



**NOVATEK**  
聯詠科技

# *Data Sheet*

***NT39212F***

***800/768/720 Outputs TFT-LCD Gate Driver***

***Version 0.1***

**INDEX**

INDEX .....	1
REVISION HISTORY .....	2
FEATURES .....	3
GENERAL DESCRIPTIONS .....	3
PIN ASSIGNMENT .....	4
BLOCK DIAGRAM .....	5
PIN DESCRIPTIONS .....	6
FUNCTIONAL DESCRIPTIONS .....	8
START PULSE INPUT LIMITATION .....	10
OUTPUT SEQUENCE & FRAME CONTROL .....	11
ABSOLUTE MAXIMUM RATINGS .....	16
RECOMMENDED OPERATING RANGE .....	16
DC ELECTRICAL CHARACTERISTICS .....	16
AC ELECTRICAL CHARACTERISTICS .....	17
TIMING WAVEFORMS .....	18
CHIP OUTLINE DIMENSIONS .....	20
BONDING DIAGRAM .....	21

NOVATEK CONFIDENTIAL  
NO DISCLOSURE!

**Revision History**

<b>Specification Revision History</b>			
<b>Version</b>	<b>Content</b>	<b>PAGE</b>	<b>Date</b>
0.1	Original	-	2011/05/06

**NOVATEK CONFIDENTIAL  
NO DISCLOSURE!**

## Features

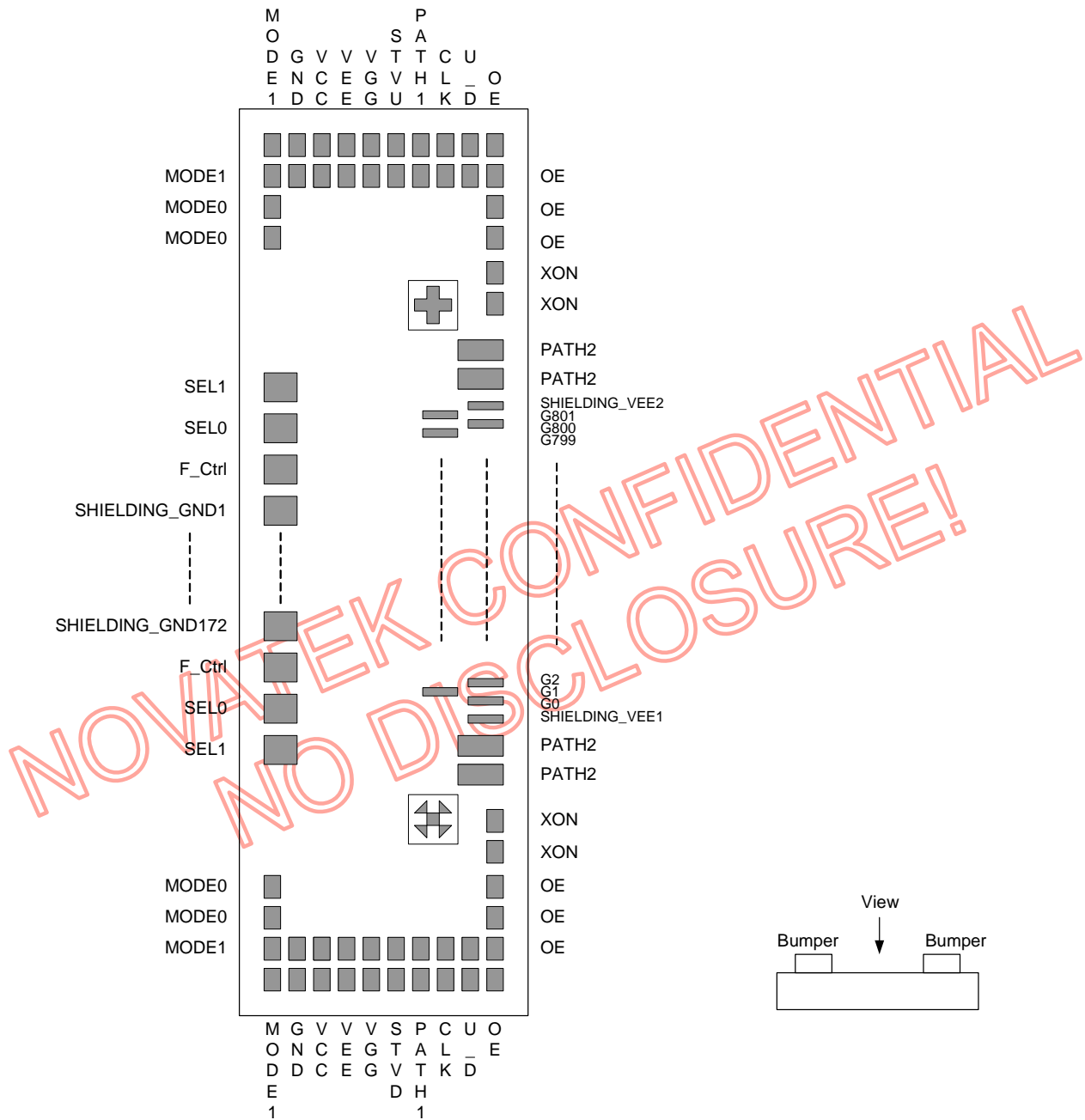
- Gate driver for TFT-LCD panels
- 800/768/720 channel outputs and 2 channel outputs which are fixed to VEE
- Bi-directional shift function
- Driving voltage: VEE + 40V
- 2.3 ~ 3.6V logical interface
- Cascade dot-expansion function
- CMOS silicon gate (P-type)
- COG solution
- Chip size=19130um\*700um, output bump pitch=22um

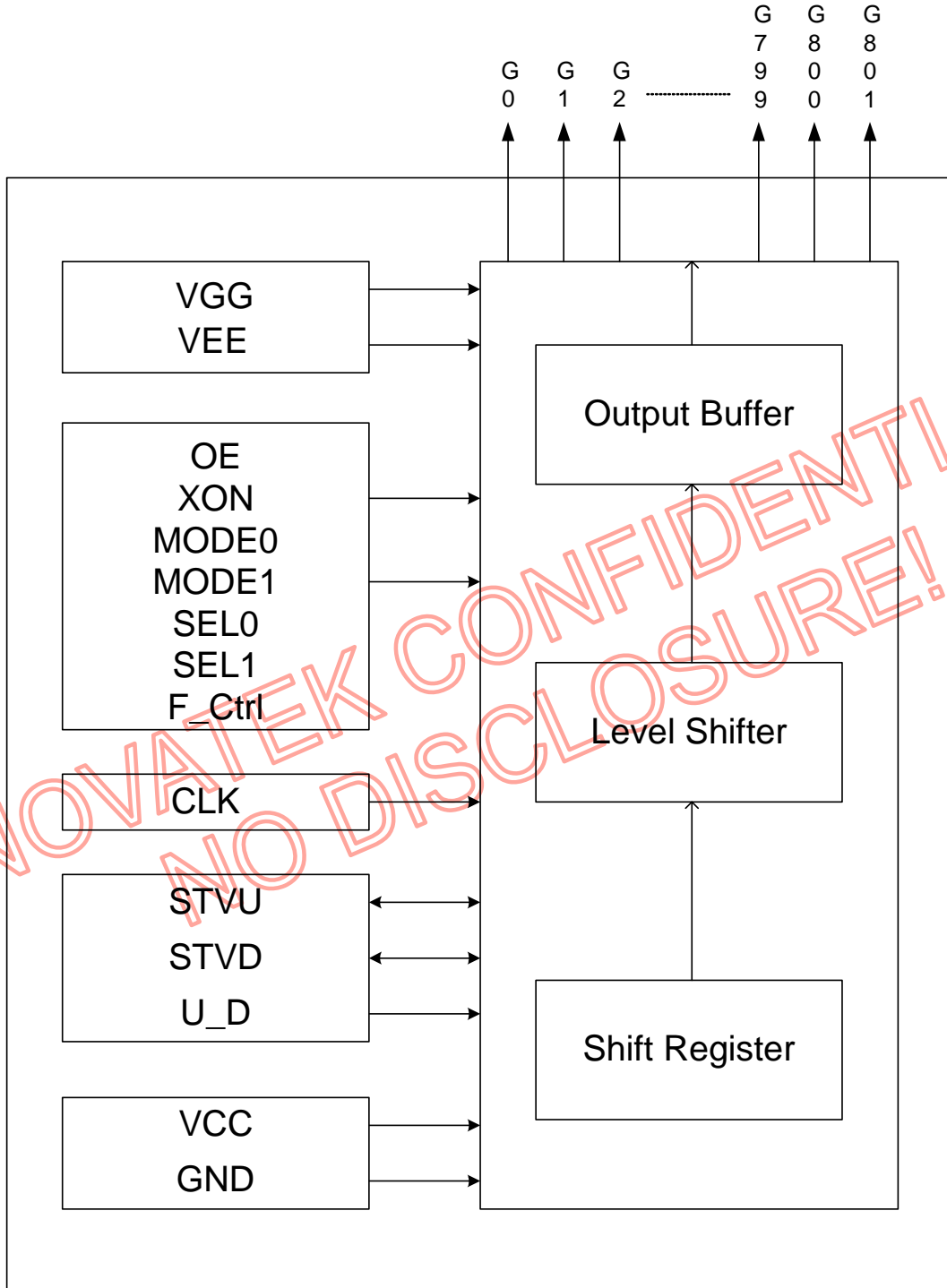
## General Descriptions

It is a dedicated gate driver IC for TFT-LCD panels. After a start pulse is triggered, channel outputs pins will sequentially output high-driving voltage pulses as the gate signals on TFT-LCD panels. This IC also provides shift up/down selection and cascade functions for dot expansion. The special pin location is designed for COG type.

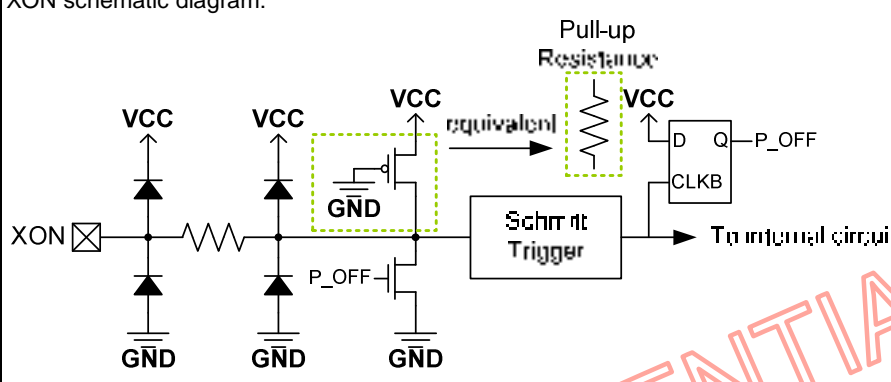
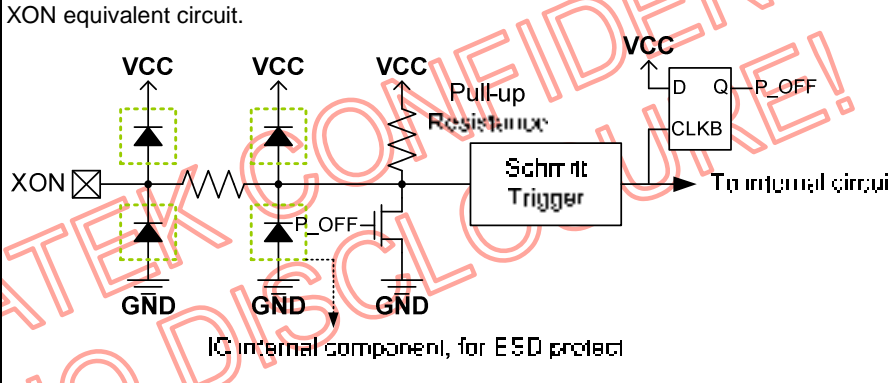
NOVATEK CONFIDENTIAL!  
NO DISCLOSURE!

## Pin Assignment



**Block diagram**


## Pin Descriptions

Symbol	I/O	Description																
XON	I	<p>When XON goes low, all outputs are fixed to VGG. A 200k ohm pull-up resistor is connected between this pin and VCC. XON signal has priority over OE.            Note: This pin should be connected to either "VCC" or "GND".            XON schematic diagram:</p>  <p>XON equivalent circuit.</p>  <p>IC internal component, for ESD protect</p>																
OE	I	<p>These pads are shorted internally, active high.            The driver outputs are disabled, output = VEE, when OE is connected to high "1".            Under this condition, the operation of registers will not be affected.</p>																
U_D	I	<p>Shift up/down control signal            U_D = "H", up shift: STVD (Input) → G1 ~ G800 → STVU (Output)            U_D = "L", down shift: STVU (Input) → G800 ~ G1 → STVD (Output)  <b>*Remark: Internal pulled low</b></p>																
CLK	I	Clock signal for internal shift register.																
MODE0 MODE1	I	<p>Selecting the output mode: 800/768/720 channels, MODE0, MODE1 normally pull-up.            Note: This pin should be connected to either "VCC" or "GND".</p> <table border="1"> <thead> <tr> <th>MODE1</th> <th>MODE0</th> <th>output channels</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>L</td> <td>X</td> <td>768</td> <td>Using G1~G384 and G417~G800 Others are fixed to VGL.</td> </tr> <tr> <td>H</td> <td>L</td> <td>720</td> <td>Using G1~G360 and G441~G800</td> </tr> <tr> <td>H</td> <td>H</td> <td>800</td> <td>Using G1~G800. Default setting</td> </tr> </tbody> </table>	MODE1	MODE0	output channels	Remark	L	X	768	Using G1~G384 and G417~G800 Others are fixed to VGL.	H	L	720	Using G1~G360 and G441~G800	H	H	800	Using G1~G800. Default setting
MODE1	MODE0	output channels	Remark															
L	X	768	Using G1~G384 and G417~G800 Others are fixed to VGL.															
H	L	720	Using G1~G360 and G441~G800															
H	H	800	Using G1~G800. Default setting															
SEL0 SEL1	I	<p>Output sequence control.            This pin controls the driver output sequence. Normally pull down.  <b>*Remark: Internal pulled low</b></p>																

			SEL1	SEL0	Scan type		
			X	L	Z		
			L	H	Z		
			H	H	Z+ Z		
F_Ctrl	I	Frame control. This pin decides to inverse the output sequence or not in odd or even frame. <b>*Remark: Internal pulled low</b>					
			Frame	F_Ctrl			
			Odd	L			
			Even	H			
PATH1 PATH2	S	Internally connected together					
STVD	I/O	This pin operates as an input pin under the condition of U_D = "H" and receives a pulse signal; this pin operates as an output pin under the condition of U_D="L" and send a pulse signal. Please refer to the descriptions of "STVU" and "U_D".					
VGG	P	Positive power supply for G1 ~ G800 outputs					
VEE	P	Negative power supply for G0 ~ G801 outputs					
VCC	P	Power supply for digital circuits					
GND	P	Ground					
STVU	I/O	This pin operates as an input pin under the condition of U_D = "L" and receives a pulse signal; this pin operates as an output pin under the condition of U_D="H" and send a pulse signal. Please refer to the descriptions of "STVD" and "U_D".					
G1 ~ G800	O	Pulse signals for driving the gates on TFT-LCD VGG minus VEE is the amplitude of G1 ~ G800. The timing of G1 ~ G800 is synchronous with the rising edge of the shift clock CLK.					
G0, G801	O	Auxiliary pins. Regardless of shift data, G0 and G801 always output the potential of VEE.					
SHIELDING_ GND1 ~ SHIELDING_ GND172	SD	This pin is connected to GND internally. Not connected.					
SHIELDING_ VEE1 ~ SHIELDING_ VEE2	SD	This pin is connected to VEE internally. Not connected.					

Note1: I: Input; O: Output; I/O: Input/Output; P: Power; S: Shorted line; SD: Shielding pad;

Note2: The unused input pins are recommended that this pin be connected to either VCC or GND.

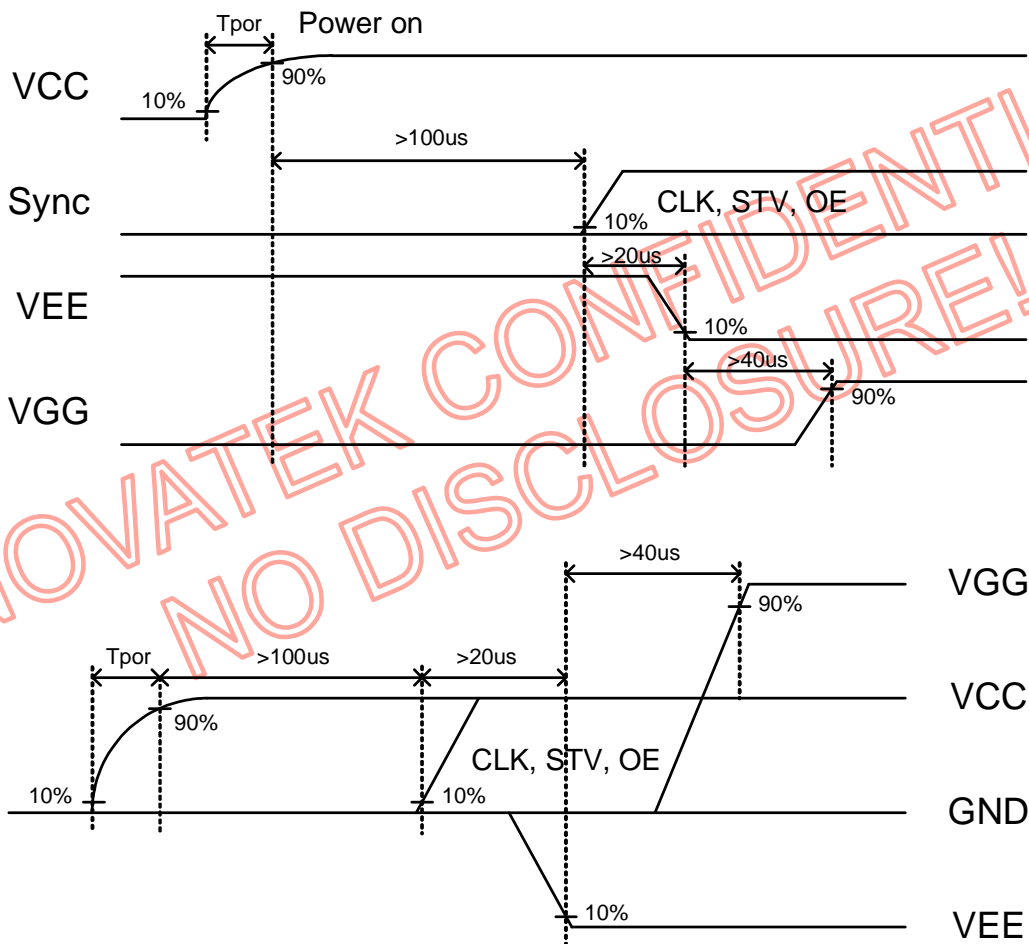


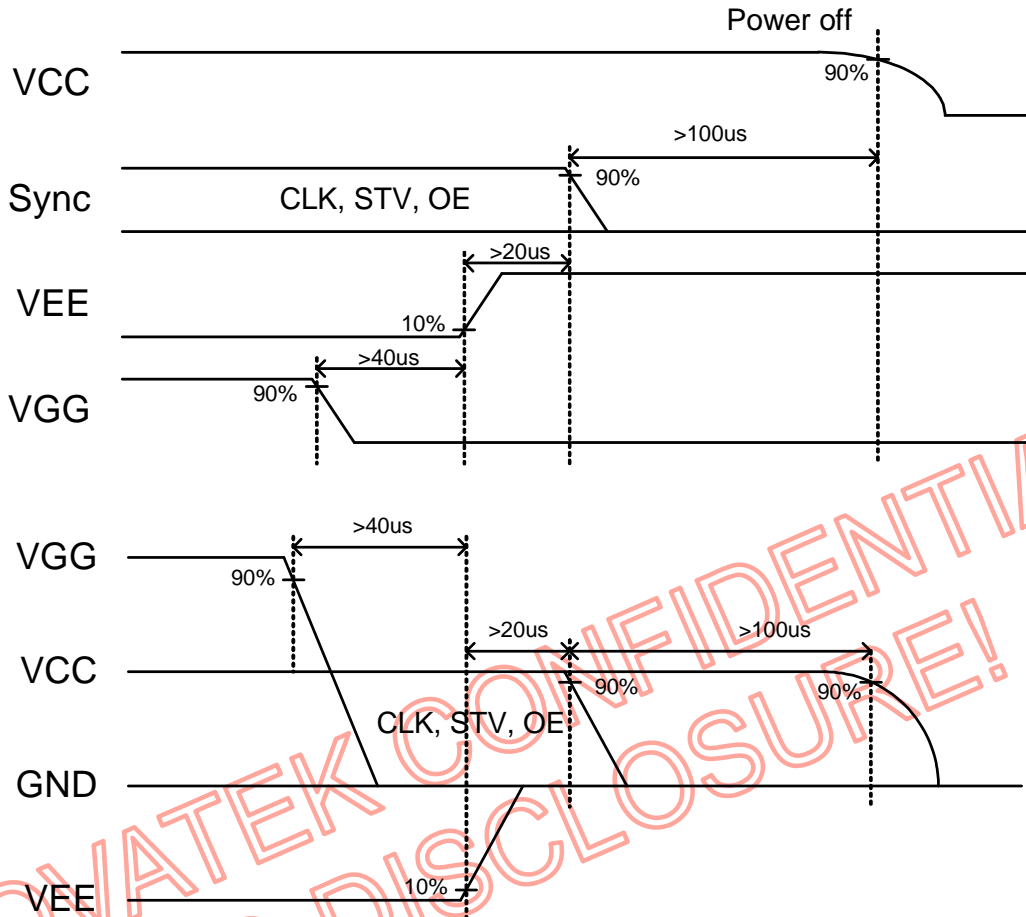
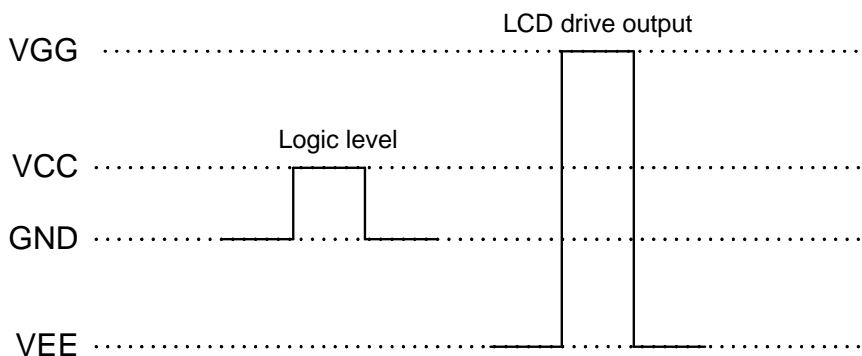
## Functional Descriptions

### 1. Power on/off sequence:

This IC is a high-voltage LCD driver, so it may be damaged by a large current flow if an incorrect power sequence is used. Connecting the drive powers, VEE & VGG, after the logical power, VCC, is the recommended sequence. When shutting off the power, shut off the drive power and then the logic system or turn off all power simultaneously.

#### ■ Power on sequence

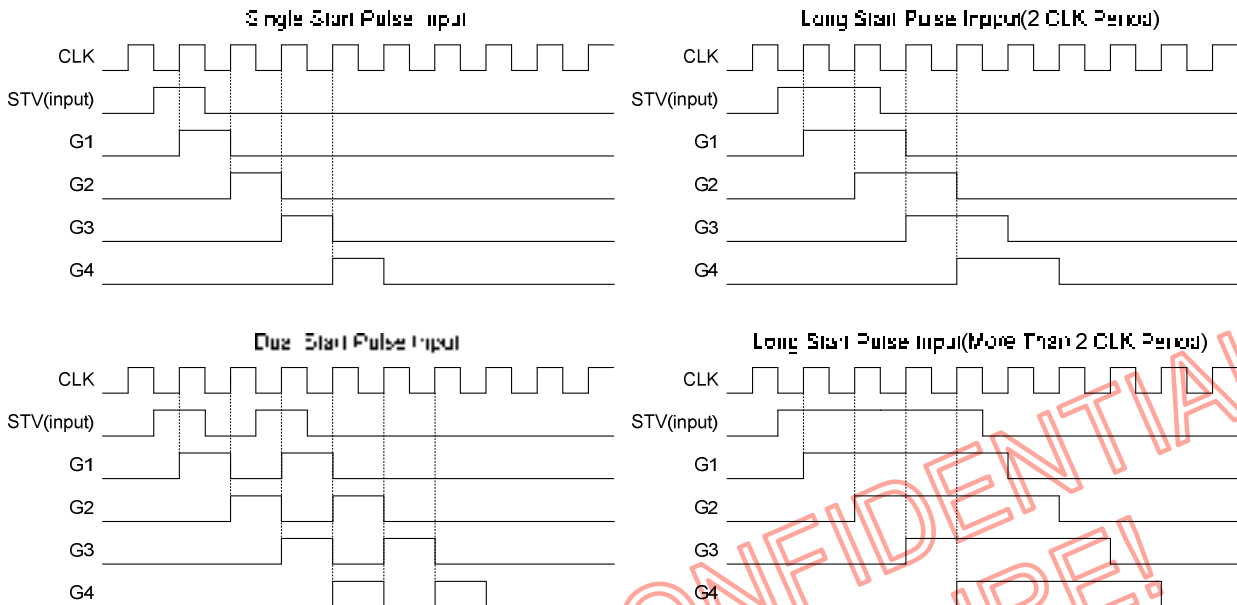


**■ Power off sequence**

**2. Power level:**


Note3: For the input signals: CLK, XON, OE, U\_D, STVD & STVU, MODE, "High" level=VCC, "Low" level=GND

## Start Pulse Input Limitation

The available start pulse is in the following diagram.



Note4: However the start pulse form changes, gate output keeps output sequentially.

Note5: For Dual Start Pulse input, the space of STV between two pulses must be 1 CLK period.

NOVATEK CONFIDENTIAL  
NO DISCLOSURE!

## Output Sequence & Frame Control

### 1. Output Sequence Control

#### U\_D=H

SEL1	SEL0	F_Ctrl	Scan type	Output Sequence
X	L	0	Z	1→2→3→4→5→6→7→8→...797→798→799→800 (Note 1)
		1	Inverse Z	2→1→4→3→6→5→8→7→...798→797→800→799 (Note 2)
L	H	0	Z	1→2→4→3→5→6→8→7→...797→798→800→799 (Note 3)
		1	Inverse Z	2→1→3→4→6→5→7→8→...798→797→799→800
H	H	0	Z+Z	1→2→3→4→6→5→8→7→...798→797→800→799 (Note 4)
		1	Inverse (Z+Z)	2→1→4→3→5→6→7→8→...797→798→799→800

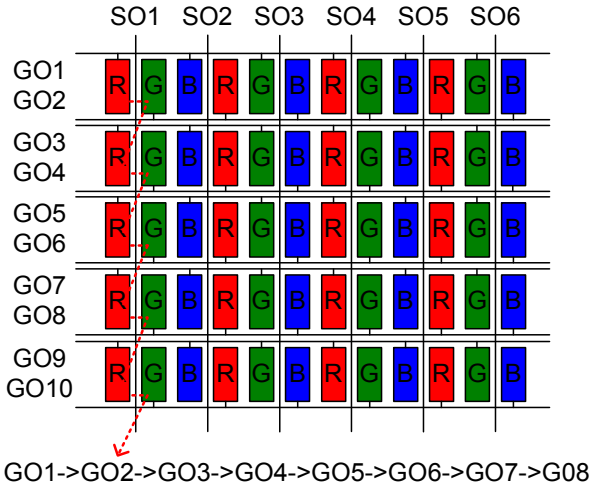
#### U\_D=L

SEL1	SEL0	F_Ctrl	Scan type	Output Sequence
X	L	0	Z	800→799→798→797→...8→7→6→5→4→3→2→1
		1	Inverse Z	799→800→797→798→...7→8→5→6→3→4→1→2
L	H	0	Z	800→799→797→798→...8→7→5→6→4→3→1→2
		1	Inverse Z	799→800→798→797→...7→8→6→5→3→4→2→1
H	H	0	Z+Z	800→799→798→797→...8→7→6→5→3→4→1→2
		1	Inverse (Z+Z)	799→800→797→798→...7→8→5→6→4→3→2→1

NOVATEK CONFIDENTIAL  
NO DISCLOSURE!

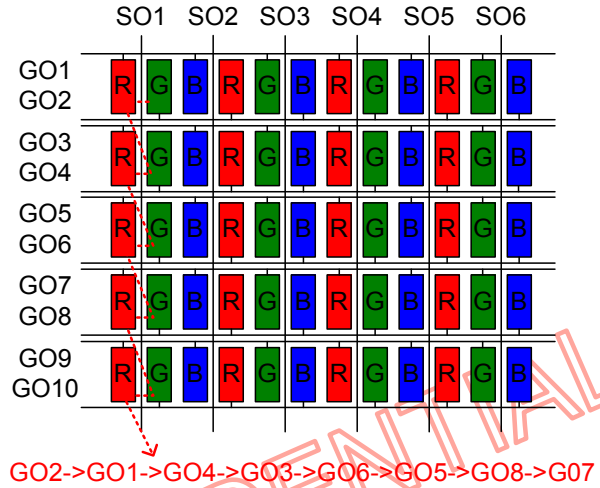
Note 1:

SEL0=0,SEL1=X,F\_ctrl=0



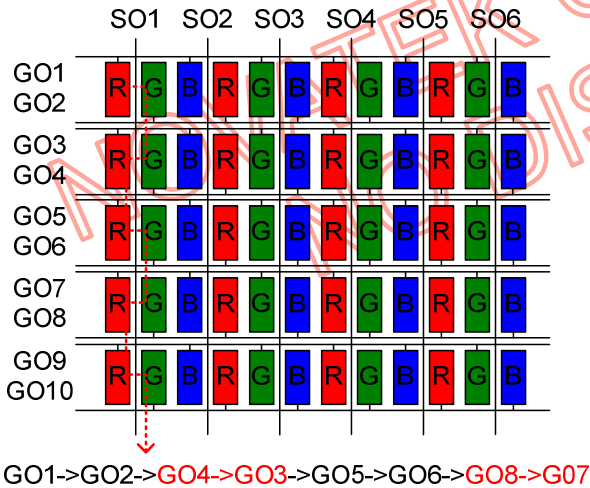
Note 2:

SEL0=0,SEL1=X,F\_ctrl=1



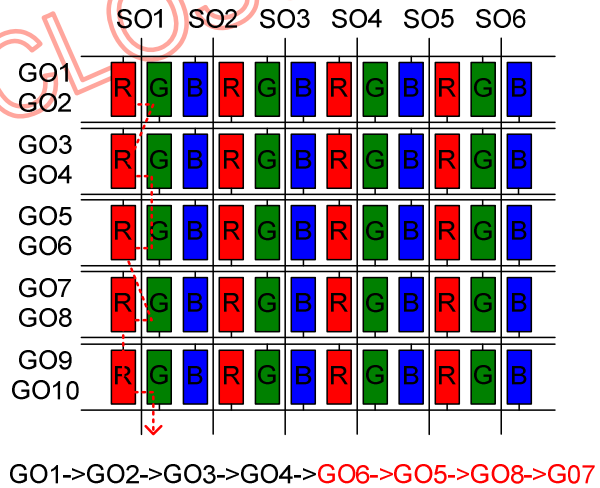
Note 3:

SEL0=1,SEL1=0,F\_ctrl=0



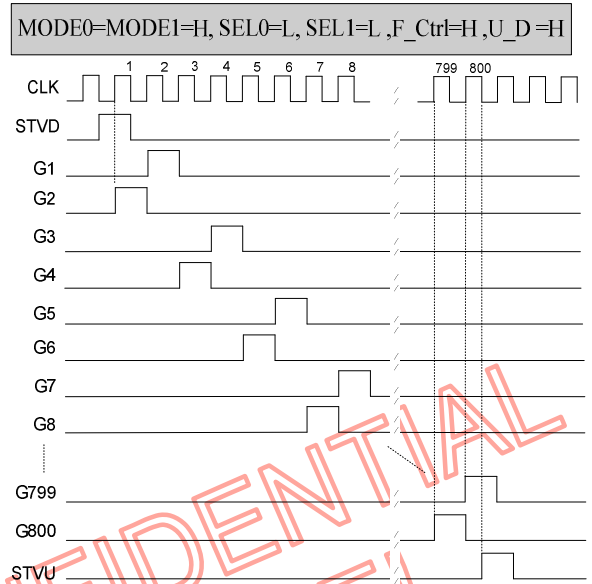
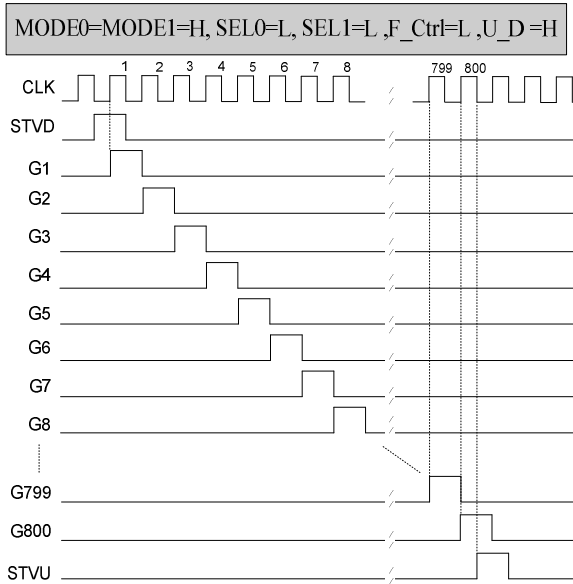
Note 4:

SEL0=1,SEL1=1,F\_ctrl=0

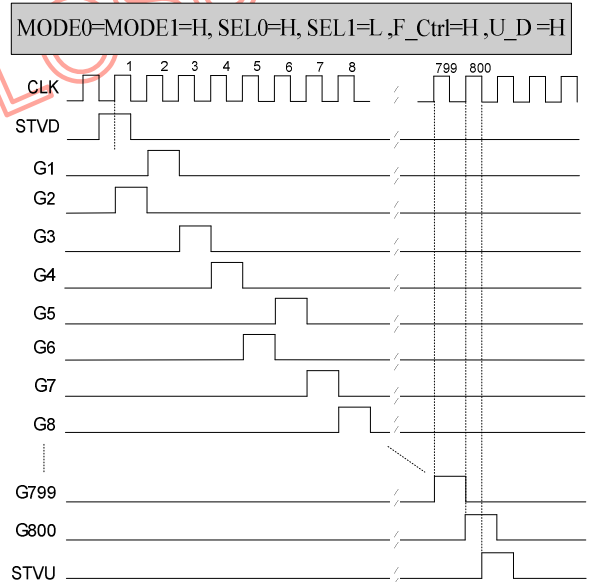
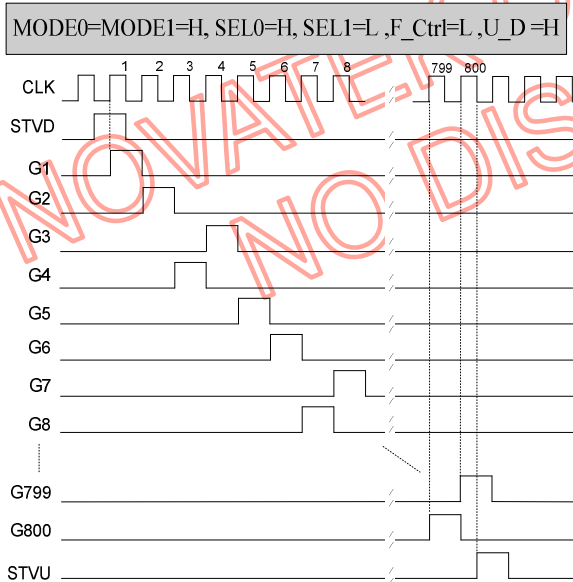


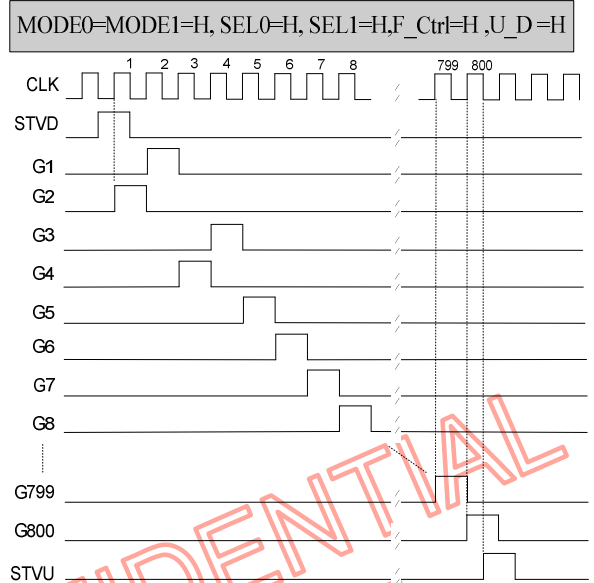
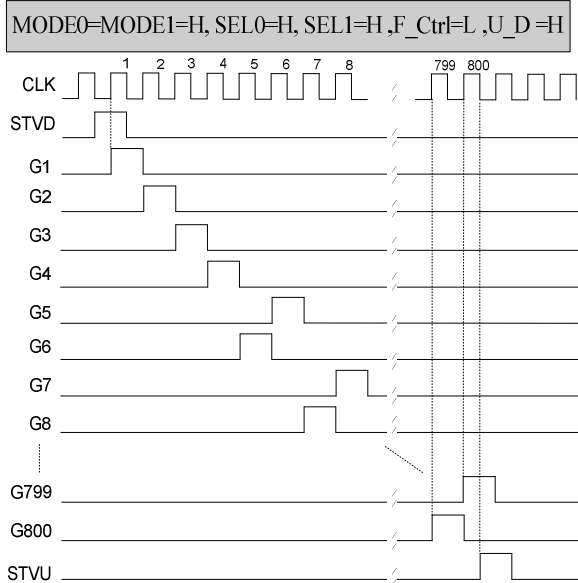
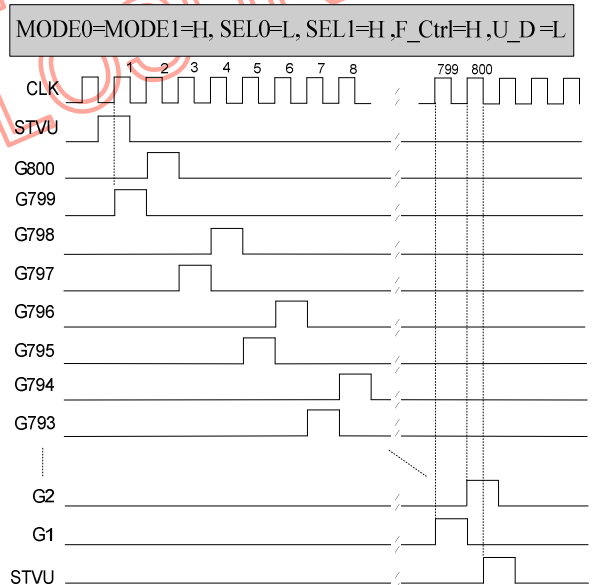
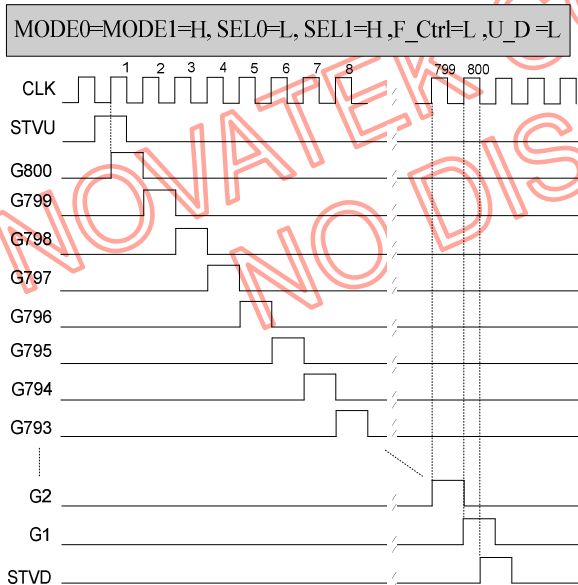
## 2 Output Sequence Timing

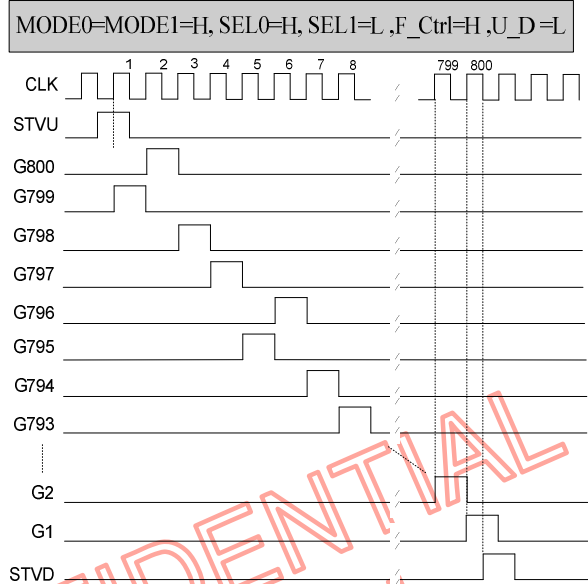
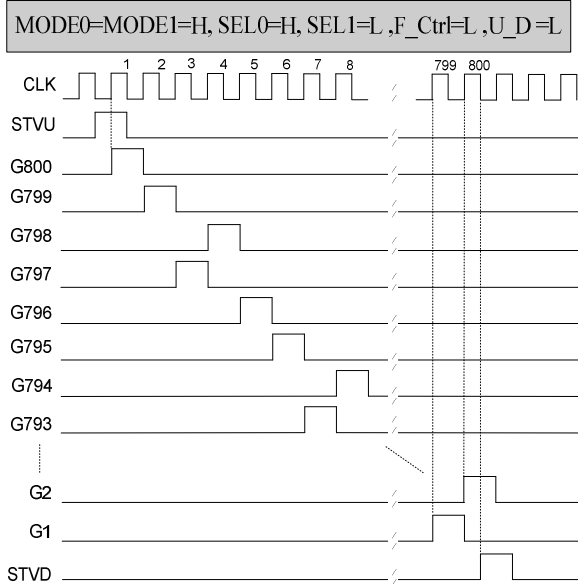
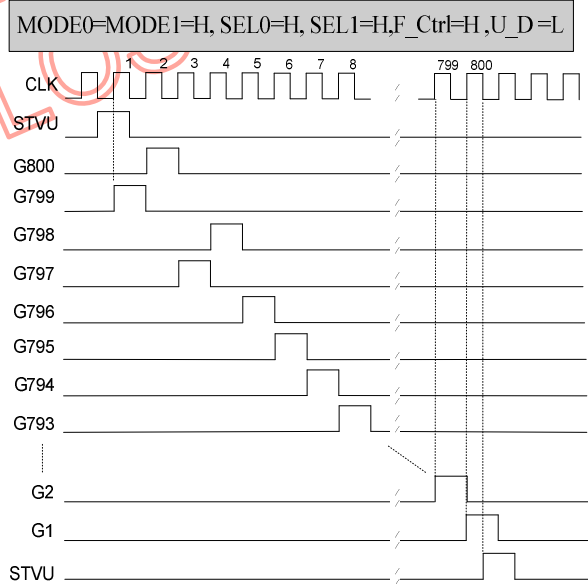
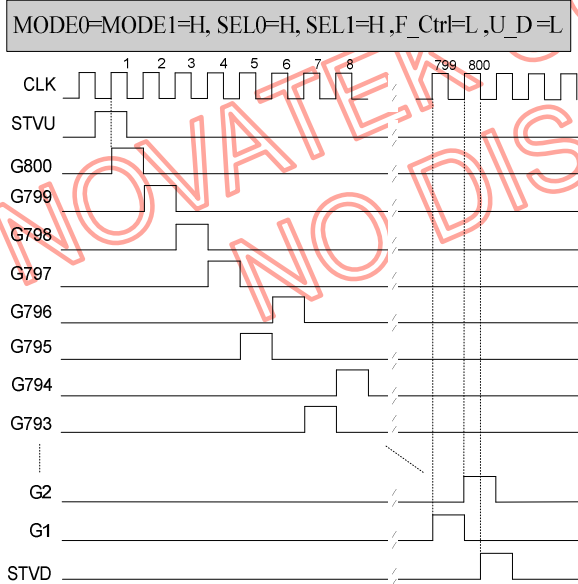
### Case 1:



### Case 2:



**Case 3:**

**Case 4:**


**Case 5:**

**Case 6:**




## Absolute Maximum Ratings\*

Logic supply voltage, VCC	-0.3V to +7V
Supply voltage, VGG	-0.3V to +42V
Supply voltage, VEE	-20V to +0.3V
Supply range, VGG-VEE	-0.3V to +40V
Operating temperature	-20 °C to +85 °C
Storage temperature	-55 °C to +125 °C

### \*Comments

Stresses above those listed under "Absolute Maximum Rating" may cause permanent damage to the device. These are stress ratings only. Functional operation of this device at these or any other conditions above those indicated in the operational sections of this specification is not implied and exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## Recommended Operating Range

(GND=0V, TA= -20 to +85 °C)

Symbol	Parameters	Min.	Typ.	Max.	Unit	Conditions
VGG	VGG Voltage	7	-	VEE + 40	V	
VEE	VEE Voltage	-20	-	-5	V	
Vxo	Voltage Range of VGG – VEE	12	-	40	V	VCC = 3.3V
VCC	VCC Supplied Voltage	2.3	3.3	3.6	V	

## DC Electrical Characteristics

(VGG=25V, VEE=-15V, VCC=2.3 to 3.6V, GND=0V, TA= -20 to +85 °C)

Symbol	Parameters	Min.	Typ.	Max.	Unit	Conditions
VIH	High Level Input Voltage	0.7VCC	-	VCC	V	VCC = 3.3V, OE/U_D/CLK/MODE[1:0]/ SEL[1:0]/STVD/STVU/ F_CTRL
		0.85VCC	-	VCC	V	VCC = 3.3V, XON
VIL	Low Level Input Voltage	0	-	0.3VCC	V	VCC = 3.3V, OE/U_D/CLK/MODE[1:0]/ SEL[1:0]/STVD/STVU/ F_CTRL/XON
IXOH	High Level Output Current	0.5	-	-	mA	VGG=25V, VEE=-15V, Driving current, VO = VGG – 0.5V
IXOL	Low Level Output Current	-0.5	-	-	mA	VGG=25V, VEE=-15V, Sinking current, VO = VEE + 0.5V
IPOH	High Level Output Current	200	-	-	uA	VCC=3.3V, STVD/STVU, VO = VCC – 0.3V
IPOL	Low Level Output Current	-200	-	-	uA	VCC=3.3V, STVD/STVU, VO = 0.3V

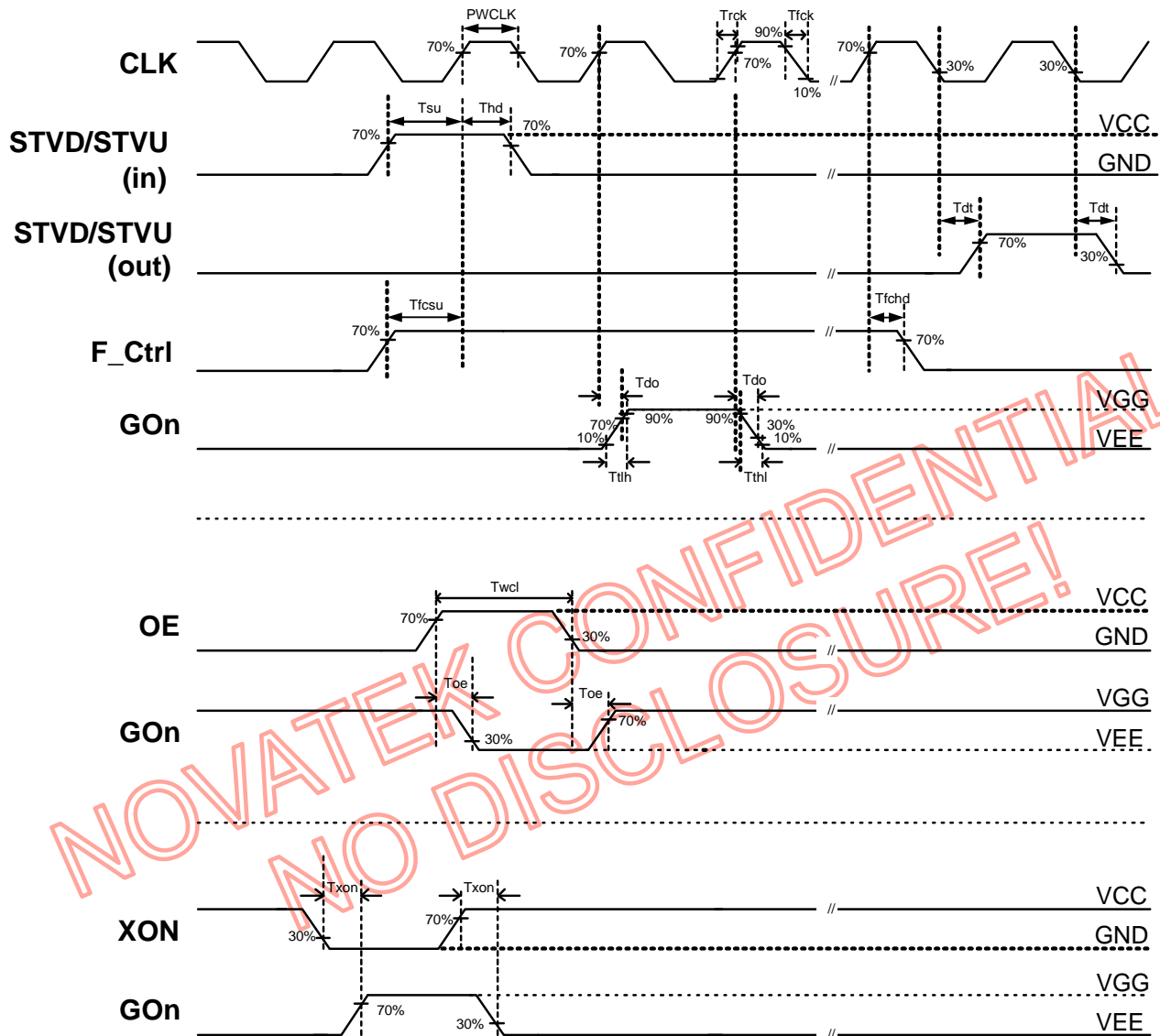
Rin	Pull up/low Impedance	70K	200K	400K	ohm	XON/MODE[1:0]/SEL[1:0] /F_Ctrl/U_D pin, When VCC=3.3V and TA=25°C
IIL	Input Leakage Current	-	-	±1	uA	Except XON/MODE[1:0]/ SEL[1:0]/F_Ctrl/U_D pin
ICC	Operating Current Consumption	-	-	150	uA	VCC=3.3V, Fclk=60KHz, No load
IGG	Operating Current Consumption	-	-	200	uA	VGG=25V, Fclk=60KHz, No load
IEE	Operating Current Consumption	-	-	-200	uA	VEE=-15V, Fclk=60KHz, No load

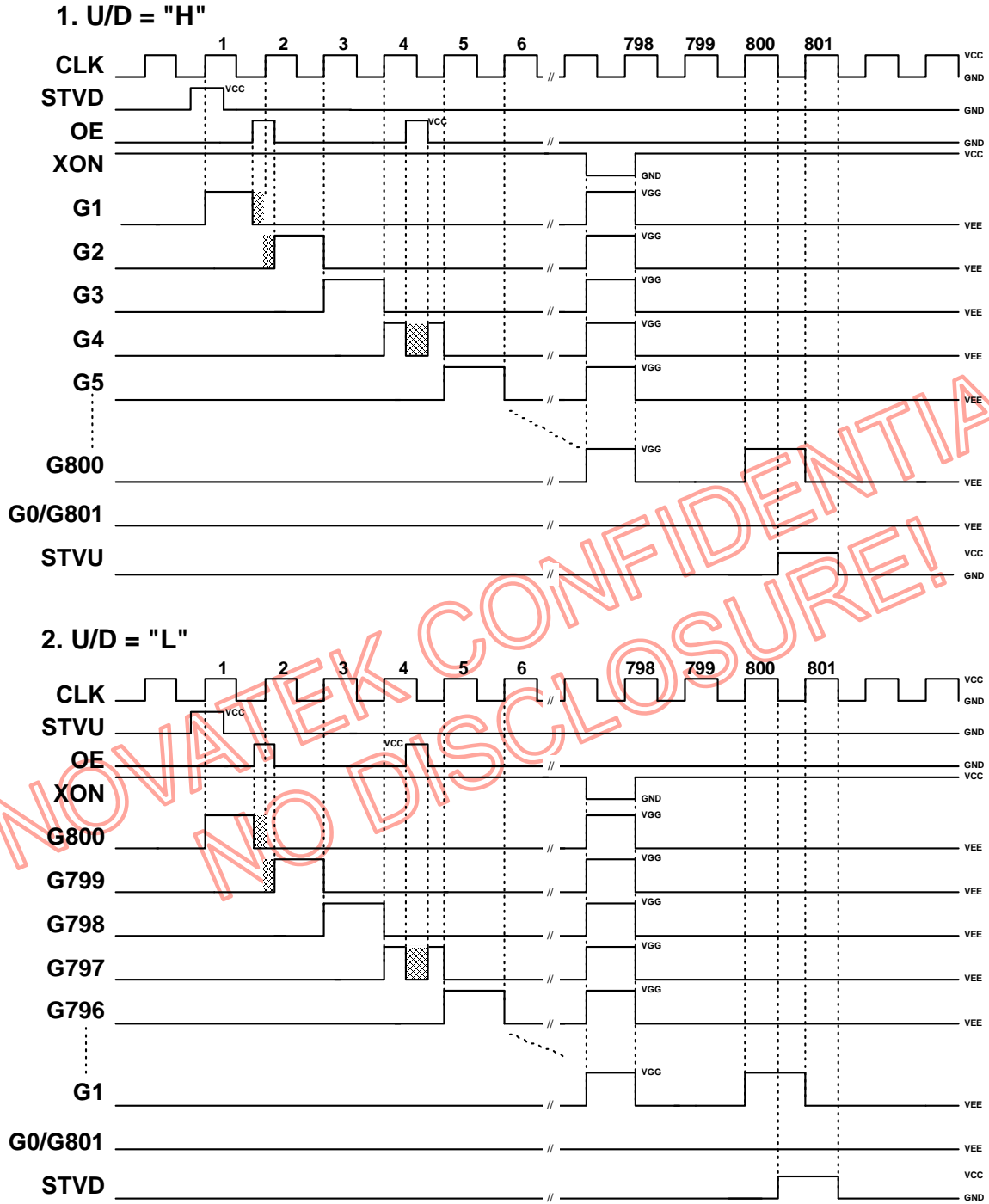
### AC Electrical Characteristics

(VGG=25V, VEE=-15V, VCC=2.3 to 3.6V, GND=0V, TA=-20 to +85 °C)

Symbol	Parameters	Min.	Typ.	Max.	Unit	Conditions
Tdt	STVD/STVU Delay Time	-	-	500	ns	CL = 20pF
Tdo	Driver Output Delay Time	-	-	900	ns	CL = 200pF
Tthl	Output Falling Time	-	400	800	ns	CL = 200pF, 90% to 10%
Ttlh	Output Rising Time	-	500	1000	ns	CL = 200pF, 10% to 90%
Txon	XON to Driver Output Delay Time	-	-	50	us	CL = 200pF
Toe	OE to Driver Output Delay Time	-	-	900	ns	CL = 200pF
Fclk	Clock Frequency	-	-	200	KHz	In cascade connection
Trck	Clock Rising Time	-	-	100	ns	CL = 20pF
Tfck	Clock Falling Time	-	-	100	ns	CL = 20pF
PWCLK	Clock Pulse Width (High & Low)	500	-	-	ns	
Tsu	STVD/STVU Set-Up Time	200	-	-	ns	
Thd	STVD/STVU Hold Time	300	-	-	ns	
Tfcsu	F_Ctrl Set-Up Time	200	-	-	ns	
Tfchd	F_Ctrl Hold Time	200	-	-	ns	
Twcl	Output Enabled Pulse Width	1	-	-	us	
Tpor	Power-On Reset Slew Time	-	-	20	ms	From 10% to 90% VCC

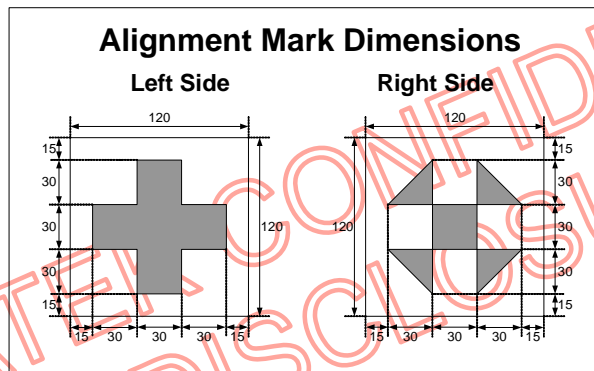
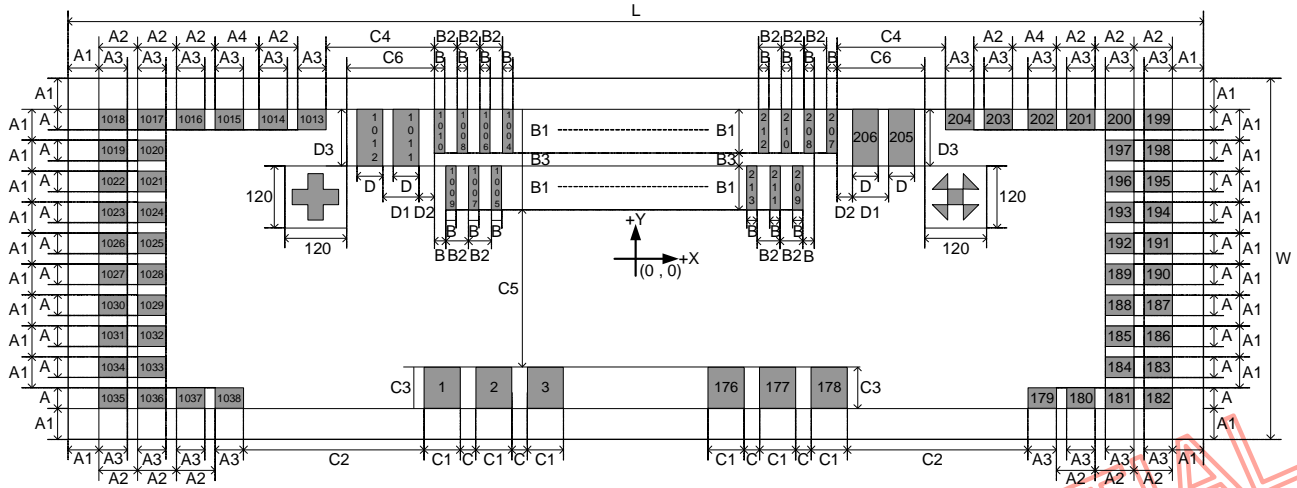
## Timing Waveforms



**Output timing**


▨ : Deleted from normal output by OE

## Chip Outline Dimensions



Symbol	Dimensions (um)	Symbol	Dimensions (um)	Symbol	Dimensions (um)
<b>A</b>	40	<b>B3</b>	25	<b>D</b>	50
<b>A1</b>	60	<b>C</b>	30	<b>D1</b>	70
<b>A2</b>	75	<b>C1</b>	70	<b>D2</b>	30
<b>A3</b>	55	<b>C2</b>	340	<b>D3</b>	110
<b>A4</b>	85	<b>C3</b>	80	<b>L</b>	19130(Max)
<b>B</b>	22	<b>C4</b>	210	<b>W</b>	700(Max)
<b>B1</b>	85	<b>C5</b>	305		
<b>B2</b>	44	<b>C6</b>	170		

Chip dimension: 19130um x 700um (Max)

Total bump area: 2636680um<sup>2</sup>

**\*Remark: Chip dimension include scribe line**

## Bonding Diagram

Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
1	SEL1	-8850	-250	70	80	61	SHIELDING_GND[58]	-2850	-250	70	80
2	SEL0	-8750	-250	70	80	62	SHIELDING_GND[59]	-2750	-250	70	80
3	F_Ctrl	-8650	-250	70	80	63	SHIELDING_GND[60]	-2650	-250	70	80
4	SHIELDING_GND[1]	-8550	-250	70	80	64	SHIELDING_GND[61]	-2550	-250	70	80
5	SHIELDING_GND[2]	-8450	-250	70	80	65	SHIELDING_GND[62]	-2450	-250	70	80
6	SHIELDING_GND[3]	-8350	-250	70	80	66	SHIELDING_GND[63]	-2350	-250	70	80
7	SHIELDING_GND[4]	-8250	-250	70	80	67	SHIELDING_GND[64]	-2250	-250	70	80
8	SHIELDING_GND[5]	-8150	-250	70	80	68	SHIELDING_GND[65]	-2150	-250	70	80
9	SHIELDING_GND[6]	-8050	-250	70	80	69	SHIELDING_GND[66]	-2050	-250	70	80
10	SHIELDING_GND[7]	-7950	-250	70	80	70	SHIELDING_GND[67]	-1950	-250	70	80
11	SHIELDING_GND[8]	-7850	-250	70	80	71	SHIELDING_GND[68]	-1850	-250	70	80
12	SHIELDING_GND[9]	-7750	-250	70	80	72	SHIELDING_GND[69]	-1750	-250	70	80
13	SHIELDING_GND[10]	-7650	-250	70	80	73	SHIELDING_GND[70]	-1650	-250	70	80
14	SHIELDING_GND[11]	-7550	-250	70	80	74	SHIELDING_GND[71]	-1550	-250	70	80
15	SHIELDING_GND[12]	-7450	-250	70	80	75	SHIELDING_GND[72]	-1450	-250	70	80
16	SHIELDING_GND[13]	-7350	-250	70	80	76	SHIELDING_GND[73]	-1350	-250	70	80
17	SHIELDING_GND[14]	-7250	-250	70	80	77	SHIELDING_GND[74]	-1250	-250	70	80
18	SHIELDING_GND[15]	-7150	-250	70	80	78	SHIELDING_GND[75]	-1150	-250	70	80
19	SHIELDING_GND[16]	-7050	-250	70	80	79	SHIELDING_GND[76]	-1050	-250	70	80
20	SHIELDING_GND[17]	-6950	-250	70	80	80	SHIELDING_GND[77]	-950	-250	70	80
21	SHIELDING_GND[18]	-6850	-250	70	80	81	SHIELDING_GND[78]	-850	-250	70	80
22	SHIELDING_GND[19]	-6750	-250	70	80	82	SHIELDING_GND[79]	-750	-250	70	80
23	SHIELDING_GND[20]	-6650	-250	70	80	83	SHIELDING_GND[80]	-650	-250	70	80
24	SHIELDING_GND[21]	-6550	-250	70	80	84	SHIELDING_GND[81]	-550	-250	70	80
25	SHIELDING_GND[22]	-6450	-250	70	80	85	SHIELDING_GND[82]	-450	-250	70	80
26	SHIELDING_GND[23]	-6350	-250	70	80	86	SHIELDING_GND[83]	-350	-250	70	80
27	SHIELDING_GND[24]	-6250	-250	70	80	87	SHIELDING_GND[84]	-250	-250	70	80
28	SHIELDING_GND[25]	-6150	-250	70	80	88	SHIELDING_GND[85]	-150	-250	70	80
29	SHIELDING_GND[26]	-6050	-250	70	80	89	SHIELDING_GND[86]	-50	-250	70	80
30	SHIELDING_GND[27]	-5950	-250	70	80	90	SHIELDING_GND[87]	50	-250	70	80
31	SHIELDING_GND[28]	-5850	-250	70	80	91	SHIELDING_GND[88]	150	-250	70	80
32	SHIELDING_GND[29]	-5750	-250	70	80	92	SHIELDING_GND[89]	250	-250	70	80
33	SHIELDING_GND[30]	-5650	-250	70	80	93	SHIELDING_GND[90]	350	-250	70	80
34	SHIELDING_GND[31]	-5550	-250	70	80	94	SHIELDING_GND[91]	450	-250	70	80
35	SHIELDING_GND[32]	-5450	-250	70	80	95	SHIELDING_GND[92]	550	-250	70	80
36	SHIELDING_GND[33]	-5350	-250	70	80	96	SHIELDING_GND[93]	650	-250	70	80
37	SHIELDING_GND[34]	-5250	-250	70	80	97	SHIELDING_GND[94]	750	-250	70	80
38	SHIELDING_GND[35]	-5150	-250	70	80	98	SHIELDING_GND[95]	850	-250	70	80
39	SHIELDING_GND[36]	-5050	-250	70	80	99	SHIELDING_GND[96]	950	-250	70	80
40	SHIELDING_GND[37]	-4950	-250	70	80	100	SHIELDING_GND[97]	1050	-250	70	80
41	SHIELDING_GND[38]	-4850	-250	70	80	101	SHIELDING_GND[98]	1150	-250	70	80
42	SHIELDING_GND[39]	-4750	-250	70	80	102	SHIELDING_GND[99]	1250	-250	70	80
43	SHIELDING_GND[40]	-4650	-250	70	80	103	SHIELDING_GND[100]	1350	-250	70	80
44	SHIELDING_GND[41]	-4550	-250	70	80	104	SHIELDING_GND[101]	1450	-250	70	80
45	SHIELDING_GND[42]	-4450	-250	70	80	105	SHIELDING_GND[102]	1550	-250	70	80
46	SHIELDING_GND[43]	-4350	-250	70	80	106	SHIELDING_GND[103]	1650	-250	70	80
47	SHIELDING_GND[44]	-4250	-250	70	80	107	SHIELDING_GND[104]	1750	-250	70	80
48	SHIELDING_GND[45]	-4150	-250	70	80	108	SHIELDING_GND[105]	1850	-250	70	80
49	SHIELDING_GND[46]	-4050	-250	70	80	109	SHIELDING_GND[106]	1950	-250	70	80
50	SHIELDING_GND[47]	-3950	-250	70	80	110	SHIELDING_GND[107]	2050	-250	70	80
51	SHIELDING_GND[48]	-3850	-250	70	80	111	SHIELDING_GND[108]	2150	-250	70	80
52	SHIELDING_GND[49]	-3750	-250	70	80	112	SHIELDING_GND[109]	2250	-250	70	80
53	SHIELDING_GND[50]	-3650	-250	70	80	113	SHIELDING_GND[110]	2350	-250	70	80
54	SHIELDING_GND[51]	-3550	-250	70	80	114	SHIELDING_GND[111]	2450	-250	70	80
55	SHIELDING_GND[52]	-3450	-250	70	80	115	SHIELDING_GND[112]	2550	-250	70	80
56	SHIELDING_GND[53]	-3350	-250	70	80	116	SHIELDING_GND[113]	2650	-250	70	80
57	SHIELDING_GND[54]	-3250	-250	70	80	117	SHIELDING_GND[114]	2750	-250	70	80
58	SHIELDING_GND[55]	-3150	-250	70	80	118	SHIELDING_GND[115]	2850	-250	70	80
59	SHIELDING_GND[56]	-3050	-250	70	80	119	SHIELDING_GND[116]	2950	-250	70	80
60	SHIELDING_GND[57]	-2950	-250	70	80	120	SHIELDING_GND[117]	3050	-250	70	80

Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
121	SHIELDING_GND[118]	3150	-250	70	80	181	MODE1	9402.5	-270	55	40
122	SHIELDING_GND[119]	3250	-250	70	80	182	MODE1	9477.5	-270	55	40
123	SHIELDING_GND[120]	3350	-250	70	80	183	GND	9477.5	-210	55	40
124	SHIELDING_GND[121]	3450	-250	70	80	184	GND	9402.5	-210	55	40
125	SHIELDING_GND[122]	3550	-250	70	80	185	VCC	9402.5	-150	55	40
126	SHIELDING_GND[123]	3650	-250	70	80	186	VCC	9477.5	-150	55	40
127	SHIELDING_GND[124]	3750	-250	70	80	187	VEE	9477.5	-90	55	40
128	SHIELDING_GND[125]	3850	-250	70	80	188	VEE	9402.5	-90	55	40
129	SHIELDING_GND[126]	3950	-250	70	80	189	VGG	9402.5	-30	55	40
130	SHIELDING_GND[127]	4050	-250	70	80	190	VGG	9477.5	-30	55	40
131	SHIELDING_GND[128]	4150	-250	70	80	191	STVD	9477.5	30	55	40
132	SHIELDING_GND[129]	4250	-250	70	80	192	STVD	9402.5	30	55	40
133	SHIELDING_GND[130]	4350	-250	70	80	193	PATH1	9402.5	90	55	40
134	SHIELDING_GND[131]	4450	-250	70	80	194	PATH1	9477.5	90	55	40
135	SHIELDING_GND[132]	4550	-250	70	80	195	CLK	9477.5	150	55	40
136	SHIELDING_GND[133]	4650	-250	70	80	196	CLK	9402.5	150	55	40
137	SHIELDING_GND[134]	4750	-250	70	80	197	U/D	9402.5	210	55	40
138	SHIELDING_GND[135]	4850	-250	70	80	198	U/D	9477.5	210	55	40
139	SHIELDING_GND[136]	4950	-250	70	80	199	OE	9477.5	270	55	40
140	SHIELDING_GND[137]	5050	-250	70	80	200	OE	9402.5	270	55	40
141	SHIELDING_GND[138]	5150	-250	70	80	201	OE	9327.5	270	55	40
142	SHIELDING_GND[139]	5250	-250	70	80	202	OE	9252.5	270	55	40
143	SHIELDING_GND[140]	5350	-250	70	80	203	XON	9167.5	270	55	40
144	SHIELDING_GND[141]	5450	-250	70	80	204	XON	9092.5	270	55	40
145	SHIELDING_GND[142]	5550	-250	70	80	205	PATH2	8980	235	50	110
146	SHIELDING_GND[143]	5650	-250	70	80	206	PATH2	8910	235	50	110
147	SHIELDING_GND[144]	5750	-250	70	80	207	SHIELDING_VEE[1]	8844	247.5	22	85
148	SHIELDING_GND[145]	5850	-250	70	80	208	G[0]	8800	247.5	22	85
149	SHIELDING_GND[146]	5950	-250	70	80	209	G[1]	8778	137.5	22	85
150	SHIELDING_GND[147]	6050	-250	70	80	210	G[2]	8756	247.5	22	85
151	SHIELDING_GND[148]	6150	-250	70	80	211	G[3]	8734	137.5	22	85
152	SHIELDING_GND[149]	6250	-250	70	80	212	G[4]	8712	247.5	22	85
153	SHIELDING_GND[150]	6350	-250	70	80	213	G[5]	8690	137.5	22	85
154	SHIELDING_GND[151]	6450	-250	70	80	214	G[6]	8668	247.5	22	85
155	SHIELDING_GND[152]	6550	-250	70	80	215	G[7]	8646	137.5	22	85
156	SHIELDING_GND[153]	6650	-250	70	80	216	G[8]	8624	247.5	22	85
157	SHIELDING_GND[154]	6750	-250	70	80	217	G[9]	8602	137.5	22	85
158	SHIELDING_GND[155]	6850	-250	70	80	218	G[10]	8580	247.5	22	85
159	SHIELDING_GND[156]	6950	-250	70	80	219	G[11]	8558	137.5	22	85
160	SHIELDING_GND[157]	7050	-250	70	80	220	G[12]	8536	247.5	22	85
161	SHIELDING_GND[158]	7150	-250	70	80	221	G[13]	8514	137.5	22	85
162	SHIELDING_GND[159]	7250	-250	70	80	222	G[14]	8492	247.5	22	85
163	SHIELDING_GND[160]	7350	-250	70	80	223	G[15]	8470	137.5	22	85
164	SHIELDING_GND[161]	7450	-250	70	80	224	G[16]	8448	247.5	22	85
165	SHIELDING_GND[162]	7550	-250	70	80	225	G[17]	8426	137.5	22	85
166	SHIELDING_GND[163]	7650	-250	70	80	226	G[18]	8404	247.5	22	85
167	SHIELDING_GND[164]	7750	-250	70	80	227	G[19]	8382	137.5	22	85
168	SHIELDING_GND[165]	7850	-250	70	80	228	G[20]	8360	247.5	22	85
169	SHIELDING_GND[166]	7950	-250	70	80	229	G[21]	8338	137.5	22	85
170	SHIELDING_GND[167]	8050	-250	70	80	230	G[22]	8316	247.5	22	85
171	SHIELDING_GND[168]	8150	-250	70	80	231	G[23]	8294	137.5	22	85
172	SHIELDING_GND[169]	8250	-250	70	80	232	G[24]	8272	247.5	22	85
173	SHIELDING_GND[170]	8350	-250	70	80	233	G[25]	8250	137.5	22	85
174	SHIELDING_GND[171]	8450	-250	70	80	234	G[26]	8228	247.5	22	85
175	SHIELDING_GND[172]	8550	-250	70	80	235	G[27]	8206	137.5	22	85
176	F_Ctrl	8650	-250	70	80	236	G[28]	8184	247.5	22	85
177	SEL0	8750	-250	70	80	237	G[29]	8162	137.5	22	85
178	SEL1	8850	-250	70	80	238	G[30]	8140	247.5	22	85
179	MODE0	9252.5	-270	55	40	239	G[31]	8118	137.5	22	85
180	MODE0	9327.5	-270	55	40	240	G[32]	8096	247.5	22	85

Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
241	G[33]	8074	137.5	22	85	301	G[93]	6754	137.5	22	85
242	G[34]	8052	247.5	22	85	302	G[94]	6732	247.5	22	85
243	G[35]	8030	137.5	22	85	303	G[95]	6710	137.5	22	85
244	G[36]	8008	247.5	22	85	304	G[96]	6688	247.5	22	85
245	G[37]	7986	137.5	22	85	305	G[97]	6666	137.5	22	85
246	G[38]	7964	247.5	22	85	306	G[98]	6644	247.5	22	85
247	G[39]	7942	137.5	22	85	307	G[99]	6622	137.5	22	85
248	G[40]	7920	247.5	22	85	308	G[100]	6600	247.5	22	85
249	G[41]	7898	137.5	22	85	309	G[101]	6578	137.5	22	85
250	G[42]	7876	247.5	22	85	310	G[102]	6556	247.5	22	85
251	G[43]	7854	137.5	22	85	311	G[103]	6534	137.5	22	85
252	G[44]	7832	247.5	22	85	312	G[104]	6512	247.5	22	85
253	G[45]	7810	137.5	22	85	313	G[105]	6490	137.5	22	85
254	G[46]	7788	247.5	22	85	314	G[106]	6468	247.5	22	85
255	G[47]	7766	137.5	22	85	315	G[107]	6446	137.5	22	85
256	G[48]	7744	247.5	22	85	316	G[108]	6424	247.5	22	85
257	G[49]	7722	137.5	22	85	317	G[109]	6402	137.5	22	85
258	G[50]	7700	247.5	22	85	318	G[110]	6380	247.5	22	85
259	G[51]	7678	137.5	22	85	319	G[111]	6358	137.5	22	85
260	G[52]	7656	247.5	22	85	320	G[112]	6336	247.5	22	85
261	G[53]	7634	137.5	22	85	321	G[113]	6314	137.5	22	85
262	G[54]	7612	247.5	22	85	322	G[114]	6292	247.5	22	85
263	G[55]	7590	137.5	22	85	323	G[115]	6270	137.5	22	85
264	G[56]	7568	247.5	22	85	324	G[116]	6248	247.5	22	85
265	G[57]	7546	137.5	22	85	325	G[117]	6226	137.5	22	85
266	G[58]	7524	247.5	22	85	326	G[118]	6204	247.5	22	85
267	G[59]	7502	137.5	22	85	327	G[119]	6182	137.5	22	85
268	G[60]	7480	247.5	22	85	328	G[120]	6160	247.5	22	85
269	G[61]	7458	137.5	22	85	329	G[121]	6138	137.5	22	85
270	G[62]	7436	247.5	22	85	330	G[122]	6116	247.5	22	85
271	G[63]	7414	137.5	22	85	331	G[123]	6094	137.5	22	85
272	G[64]	7392	247.5	22	85	332	G[124]	6072	247.5	22	85
273	G[65]	7370	137.5	22	85	333	G[125]	6050	137.5	22	85
274	G[66]	7348	247.5	22	85	334	G[126]	6028	247.5	22	85
275	G[67]	7326	137.5	22	85	335	G[127]	6006	137.5	22	85
276	G[68]	7304	247.5	22	85	336	G[128]	5984	247.5	22	85
277	G[69]	7282	137.5	22	85	337	G[129]	5962	137.5	22	85
278	G[70]	7260	247.5	22	85	338	G[130]	5940	247.5	22	85
279	G[71]	7238	137.5	22	85	339	G[131]	5918	137.5	22	85
280	G[72]	7216	247.5	22	85	340	G[132]	5896	247.5	22	85
281	G[73]	7194	137.5	22	85	341	G[133]	5874	137.5	22	85
282	G[74]	7172	247.5	22	85	342	G[134]	5852	247.5	22	85
283	G[75]	7150	137.5	22	85	343	G[135]	5830	137.5	22	85
284	G[76]	7128	247.5	22	85	344	G[136]	5808	247.5	22	85
285	G[77]	7106	137.5	22	85	345	G[137]	5786	137.5	22	85
286	G[78]	7084	247.5	22	85	346	G[138]	5764	247.5	22	85
287	G[79]	7062	137.5	22	85	347	G[139]	5742	137.5	22	85
288	G[80]	7040	247.5	22	85	348	G[140]	5720	247.5	22	85
289	G[81]	7018	137.5	22	85	349	G[141]	5698	137.5	22	85
290	G[82]	6996	247.5	22	85	350	G[142]	5676	247.5	22	85
291	G[83]	6974	137.5	22	85	351	G[143]	5654	137.5	22	85
292	G[84]	6952	247.5	22	85	352	G[144]	5632	247.5	22	85
293	G[85]	6930	137.5	22	85	353	G[145]	5610	137.5	22	85
294	G[86]	6908	247.5	22	85	354	G[146]	5588	247.5	22	85
295	G[87]	6886	137.5	22	85	355	G[147]	5566	137.5	22	85
296	G[88]	6864	247.5	22	85	356	G[148]	5544	247.5	22	85
297	G[89]	6842	137.5	22	85	357	G[149]	5522	137.5	22	85
298	G[90]	6820	247.5	22	85	358	G[150]	5500	247.5	22	85
299	G[91]	6798	137.5	22	85	359	G[151]	5478	137.5	22	85
300	G[92]	6776	247.5	22	85	360	G[152]	5456	247.5	22	85



Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
361	G[153]	5434	137.5	22	85	421	G[213]	4114	137.5	22	85
362	G[154]	5412	247.5	22	85	422	G[214]	4092	247.5	22	85
363	G[155]	5390	137.5	22	85	423	G[215]	4070	137.5	22	85
364	G[156]	5368	247.5	22	85	424	G[216]	4048	247.5	22	85
365	G[157]	5346	137.5	22	85	425	G[217]	4026	137.5	22	85
366	G[158]	5324	247.5	22	85	426	G[218]	4004	247.5	22	85
367	G[159]	5302	137.5	22	85	427	G[219]	3982	137.5	22	85
368	G[160]	5280	247.5	22	85	428	G[220]	3960	247.5	22	85
369	G[161]	5258	137.5	22	85	429	G[221]	3938	137.5	22	85
370	G[162]	5236	247.5	22	85	430	G[222]	3916	247.5	22	85
371	G[163]	5214	137.5	22	85	431	G[223]	3894	137.5	22	85
372	G[164]	5192	247.5	22	85	432	G[224]	3872	247.5	22	85
373	G[165]	5170	137.5	22	85	433	G[225]	3850	137.5	22	85
374	G[166]	5148	247.5	22	85	434	G[226]	3828	247.5	22	85
375	G[167]	5126	137.5	22	85	435	G[227]	3806	137.5	22	85
376	G[168]	5104	247.5	22	85	436	G[228]	3784	247.5	22	85
377	G[169]	5082	137.5	22	85	437	G[229]	3762	137.5	22	85
378	G[170]	5060	247.5	22	85	438	G[230]	3740	247.5	22	85
379	G[171]	5038	137.5	22	85	439	G[231]	3718	137.5	22	85
380	G[172]	5016	247.5	22	85	440	G[232]	3696	247.5	22	85
381	G[173]	4994	137.5	22	85	441	G[233]	3674	137.5	22	85
382	G[174]	4972	247.5	22	85	442	G[234]	3652	247.5	22	85
383	G[175]	4950	137.5	22	85	443	G[235]	3630	137.5	22	85
384	G[176]	4928	247.5	22	85	444	G[236]	3608	247.5	22	85
385	G[177]	4906	137.5	22	85	445	G[237]	3586	137.5	22	85
386	G[178]	4884	247.5	22	85	446	G[238]	3564	247.5	22	85
387	G[179]	4862	137.5	22	85	447	G[239]	3542	137.5	22	85
388	G[180]	4840	247.5	22	85	448	G[240]	3520	247.5	22	85
389	G[181]	4818	137.5	22	85	449	G[241]	3498	137.5	22	85
390	G[182]	4796	247.5	22	85	450	G[242]	3476	247.5	22	85
391	G[183]	4774	137.5	22	85	451	G[243]	3454	137.5	22	85
392	G[184]	4752	247.5	22	85	452	G[244]	3432	247.5	22	85
393	G[185]	4730	137.5	22	85	453	G[245]	3410	137.5	22	85
394	G[186]	4708	247.5	22	85	454	G[246]	3388	247.5	22	85
395	G[187]	4686	137.5	22	85	455	G[247]	3366	137.5	22	85
396	G[188]	4664	247.5	22	85	456	G[248]	3344	247.5	22	85
397	G[189]	4642	137.5	22	85	457	G[249]	3322	137.5	22	85
398	G[190]	4620	247.5	22	85	458	G[250]	3300	247.5	22	85
399	G[191]	4598	137.5	22	85	459	G[251]	3278	137.5	22	85
400	G[192]	4576	247.5	22	85	460	G[252]	3256	247.5	22	85
401	G[193]	4554	137.5	22	85	461	G[253]	3234	137.5	22	85
402	G[194]	4532	247.5	22	85	462	G[254]	3212	247.5	22	85
403	G[195]	4510	137.5	22	85	463	G[255]	3190	137.5	22	85
404	G[196]	4488	247.5	22	85	464	G[256]	3168	247.5	22	85
405	G[197]	4466	137.5	22	85	465	G[257]	3146	137.5	22	85
406	G[198]	4444	247.5	22	85	466	G[258]	3124	247.5	22	85
407	G[199]	4422	137.5	22	85	467	G[259]	3102	137.5	22	85
408	G[200]	4400	247.5	22	85	468	G[260]	3080	247.5	22	85
409	G[201]	4378	137.5	22	85	469	G[261]	3058	137.5	22	85
410	G[202]	4356	247.5	22	85	470	G[262]	3036	247.5	22	85
411	G[203]	4334	137.5	22	85	471	G[263]	3014	137.5	22	85
412	G[204]	4312	247.5	22	85	472	G[264]	2992	247.5	22	85
413	G[205]	4290	137.5	22	85	473	G[265]	2970	137.5	22	85
414	G[206]	4268	247.5	22	85	474	G[266]	2948	247.5	22	85
415	G[207]	4246	137.5	22	85	475	G[267]	2926	137.5	22	85
416	G[208]	4224	247.5	22	85	476	G[268]	2904	247.5	22	85
417	G[209]	4202	137.5	22	85	477	G[269]	2882	137.5	22	85
418	G[210]	4180	247.5	22	85	478	G[270]	2860	247.5	22	85
419	G[211]	4158	137.5	22	85	479	G[271]	2838	137.5	22	85
420	G[212]	4136	247.5	22	85	480	G[272]	2816	247.5	22	85

Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
481	G[273]	2794	137.5	22	85	541	G[333]	1474	137.5	22	85
482	G[274]	2772	247.5	22	85	542	G[334]	1452	247.5	22	85
483	G[275]	2750	137.5	22	85	543	G[335]	1430	137.5	22	85
484	G[276]	2728	247.5	22	85	544	G[336]	1408	247.5	22	85
485	G[277]	2706	137.5	22	85	545	G[337]	1386	137.5	22	85
486	G[278]	2684	247.5	22	85	546	G[338]	1364	247.5	22	85
487	G[279]	2662	137.5	22	85	547	G[339]	1342	137.5	22	85
488	G[280]	2640	247.5	22	85	548	G[340]	1320	247.5	22	85
489	G[281]	2618	137.5	22	85	549	G[341]	1298	137.5	22	85
490	G[282]	2596	247.5	22	85	550	G[342]	1276	247.5	22	85
491	G[283]	2574	137.5	22	85	551	G[343]	1254	137.5	22	85
492	G[284]	2552	247.5	22	85	552	G[344]	1232	247.5	22	85
493	G[285]	2530	137.5	22	85	553	G[345]	1210	137.5	22	85
494	G[286]	2508	247.5	22	85	554	G[346]	1188	247.5	22	85
495	G[287]	2486	137.5	22	85	555	G[347]	1166	137.5	22	85
496	G[288]	2464	247.5	22	85	556	G[348]	1144	247.5	22	85
497	G[289]	2442	137.5	22	85	557	G[349]	1122	137.5	22	85
498	G[290]	2420	247.5	22	85	558	G[350]	1100	247.5	22	85
499	G[291]	2398	137.5	22	85	559	G[351]	1078	137.5	22	85
500	G[292]	2376	247.5	22	85	560	G[352]	1056	247.5	22	85
501	G[293]	2354	137.5	22	85	561	G[353]	1034	137.5	22	85
502	G[294]	2332	247.5	22	85	562	G[354]	1012	247.5	22	85
503	G[295]	2310	137.5	22	85	563	G[355]	990	137.5	22	85
504	G[296]	2288	247.5	22	85	564	G[356]	968	247.5	22	85
505	G[297]	2266	137.5	22	85	565	G[357]	946	137.5	22	85
506	G[298]	2244	247.5	22	85	566	G[358]	924	247.5	22	85
507	G[299]	2222	137.5	22	85	567	G[359]	902	137.5	22	85
508	G[300]	2200	247.5	22	85	568	G[360]	880	247.5	22	85
509	G[301]	2178	137.5	22	85	569	G[361]	858	137.5	22	85
510	G[302]	2156	247.5	22	85	570	G[362]	836	247.5	22	85
511	G[303]	2134	137.5	22	85	571	G[363]	814	137.5	22	85
512	G[304]	2112	247.5	22	85	572	G[364]	792	247.5	22	85
513	G[305]	2090	137.5	22	85	573	G[365]	770	137.5	22	85
514	G[306]	2068	247.5	22	85	574	G[366]	748	247.5	22	85
515	G[307]	2046	137.5	22	85	575	G[367]	726	137.5	22	85
516	G[308]	2024	247.5	22	85	576	G[368]	704	247.5	22	85
517	G[309]	2002	137.5	22	85	577	G[369]	682	137.5	22	85
518	G[310]	1980	247.5	22	85	578	G[370]	660	247.5	22	85
519	G[311]	1958	137.5	22	85	579	G[371]	638	137.5	22	85
520	G[312]	1936	247.5	22	85	580	G[372]	616	247.5	22	85
521	G[313]	1914	137.5	22	85	581	G[373]	594	137.5	22	85
522	G[314]	1892	247.5	22	85	582	G[374]	572	247.5	22	85
523	G[315]	1870	137.5	22	85	583	G[375]	550	137.5	22	85
524	G[316]	1848	247.5	22	85	584	G[376]	528	247.5	22	85
525	G[317]	1826	137.5	22	85	585	G[377]	506	137.5	22	85
526	G[318]	1804	247.5	22	85	586	G[378]	484	247.5	22	85
527	G[319]	1782	137.5	22	85	587	G[379]	462	137.5	22	85
528	G[320]	1760	247.5	22	85	588	G[380]	440	247.5	22	85
529	G[321]	1738	137.5	22	85	589	G[381]	418	137.5	22	85
530	G[322]	1716	247.5	22	85	590	G[382]	396	247.5	22	85
531	G[323]	1694	137.5	22	85	591	G[383]	374	137.5	22	85
532	G[324]	1672	247.5	22	85	592	G[384]	352	247.5	22	85
533	G[325]	1650	137.5	22	85	593	G[385]	330	137.5	22	85
534	G[326]	1628	247.5	22	85	594	G[386]	308	247.5	22	85
535	G[327]	1606	137.5	22	85	595	G[387]	286	137.5	22	85
536	G[328]	1584	247.5	22	85	596	G[388]	264	247.5	22	85
537	G[329]	1562	137.5	22	85	597	G[389]	242	137.5	22	85
538	G[330]	1540	247.5	22	85	598	G[390]	220	247.5	22	85
539	G[331]	1518	137.5	22	85	599	G[391]	198	137.5	22	85
540	G[332]	1496	247.5	22	85	600	G[392]	176	247.5	22	85

Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
601	G[393]	154	137.5	22	85	661	G[453]	-1166	137.5	22	85
602	G[394]	132	247.5	22	85	662	G[454]	-1188	247.5	22	85
603	G[395]	110	137.5	22	85	663	G[455]	-1210	137.5	22	85
604	G[396]	88	247.5	22	85	664	G[456]	-1232	247.5	22	85
605	G[397]	66	137.5	22	85	665	G[457]	-1254	137.5	22	85
606	G[398]	44	247.5	22	85	666	G[458]	-1276	247.5	22	85
607	G[399]	22	137.5	22	85	667	G[459]	-1298	137.5	22	85
608	G[400]	0	247.5	22	85	668	G[460]	-1320	247.5	22	85
609	G[401]	-22	137.5	22	85	669	G[461]	-1342	137.5	22	85
610	G[402]	-44	247.5	22	85	670	G[462]	-1364	247.5	22	85
611	G[403]	-66	137.5	22	85	671	G[463]	-1386	137.5	22	85
612	G[404]	-88	247.5	22	85	672	G[464]	-1408	247.5	22	85
613	G[405]	-110	137.5	22	85	673	G[465]	-1430	137.5	22	85
614	G[406]	-132	247.5	22	85	674	G[466]	-1452	247.5	22	85
615	G[407]	-154	137.5	22	85	675	G[467]	-1474	137.5	22	85
616	G[408]	-176	247.5	22	85	676	G[468]	-1496	247.5	22	85
617	G[409]	-198	137.5	22	85	677	G[469]	-1518	137.5	22	85
618	G[410]	-220	247.5	22	85	678	G[470]	-1540	247.5	22	85
619	G[411]	-242	137.5	22	85	679	G[471]	-1562	137.5	22	85
620	G[412]	-264	247.5	22	85	680	G[472]	-1584	247.5	22	85
621	G[413]	-286	137.5	22	85	681	G[473]	-1606	137.5	22	85
622	G[414]	-308	247.5	22	85	682	G[474]	-1628	247.5	22	85
623	G[415]	-330	137.5	22	85	683	G[475]	-1650	137.5	22	85
624	G[416]	-352	247.5	22	85	684	G[476]	-1672	247.5	22	85
625	G[417]	-374	137.5	22	85	685	G[477]	-1694	137.5	22	85
626	G[418]	-396	247.5	22	85	686	G[478]	-1716	247.5	22	85
627	G[419]	-418	137.5	22	85	687	G[479]	-1738	137.5	22	85
628	G[420]	-440	247.5	22	85	688	G[480]	-1760	247.5	22	85
629	G[421]	-462	137.5	22	85	689	G[481]	-1782	137.5	22	85
630	G[422]	-484	247.5	22	85	690	G[482]	-1804	247.5	22	85
631	G[423]	-506	137.5	22	85	691	G[483]	-1826	137.5	22	85
632	G[424]	-528	247.5	22	85	692	G[484]	-1848	247.5	22	85
633	G[425]	-550	137.5	22	85	693	G[485]	-1870	137.5	22	85
634	G[426]	-572	247.5	22	85	694	G[486]	-1892	247.5	22	85
635	G[427]	-594	137.5	22	85	695	G[487]	-1914	137.5	22	85
636	G[428]	-616	247.5	22	85	696	G[488]	-1936	247.5	22	85
637	G[429]	-638	137.5	22	85	697	G[489]	-1958	137.5	22	85
638	G[430]	-660	247.5	22	85	698	G[490]	-1980	247.5	22	85
639	G[431]	-682	137.5	22	85	699	G[491]	-2002	137.5	22	85
640	G[432]	-704	247.5	22	85	700	G[492]	-2024	247.5	22	85
641	G[433]	-726	137.5	22	85	701	G[493]	-2046	137.5	22	85
642	G[434]	-748	247.5	22	85	702	G[494]	-2068	247.5	22	85
643	G[435]	-770	137.5	22	85	703	G[495]	-2090	137.5	22	85
644	G[436]	-792	247.5	22	85	704	G[496]	-2112	247.5	22	85
645	G[437]	-814	137.5	22	85	705	G[497]	-2134	137.5	22	85
646	G[438]	-836	247.5	22	85	706	G[498]	-2156	247.5	22	85
647	G[439]	-858	137.5	22	85	707	G[499]	-2178	137.5	22	85
648	G[440]	-880	247.5	22	85	708	G[500]	-2200	247.5	22	85
649	G[441]	-902	137.5	22	85	709	G[501]	-2222	137.5	22	85
650	G[442]	-924	247.5	22	85	710	G[502]	-2244	247.5	22	85
651	G[443]	-946	137.5	22	85	711	G[503]	-2266	137.5	22	85
652	G[444]	-968	247.5	22	85	712	G[504]	-2288	247.5	22	85
653	G[445]	-990	137.5	22	85	713	G[505]	-2310	137.5	22	85
654	G[446]	-1012	247.5	22	85	714	G[506]	-2332	247.5	22	85
655	G[447]	-1034	137.5	22	85	715	G[507]	-2354	137.5	22	85
656	G[448]	-1056	247.5	22	85	716	G[508]	-2376	247.5	22	85
657	G[449]	-1078	137.5	22	85	717	G[509]	-2398	137.5	22	85
658	G[450]	-1100	247.5	22	85	718	G[510]	-2420	247.5	22	85
659	G[451]	-1122	137.5	22	85	719	G[511]	-2442	137.5	22	85
660	G[452]	-1144	247.5	22	85	720	G[512]	-2464	247.5	22	85

Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
721	G[513]	-2486	137.5	22	85	781	G[573]	-3806	137.5	22	85
722	G[514]	-2508	247.5	22	85	782	G[574]	-3828	247.5	22	85
723	G[515]	-2530	137.5	22	85	783	G[575]	-3850	137.5	22	85
724	G[516]	-2552	247.5	22	85	784	G[576]	-3872	247.5	22	85
725	G[517]	-2574	137.5	22	85	785	G[577]	-3894	137.5	22	85
726	G[518]	-2596	247.5	22	85	786	G[578]	-3916	247.5	22	85
727	G[519]	-2618	137.5	22	85	787	G[579]	-3938	137.5	22	85
728	G[520]	-2640	247.5	22	85	788	G[580]	-3960	247.5	22	85
729	G[521]	-2662	137.5	22	85	789	G[581]	-3982	137.5	22	85
730	G[522]	-2684	247.5	22	85	790	G[582]	-4004	247.5	22	85
731	G[523]	-2706	137.5	22	85	791	G[583]	-4026	137.5	22	85
732	G[524]	-2728	247.5	22	85	792	G[584]	-4048	247.5	22	85
733	G[525]	-2750	137.5	22	85	793	G[585]	-4070	137.5	22	85
734	G[526]	-2772	247.5	22	85	794	G[586]	-4092	247.5	22	85
735	G[527]	-2794	137.5	22	85	795	G[587]	-4114	137.5	22	85
736	G[528]	-2816	247.5	22	85	796	G[588]	-4136	247.5	22	85
737	G[529]	-2838	137.5	22	85	797	G[589]	-4158	137.5	22	85
738	G[530]	-2860	247.5	22	85	798	G[590]	-4180	247.5	22	85
739	G[531]	-2882	137.5	22	85	799	G[591]	-4202	137.5	22	85
740	G[532]	-2904	247.5	22	85	800	G[592]	-4224	247.5	22	85
741	G[533]	-2926	137.5	22	85	801	G[593]	-4246	137.5	22	85
742	G[534]	-2948	247.5	22	85	802	G[594]	-4268	247.5	22	85
743	G[535]	-2970	137.5	22	85	803	G[595]	-4290	137.5	22	85
744	G[536]	-2992	247.5	22	85	804	G[596]	-4312	247.5	22	85
745	G[537]	-3014	137.5	22	85	805	G[597]	-4334	137.5	22	85
746	G[538]	-3036	247.5	22	85	806	G[598]	-4356	247.5	22	85
747	G[539]	-3058	137.5	22	85	807	G[599]	-4378	137.5	22	85
748	G[540]	-3080	247.5	22	85	808	G[600]	-4400	247.5	22	85
749	G[541]	-3102	137.5	22	85	809	G[601]	-4422	137.5	22	85
750	G[542]	-3124	247.5	22	85	810	G[602]	-4444	247.5	22	85
751	G[543]	-3146	137.5	22	85	811	G[603]	-4466	137.5	22	85
752	G[544]	-3168	247.5	22	85	812	G[604]	-4488	247.5	22	85
753	G[545]	-3190	137.5	22	85	813	G[605]	-4510	137.5	22	85
754	G[546]	-3212	247.5	22	85	814	G[606]	-4532	247.5	22	85
755	G[547]	-3234	137.5	22	85	815	G[607]	-4554	137.5	22	85
756	G[548]	-3256	247.5	22	85	816	G[608]	-4576	247.5	22	85
757	G[549]	-3278	137.5	22	85	817	G[609]	-4598	137.5	22	85
758	G[550]	-3300	247.5	22	85	818	G[610]	-4620	247.5	22	85
759	G[551]	-3322	137.5	22	85	819	G[611]	-4642	137.5	22	85
760	G[552]	-3344	247.5	22	85	820	G[612]	-4664	247.5	22	85
761	G[553]	-3366	137.5	22	85	821	G[613]	-4686	137.5	22	85
762	G[554]	-3388	247.5	22	85	822	G[614]	-4708	247.5	22	85
763	G[555]	-3410	137.5	22	85	823	G[615]	-4730	137.5	22	85
764	G[556]	-3432	247.5	22	85	824	G[616]	-4752	247.5	22	85
765	G[557]	-3454	137.5	22	85	825	G[617]	-4774	137.5	22	85
766	G[558]	-3476	247.5	22	85	826	G[618]	-4796	247.5	22	85
767	G[559]	-3498	137.5	22	85	827	G[619]	-4818	137.5	22	85
768	G[560]	-3520	247.5	22	85	828	G[620]	-4840	247.5	22	85
769	G[561]	-3542	137.5	22	85	829	G[621]	-4862	137.5	22	85
770	G[562]	-3564	247.5	22	85	830	G[622]	-4884	247.5	22	85
771	G[563]	-3586	137.5	22	85	831	G[623]	-4906	137.5	22	85
772	G[564]	-3608	247.5	22	85	832	G[624]	-4928	247.5	22	85
773	G[565]	-3630	137.5	22	85	833	G[625]	-4950	137.5	22	85
774	G[566]	-3652	247.5	22	85	834	G[626]	-4972	247.5	22	85
775	G[567]	-3674	137.5	22	85	835	G[627]	-4994	137.5	22	85
776	G[568]	-3696	247.5	22	85	836	G[628]	-5016	247.5	22	85
777	G[569]	-3718	137.5	22	85	837	G[629]	-5038	137.5	22	85
778	G[570]	-3740	247.5	22	85	838	G[630]	-5060	247.5	22	85
779	G[571]	-3762	137.5	22	85	839	G[631]	-5082	137.5	22	85
780	G[572]	-3784	247.5	22	85	840	G[632]	-5104	247.5	22	85

Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
841	G[633]	-5126	137.5	22	85	901	G[693]	-6446	137.5	22	85
842	G[634]	-5148	247.5	22	85	902	G[694]	-6468	247.5	22	85
843	G[635]	-5170	137.5	22	85	903	G[695]	-6490	137.5	22	85
844	G[636]	-5192	247.5	22	85	904	G[696]	-6512	247.5	22	85
845	G[637]	-5214	137.5	22	85	905	G[697]	-6534	137.5	22	85
846	G[638]	-5236	247.5	22	85	906	G[698]	-6556	247.5	22	85
847	G[639]	-5258	137.5	22	85	907	G[699]	-6578	137.5	22	85
848	G[640]	-5280	247.5	22	85	908	G[700]	-6600	247.5	22	85
849	G[641]	-5302	137.5	22	85	909	G[701]	-6622	137.5	22	85
850	G[642]	-5324	247.5	22	85	910	G[702]	-6644	247.5	22	85
851	G[643]	-5346	137.5	22	85	911	G[703]	-6666	137.5	22	85
852	G[644]	-5368	247.5	22	85	912	G[704]	-6688	247.5	22	85
853	G[645]	-5390	137.5	22	85	913	G[705]	-6710	137.5	22	85
854	G[646]	-5412	247.5	22	85	914	G[706]	-6732	247.5	22	85
855	G[647]	-5434	137.5	22	85	915	G[707]	-6754	137.5	22	85
856	G[648]	-5456	247.5	22	85	916	G[708]	-6776	247.5	22	85
857	G[649]	-5478	137.5	22	85	917	G[709]	-6798	137.5	22	85
858	G[650]	-5500	247.5	22	85	918	G[710]	-6820	247.5	22	85
859	G[651]	-5522	137.5	22	85	919	G[711]	-6842	137.5	22	85
860	G[652]	-5544	247.5	22	85	920	G[712]	-6864	247.5	22	85
861	G[653]	-5566	137.5	22	85	921	G[713]	-6886	137.5	22	85
862	G[654]	-5588	247.5	22	85	922	G[714]	-6908	247.5	22	85
863	G[655]	-5610	137.5	22	85	923	G[715]	-6930	137.5	22	85
864	G[656]	-5632	247.5	22	85	924	G[716]	-6952	247.5	22	85
865	G[657]	-5654	137.5	22	85	925	G[717]	-6974	137.5	22	85
866	G[658]	-5676	247.5	22	85	926	G[718]	-6996	247.5	22	85
867	G[659]	-5698	137.5	22	85	927	G[719]	-7018	137.5	22	85
868	G[660]	-5720	247.5	22	85	928	G[720]	-7040	247.5	22	85
869	G[661]	-5742	137.5	22	85	929	G[721]	-7062	137.5	22	85
870	G[662]	-5764	247.5	22	85	930	G[722]	-7084	247.5	22	85
871	G[663]	-5786	137.5	22	85	931	G[723]	-7106	137.5	22	85
872	G[664]	-5808	247.5	22	85	932	G[724]	-7128	247.5	22	85
873	G[665]	-5830	137.5	22	85	933	G[725]	-7150	137.5	22	85
874	G[666]	-5852	247.5	22	85	934	G[726]	-7172	247.5	22	85
875	G[667]	-5874	137.5	22	85	935	G[727]	-7194	137.5	22	85
876	G[668]	-5896	247.5	22	85	936	G[728]	-7216	247.5	22	85
877	G[669]	-5918	137.5	22	85	937	G[729]	-7238	137.5	22	85
878	G[670]	-5940	247.5	22	85	938	G[730]	-7260	247.5	22	85
879	G[671]	-5962	137.5	22	85	939	G[731]	-7282	137.5	22	85
880	G[672]	-5984	247.5	22	85	940	G[732]	-7304	247.5	22	85
881	G[673]	-6006	137.5	22	85	941	G[733]	-7326	137.5	22	85
882	G[674]	-6028	247.5	22	85	942	G[734]	-7348	247.5	22	85
883	G[675]	-6050	137.5	22	85	943	G[735]	-7370	137.5	22	85
884	G[676]	-6072	247.5	22	85	944	G[736]	-7392	247.5	22	85
885	G[677]	-6094	137.5	22	85	945	G[737]	-7414	137.5	22	85
886	G[678]	-6116	247.5	22	85	946	G[738]	-7436	247.5	22	85
887	G[679]	-6138	137.5	22	85	947	G[739]	-7458	137.5	22	85
888	G[680]	-6160	247.5	22	85	948	G[740]	-7480	247.5	22	85
889	G[681]	-6182	137.5	22	85	949	G[741]	-7502	137.5	22	85
890	G[682]	-6204	247.5	22	85	950	G[742]	-7524	247.5	22	85
891	G[683]	-6226	137.5	22	85	951	G[743]	-7546	137.5	22	85
892	G[684]	-6248	247.5	22	85	952	G[744]	-7568	247.5	22	85
893	G[685]	-6270	137.5	22	85	953	G[745]	-7590	137.5	22	85
894	G[686]	-6292	247.5	22	85	954	G[746]	-7612	247.5	22	85
895	G[687]	-6314	137.5	22	85	955	G[747]	-7634	137.5	22	85
896	G[688]	-6336	247.5	22	85	956	G[748]	-7656	247.5	22	85
897	G[689]	-6358	137.5	22	85	957	G[749]	-7678	137.5	22	85
898	G[690]	-6380	247.5	22	85	958	G[750]	-7700	247.5	22	85
899	G[691]	-6402	137.5	22	85	959	G[751]	-7722	137.5	22	85
900	G[692]	-6424	247.5	22	85	960	G[752]	-7744	247.5	22	85

Pad No.	Designation	CX	CY	Width	Height	Pad No.	Designation	CX	CY	Width	Height
961	G[753]	-7766	137.5	22	85	1021	CLK	-9402.5	150	55	40
962	G[754]	-7788	247.5	22	85	1022	CLK	-9477.5	150	55	40
963	G[755]	-7810	137.5	22	85	1023	PATH1	-9477.5	90	55	40
964	G[756]	-7832	247.5	22	85	1024	PATH1	-9402.5	90	55	40
965	G[757]	-7854	137.5	22	85	1025	STVU	-9402.5	30	55	40
966	G[758]	-7876	247.5	22	85	1026	STVU	-9477.5	30	55	40
967	G[759]	-7898	137.5	22	85	1027	VGG	-9477.5	-30	55	40
968	G[760]	-7920	247.5	22	85	1028	VGG	-9402.5	-30	55	40
969	G[761]	-7942	137.5	22	85	1029	VEEL	-9402.5	-90	55	40
970	G[762]	-7964	247.5	22	85	1030	VEE	-9477.5	-90	55	40
971	G[763]	-7986	137.5	22	85	1031	VCC	-9477.5	-150	55	40
972	G[764]	-8008	247.5	22	85	1032	VCC	-9402.5	-150	55	40
973	G[765]	-8030	137.5	22	85	1033	GND	-9402.5	-210	55	40
974	G[766]	-8052	247.5	22	85	1034	GND	-9477.5	-210	55	40
975	G[767]	-8074	137.5	22	85	1035	MODE1	-9477.5	-270	55	40
976	G[768]	-8096	247.5	22	85	1036	MODE1	-9402.5	-270	55	40
977	G[769]	-8118	137.5	22	85	1037	MODE0	-9327.5	-270	55	40
978	G[770]	-8140	247.5	22	85	1038	MODE0	-9252.5	-270	55	40
979	G[771]	-8162	137.5	22	85	-	AL_MARK_L	-9085	120	120	120
980	G[772]	-8184	247.5	22	85	-	AL_MARK_R	9085	120	120	120
981	G[773]	-8206	137.5	22	85						
982	G[774]	-8228	247.5	22	85						
983	G[775]	-8250	137.5	22	85						
984	G[776]	-8272	247.5	22	85						
985	G[777]	-8294	137.5	22	85						
986	G[778]	-8316	247.5	22	85						
987	G[779]	-8338	137.5	22	85						
988	G[780]	-8360	247.5	22	85						
989	G[781]	-8382	137.5	22	85						
990	G[782]	-8404	247.5	22	85						
991	G[783]	-8426	137.5	22	85						
992	G[784]	-8448	247.5	22	85						
993	G[785]	-8470	137.5	22	85						
994	G[786]	-8492	247.5	22	85						
995	G[787]	-8514	137.5	22	85						
996	G[788]	-8536	247.5	22	85						
997	G[789]	-8558	137.5	22	85						
998	G[790]	-8580	247.5	22	85						
999	G[791]	-8602	137.5	22	85						
1000	G[792]	-8624	247.5	22	85						
1001	G[793]	-8646	137.5	22	85						
1002	G[794]	-8668	247.5	22	85						
1003	G[795]	-8690	137.5	22	85						
1004	G[796]	-8712	247.5	22	85						
1005	G[797]	-8734	137.5	22	85						
1006	G[798]	-8756	247.5	22	85						
1007	G[799]	-8778	137.5	22	85						
1008	G[800]	-8800	247.5	22	85						
1009	G[801]	-8822	137.5	22	85						
1010	SHIELDING_VEE[2]	-8844	247.5	22	85						
1011	PATH2	-8910	235	50	110						
1012	PATH2	-8980	235	50	110						
1013	XON	-9092.5	270	55	40						
1014	XON	-9167.5	270	55	40						
1015	OE	-9252.5	270	55	40						
1016	OE	-9327.5	270	55	40						
1017	OE	-9402.5	270	55	40						
1018	OE	-9477.5	270	55	40						
1019	U/D	-9477.5	210	55	40						
1020	U/D	-9402.5	210	55	40						