3411	271	18	115
804	GO[588]	-3429	126	18	115
805	GO[589]	-3447	271	18	115
806	GO[590]	-3465	126	18	115
807	GO[591]	-3483	271	18	115
808	GO[592]	-3501	126	18	115
809	GO[593]	-3519	271	18	115
810	GO[594]	-3537	126	18	115
811	GO[595]	-3555	271	18	115
812	GO[596]	-3573	126	18	115
813	GO[597]	-3591	271	18	115
814	GO[598]	-3609	126	18	115
815	GO[599]	-3627	271	18	115
816	GO[600]	-3645	126	18	115
817	DUMMY4[1]	-3663	271	18	115
818	DUMMY4[2]	-3681	126	18	115
819	DUMMY4[3]	-3699	271	18	115
820	DUMMY4[4]	-3717	126	18	115
821	DUMMY4[5]	-3735	271	18	115
822	DUMMY4[6]	-3753	126	18	115
823	GO[601]	-3771	271	18	115
824	GO[602]	-3789	126	18	115
825	GO[603]	-3807	271	18	115
826	GO[604]	-3825	126	18	115
827	GO[605]	-3843	271	18	115
828	GO[606]	-3861	126	18	115
829	GO[607]	-3879	271	18	115
830	GO[608]	-3897	126	18	115
831	GO[609]	-3915	271	18	115
832	GO[610]	-3933	126	18	115
833	GO[611]	-3951	271	18	115
834	GO[612]	-3969	126	18	115
835	GO[613]	-3987	271	18	115
836	GO[614]	-4005	126	18	115
837	GO[615]	-4023	271	18	115
838	GO[616]	-4041	126	18	115
839	GO[617]	-4059	271	18	115
840	GO[618]	-4077	126	18	115
841	GO[619]	-4095	271	18	115
842	GO[620]	-4113	126	18	115
843	GO[621]	-4131	271	18	115
844	GO[622]	-4149	126	18	115
845	GO[623]	-4167	271	18	115
846	GO[624]	-4185	126	18	115
847	GO[625]	-4203	271	18	115
848	GO[626]	-4221	126	18	115
849	GO[627]	-4239	271	18	115
850	GO[628]	-4257	126	18	115

num	name	X	Y	Width	Height
851	GO[629]	-4275	271	18	115
852	GO[630]	-4293	126	18	115
853	GO[631]	-4311	271	18	115
854	GO[632]	-4329	126	18	115
855	GO[633]	-4347	271	18	115
856	GO[634]	-4365	126	18	115
857	GO[635]	-4383	271	18	115
858	GO[636]	-4401	126	18	115
859	GO[637]	-4419	271	18	115
860	GO[638]	-4437	126	18	115
861	GO[639]	-4455	271	18	115
862	GO[640]	-4473	126	18	115
863	GO[641]	-4491	271	18	115
864	GO[642]	-4509	126	18	115
865	GO[643]	-4527	271	18	115
866	GO[644]	-4545	126	18	115
867	GO[645]	-4563	271	18	115
868	GO[646]	-4581	126	18	115
869	GO[647]	-4599	271	18	115
870	GO[648]	-4617	126	18	115
871	GO[649]	-4635	271	18	115
872	GO[650]	-4653	126	18	115
873	GO[651]	-4671	271	18	115
874	GO[652]	-4689	126	18	115
875	GO[653]	-4707	271	18	115
876	GO[654]	-4725	126	18	115
877	GO[655]	-4743	271	18	115
878	GO[656]	-4761	126	18	115
879	GO[657]	-4779	271	18	115
880	GO[658]	-4797	126	18	115
881	GO[659]	-4815	271	18	115
882	GO[660]	-4833	126	18	115
883	GO[661]	-4851	271	18	115
884	GO[662]	-4869	126	18	115
885	GO[663]	-4887	271	18	115
886	GO[664]	-4905	126	18	115
887	GO[665]	-4923	271	18	115
888	GO[666]	-4941	126	18	115
889	GO[667]	-4959	271	18	115
890	GO[668]	-4977	126	18	115
891	GO[669]	-4995	271	18	115
892	GO[670]	-5013	126	18	115
893	GO[671]	-5031	271	18	115
894	GO[672]	-5049	126	18	115
895	GO[673]	-5067	271	18	115
896	GO[674]	-5085	126	18	115
897	GO[675]	-5103	271	18	115
898	GO[676]	-5121	126	18	115
899	GO[677]	-5139	271	18	115
900	GO[678]	-5157	126	18	115

num	name	X	Y	Width	Height
901	GO[679]	-5175	271	18	115
902	GO[680]	-5193	126	18	115
903	GO[681]	-5211	271	18	115
904	GO[682]	-5229	126	18	115
905	GO[683]	-5247	271	18	115
906	GO[684]	-5265	126	18	115
907	GO[685]	-5283	271	18	115
908	GO[686]	-5301	126	18	115
909	GO[687]	-5319	271	18	115
910	GO[688]	-5337	126	18	115
911	GO[689]	-5355	271	18	115
912	GO[690]	-5373	126	18	115
913	GO[691]	-5391	271	18	115
914	GO[692]	-5409	126	18	115
915	GO[693]	-5427	271	18	115
916	GO[694]	-5445	126	18	115
917	GO[695]	-5463	271	18	115
918	GO[696]	-5481	126	18	115
919	GO[697]	-5499	271	18	115
920	GO[698]	-5517	126	18	115
921	GO[699]	-5535	271	18	115
922	GO[700]	-5553	126	18	115
923	GO[701]	-5571	271	18	115
924	GO[702]	-5589	126	18	115
925	GO[703]	-5607	271	18	115
926	GO[704]	-5625	126	18	115
927	GO[705]	-5643	271	18	115
928	GO[706]	-5661	126	18	115
929	GO[707]	-5679	271	18	115
930	GO[708]	-5697	126	18	115
931	GO[709]	-5715	271	18	115
932	GO[710]	-5733	126	18	115
933	GO[711]	-5751	271	18	115
934	GO[712]	-5769	126	18	115
935	GO[713]	-5787	271	18	115
936	GO[714]	-5805	126	18	115
937	GO[715]	-5823	271	18	115
938	GO[716]	-5841	126	18	115
939	GO[717]	-5859	271	18	115
940	GO[718]	-5877	126	18	115
941	GO[719]	-5895	271	18	115
942	GO[720]	-5913	126	18	115
943	GO[721]	-5931	271	18	115
944	GO[722]	-5949	126	18	115
945	GO[723]	-5967	271	18	115
946	GO[724]	-5985	126	18	115
947	GO[725]	-6003	271	18	115
948	GO[726]	-6021	126	18	115
949	GO[727]	-6039	271	18	115
950	GO[728]	-6057	126	18	115

num	name	X	Y	Width	Height
951	GO[729]	-6075	271	18	115
952	GO[730]	-6093	126	18	115
953	GO[731]	-6111	271	18	115
954	GO[732]	-6129	126	18	115
955	GO[733]	-6147	271	18	115
956	GO[734]	-6165	126	18	115
957	GO[735]	-6183	271	18	115
958	GO[736]	-6201	126	18	115
959	GO[737]	-6219	271	18	115
960	GO[738]	-6237	126	18	115
961	GO[739]	-6255	271	18	115
962	GO[740]	-6273	126	18	115
963	GO[741]	-6291	271	18	115
964	GO[742]	-6309	126	18	115
965	GO[743]	-6327	271	18	115
966	GO[744]	-6345	126	18	115
967	GO[745]	-6363	271	18	115
968	GO[746]	-6381	126	18	115
969	GO[747]	-6399	271	18	115
970	GO[748]	-6417	126	18	115
971	GO[749]	-6435	271	18	115
972	GO[750]	-6453	126	18	115
973	GO[751]	-6471	271	18	115
974	GO[752]	-6489	126	18	115
975	GO[753]	-6507	271	18	115
976	GO[754]	-6525	126	18	115
977	GO[755]	-6543	271	18	115
978	GO[756]	-6561	126	18	115
979	GO[757]	-6579	271	18	115
980	GO[758]	-6597	126	18	115
981	GO[759]	-6615	271	18	115
982	GO[760]	-6633	126	18	115
983	GO[761]	-6651	271	18	115
984	GO[762]	-6669	126	18	115
985	GO[763]	-6687	271	18	115
986	GO[764]	-6705	126	18	115
987	GO[765]	-6723	271	18	115
988	GO[766]	-6741	126	18	115
989	GO[767]	-6759	271	18	115
990	GO[768]	-6777	126	18	115
991	GO[769]	-6795	271	18	115
992	GO[770]	-6813	126	18	115
993	GO[771]	-6831	271	18	115
994	GO[772]	-6849	126	18	115
995	GO[773]	-6867	271	18	115
996	GO[774]	-6885	126	18	115
997	GO[775]	-6903	271	18	115
998	GO[776]	-6921	126	18	115
999	GO[777]	-6939	271	18	115
1000	GO[778]	-6957	126	18	115

num	name	X	Y	Width	Height
1001	GO[779]	-6975	271	18	115
1002	GO[780]	-6993	126	18	115
1003	GO[781]	-7011	271	18	115
1004	GO[782]	-7029	126	18	115
1005	GO[783]	-7047	271	18	115
1006	GO[784]	-7065	126	18	115
1007	GO[785]	-7083	271	18	115
1008	GO[786]	-7101	126	18	115
1009	GO[787]	-7119	271	18	115
1010	GO[788]	-7137	126	18	115
1011	GO[789]	-7155	271	18	115
1012	GO[790]	-7173	126	18	115
1013	GO[791]	-7191	271	18	115
1014	GO[792]	-7209	126	18	115
1015	GO[793]	-7227	271	18	115
1016	GO[794]	-7245	126	18	115
1017	GO[795]	-7263	271	18	115
1018	GO[796]	-7281	126	18	115
1019	GO[797]	-7299	271	18	115
1020	GO[798]	-7317	126	18	115
1021	GO[799]	-7335	271	18	115
1022	GO[800]	-7353	126	18	115
1023	PATH3R	-7371	271	18	115
1024	DUMMY5[1]	-7389	126	18	115
1025	DUMMY5[2]	-7407	271	18	115
1026	DUMMY5[3]	-7425	126	18	115
1027	DUMMY5[4]	-7443	271	18	115
1028	DUMMY5[5]	-7461	126	18	115
1029	DUMMY5[6]	-7479	271	18	115
1030	DUMMY5[7]	-7497	126	18	115
1031	DUMMY5[8]	-7515	271	18	115
1032	ALIGNMENT MARK	-7641.5	262	140	140
1033	GNDS	-7735	303.5	40	50
1034	GNDS	-7795	303.5	40	50
1035	GNDS	-7855	303.5	40	50
1036	GNDS	-7915	303.5	40	50
1037	GSDR	-8055	318.5	120	20
1038	CUTR	-8055	278.5	120	20
1039	XONB	-8055	238.5	120	20
1040	OER	-8055	198.5	120	20

Ordering Information

Part No.	Package
SC5005 – Gx	G: means COG x: means chip thickness 3 = 400um 4 = 300um 5 = 250um 6 = 200um

Revision History

Version	Description of Changes	Page	Date
V1.0	First Release		2016/07/11
V1.1	Revise operating temperature		2017/01/05