EK73002AB

Rev. 2.0

PRELIMINARY DATA SHEET

960/900/864/816-Output TFT LCD Gate Driver

fitipower integrated technology Inc.

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960/900/864/816-Output TFT LCD Gate Driver

1. GENERAL DESCRIPTION

The EK73002AB is a 960/900/864/816-Output 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.

2. FEATURES

- Gate driver for TFT-LCD panels
- 960/900/864/816 channel outputs and 2 channel outputs which are fixed to VGL
- Bi-directional shift function
- Driving voltage range: 40V
- logical supply voltage: 2.7 ~ 3.6V
- Cascade dot-expansion function
- CMOS silicon gate (P-type)
- COG solution
- Chip size=20188um*630um、Output bump pitch=40um
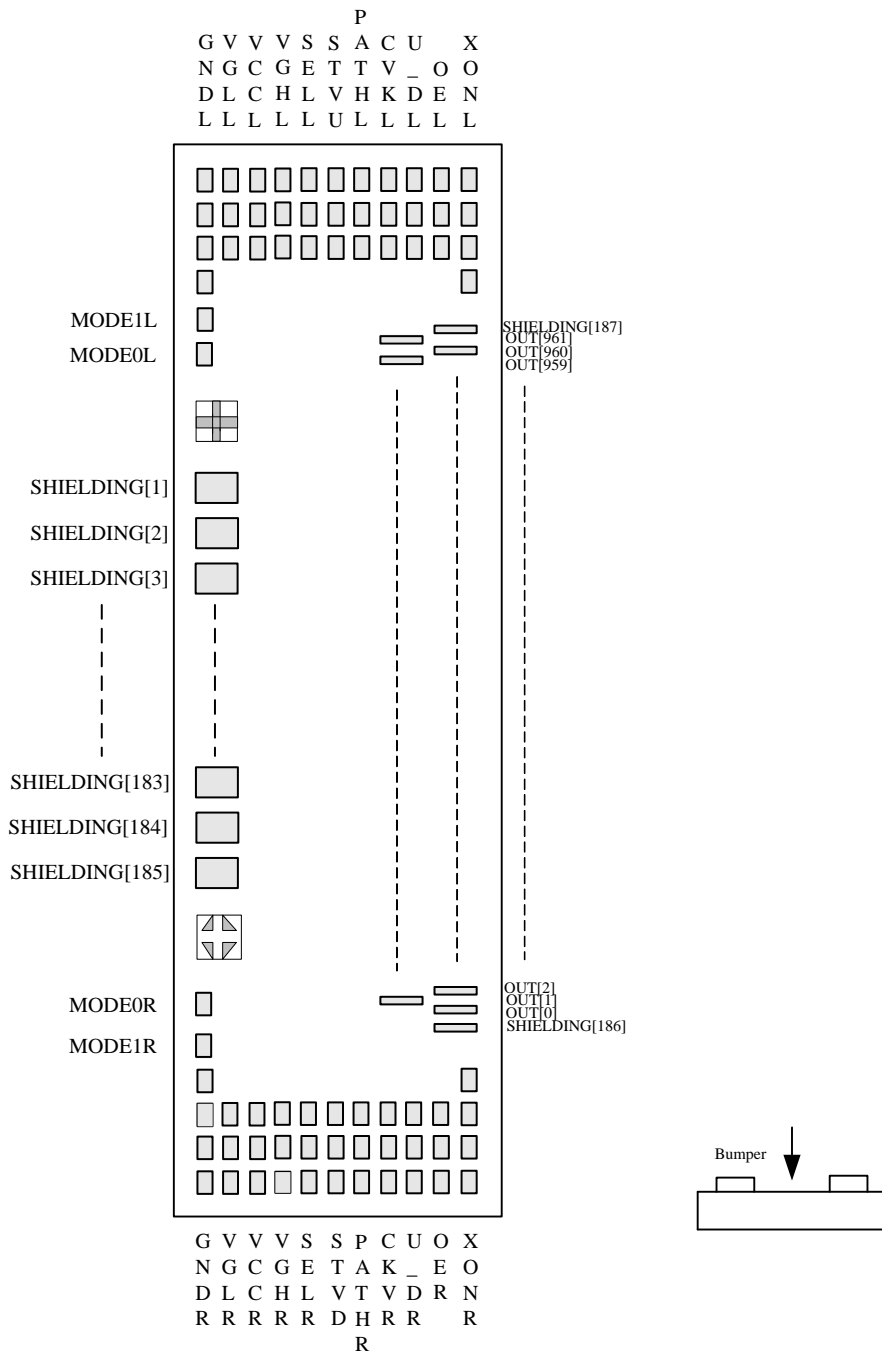
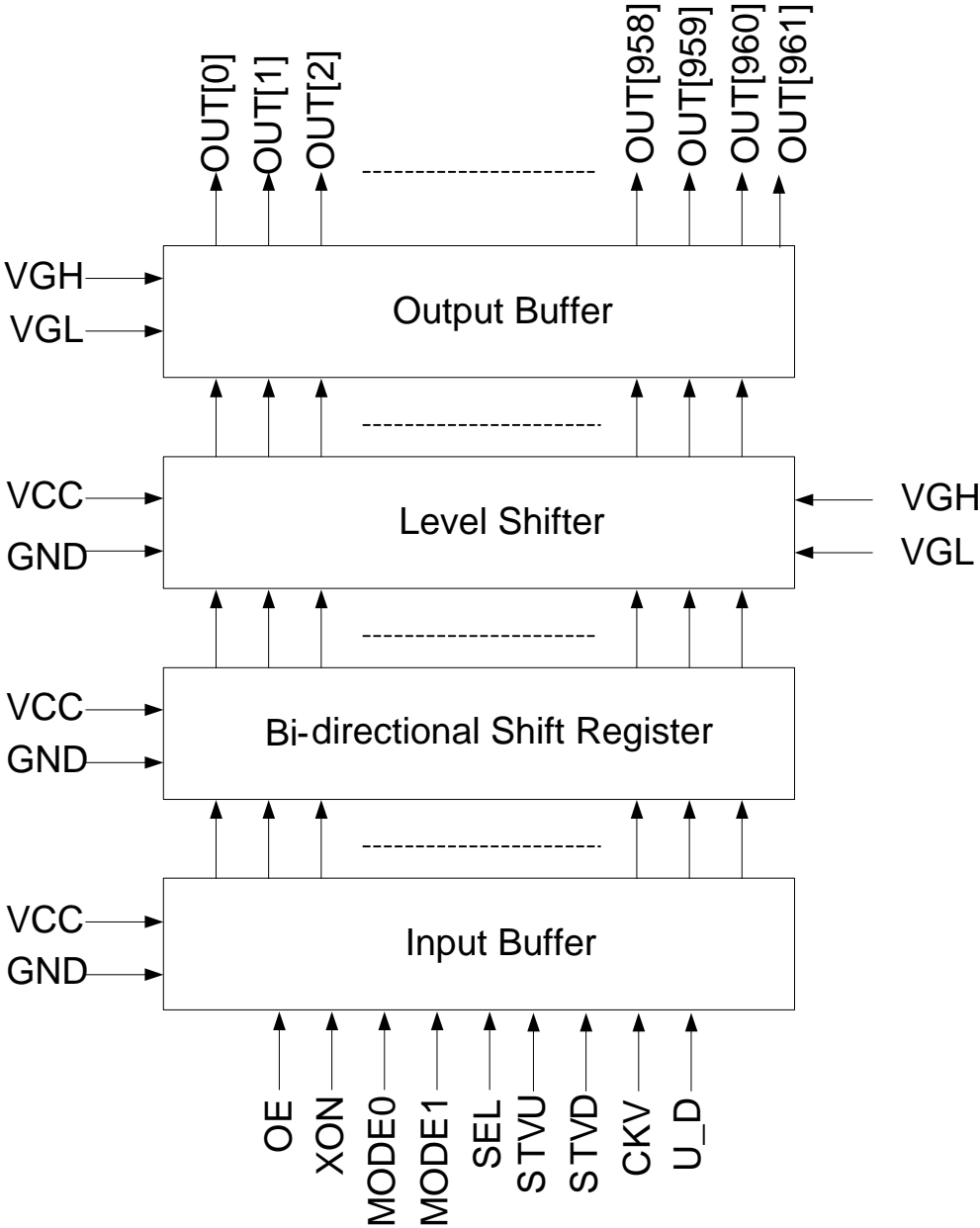**3. PIN ASSIGNMENT**

Figure 1. Pin Assignment

4. BLOCK DIAGRAM

Figure 2. Block Diagram

5. PIN DESCRIPTION

Pin Name	Pin Type	Description
CKVR/CKVL	I	This is the clock input for chip internal shift register. Data is shifted at each rising edge of this clock.
U_DR/U_D_L	I	This pin controls the output shifting direction as listed below. U_D = H: STVD(input)→OUT1→OUT2→···→OUT960→STVU(output) U_D = L: STVU(input)→OUT960→···→OUT2→OUT1→STVD(output)
STVD STVU	I/O	These two pins are the device start pulse input or output pin. The function of these two pins depends on the status of U_D pin. {table} 		STVD	STVU
U_D = H	input	output
U_D = L	output	input	
OER/OEL	I	This pin is used to control the channel output. When OER/OEL input is H, the driver outputs is fixed to VGL regardless CKV. However, the internal shift register is not cleared even if OE input is inactive.
XONR/XONL	IPH	When XON input pin is L, all the output pins are forced to VGH level. Note that this pin has higher priority than OE. Also it has an internal pull high resistor, keep it to VCC is preferred when unused. The chip internal shift register is not cleared when XON input is active.
MODE0R MODE0L MODE1R MODE1L	IPH	Output channels select input. MODE0/MODE1 are internally pulled high. Note: This pin should be connected to either "VCC" or "GND". {table} | MODE1	MODE0	Output Channels	Remark
1	1	960	Using OUT[1] ~ OUT[960] (Default)
1	0	900	Using OUT[1] ~ OUT[452] and OUT513 ~ OUT960 Other outputs are fixed to VGL
0	1	864	Using OUT[1] ~ OUT[432] and OUT[529] ~ OUT[960] Other outputs are fixed to VGL
0	0	816	Using OUT[1] ~ OUT[408] and OUT[553] ~ OUT[960] Other outputs are fixed to VGL	
SELR SELL	IPH	Output sequence control inputs. These two pins control the driver output sequence. Internally pulled high. SEL=H:Normal Operation SEL=L:for testing
OUT[1] ~ OUT[960]	O	The output voltage is either VGH or VGL for driving the gate electrode of TFT LCD panel depending on the data stored in shift register and the state of OE.
OUT[0]/ OUT[961]	O	LCD panel auxiliary pins, these pins always output VGL level.

Pin Name	Pin Type	Description
VCCR/VCCL	P	Digital power
GNDR/GNDL	P	Digital ground
VGHR/VGHL	P	Power supply for OUT[1] ~ OUT[960] drive output High
VGLR/VGLL	P	Power supply for OUT[1] ~ OUT[960] drive output Low.
PATHR PATHL	-	Linked together internal.

SHIELDING[1]~ SHIELDING[187]	-	This pin is connected to VGL internally. Not connected.

Note:
I: Input, IPH: Input with internal pull high, IPL: Input with internal low, O: Output, P: Power.

Pass line name

Pass Line No.	Pad Name	
1	SELR	SELL
2	OER	OEL
3	U_DR	U_DL
4	CKVR	CKVL
5	PATHR	PATHL
6	VGHR	VGHL
7	VCCR	VCCL
8	VGLR	VGLL
9	GNDR	GNDL
10	XONR	XONL
11	MODE1R	MODE1L
12	MODE0R	MODE0L

6. FUNCTION DESCRIPTION

6.1. Device operation

In the condition of U_D=H, the STVD start pulse input is sensed at the rising edge of CKV and stored in the first stage of shift register, which causes the first scan signal is output from the OUT[1]output pin. While stored data is transferred to the next stage shift register at the rising edge of next CKV, new data of STVD is sensed and stored simultaneously.

The output pin (OUT[1] to OUT[960]) supplies VGH voltage or VGL voltage to the LCD panel depending on the data stored in the shift register. For normal operation, a VGH voltage is output one by one from OUT[1] to OUT[960] in sync with CKV pulse.

After 960 CKV rising edge are past, the STVU goes up to high level at the 960th falling edge of CKV and goes down to low level at the 961th falling edge of CKV. This STVU output signal becomes the STVD start pulse input of next cascaded gate driver device.

During any "H" state of OE, the corresponding output channels are forced to VGL level regardless of CKV. The channel output returns to normal status as soon as OE go back to "L".

6.2. Relationship among U_D, and STV1/STV2

U_D	Start pulse		Data transfer direction
	Input	**Output**	
H	STVD	STVU	OUT[1]→OUT[2]→OUT[3]→ •••→OUT[960]
L	STVU	STVD	OUT[960]→OUT[959]→OUT[958]→ •••→OUT[1]

6.3. Device power supply

The EK73002ABLT must be used by the following conditions.

* VGH - VGL = 40V (max.)

* VGH - GND = 7 ~ 35V

Example:
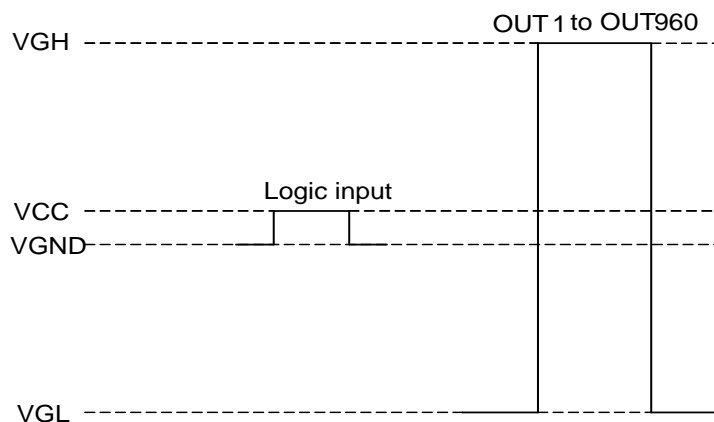
Figure 3. Device power supply

The input signal level of CKV, U_D, OE, STVD, STVU, MODE0, MODE1, SEL,XON have to swing between VCC and VGND. The signal output level of start pulse (STVU or STVD) to the next stage cascaded device is VCC for "H" and GND for "L".

6.4. Power ON/OFF sequence

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

When power on: VCC→VGL→VGH

When power off: VGH→VGL→VCC

VGH

VCC

VGND

VGL
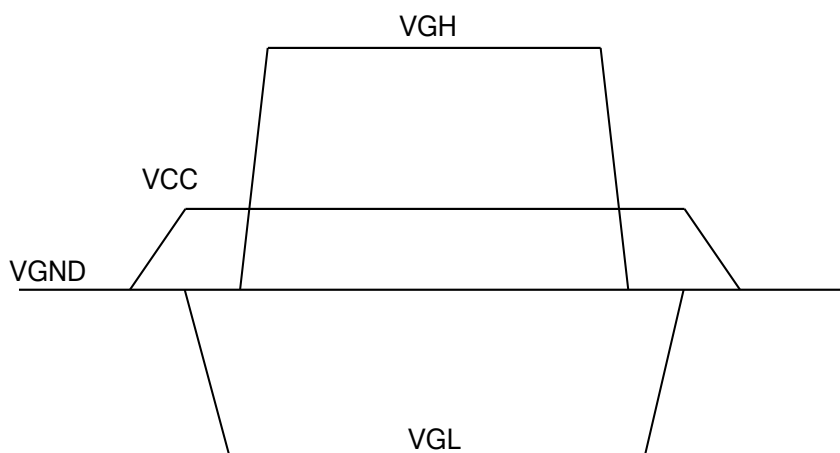
Figure 4. Power ON/OFF sequence

6.5. Start Pulse Input Limitation
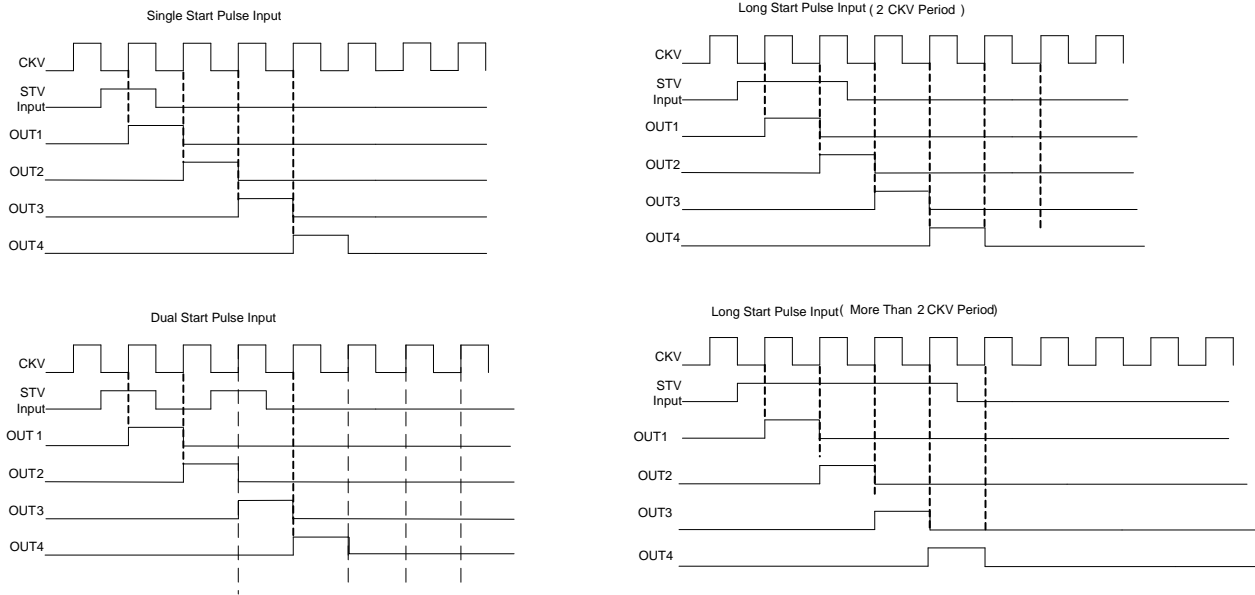
Figure 5. Start pulse Input limitation

Note1:The Output Turn-On Timing will change following by Start pulse wavform
Note2: For Dual Start Pulse Input,the space of STV between two pulse muse be 1 CKV period
Note3: For Long Start Pulse Input(more than 2 CKV Period),the Length of Start Pulse must be less than the Length of 6 CKV Period.

6.6. Operation Condition
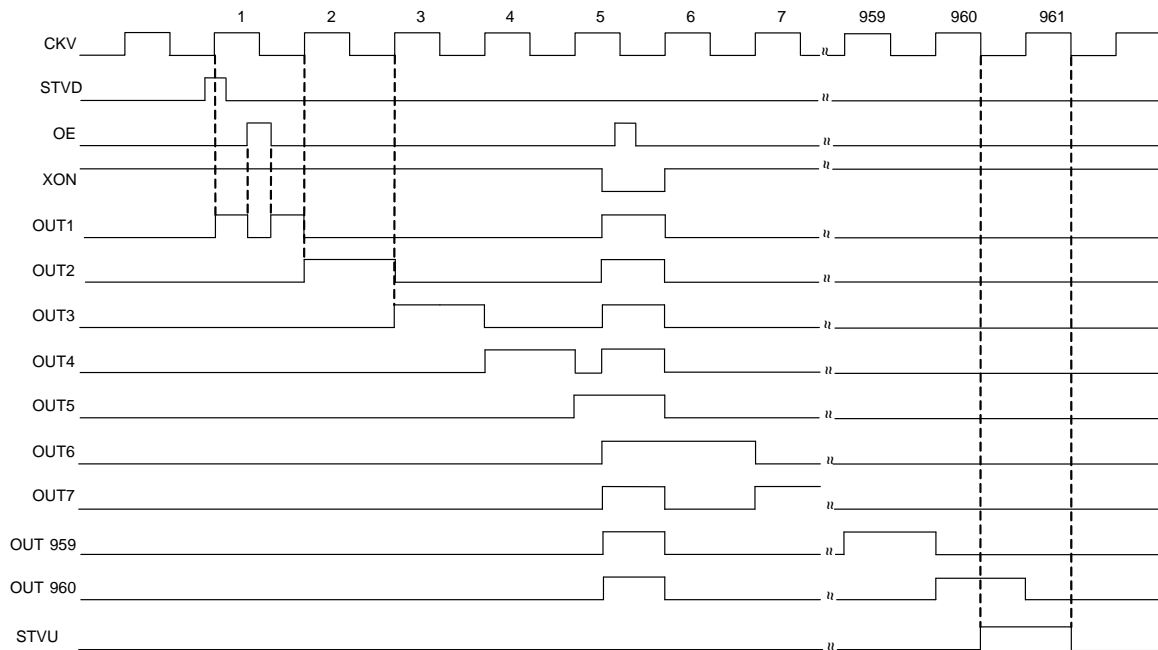
Figure 6. U_D="H"
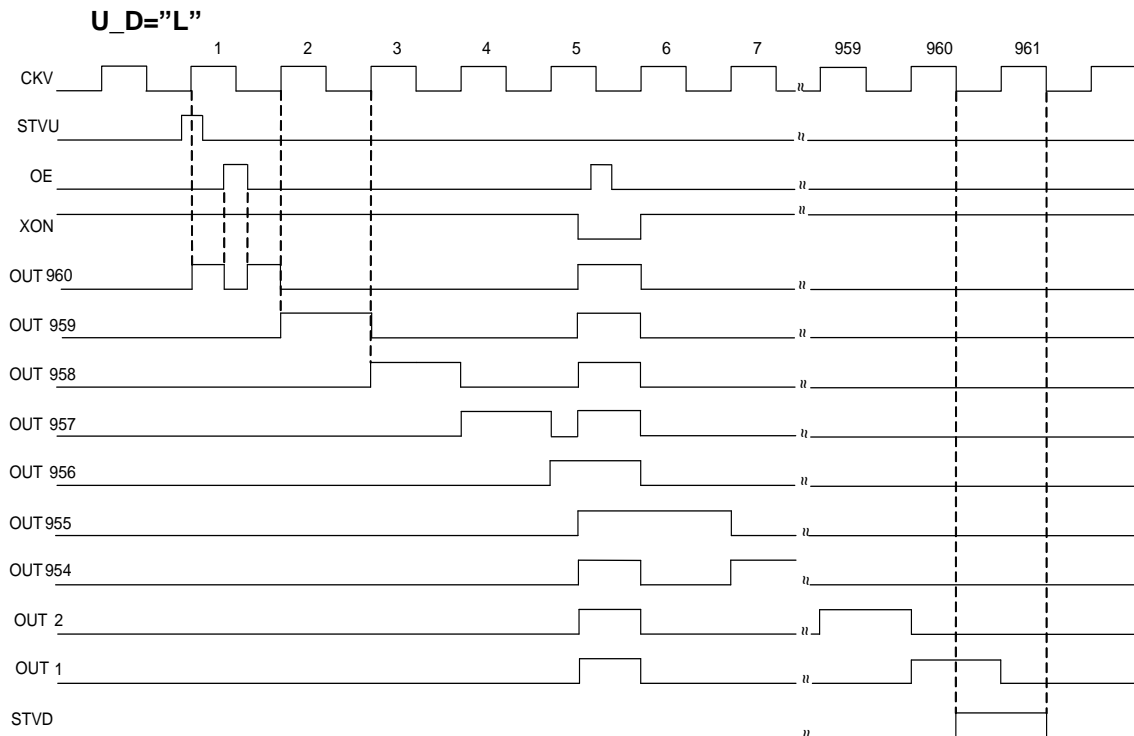
Figure 7. U_D="L"

7. ELECTRICAL SPECIFICATION

7.1. Absolute Maximum Ratings

Absolute Maximum Ratings (GND = 0 V)

Parameter	Symbol	Rating	Unit
Power supply voltage (1)	VGH	-0.3 to +42.0	V
Power supply voltage (2)	VCC	-0.3 to +7.0	V
Power supply voltage (3)	VGL	-20 to +0.3	V
Power supply voltage (4)	VGH - VGL	-0.3 ~ +40	V
Input voltage	V_{IN}	-0.3 to VCC+0.3	V
Storage temperature	T_{STG}	-55 to +125	°C

Note 1: All of the voltages listed above are with respective to GND = 0V.

Note 2: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above.

7.2. Recommended Operating Range

Recommended Operating Range (GND = 0V)

Parameter	Symbol	Rating			Unit
		Min.	Typ.	Max.	
Power supply voltage (1)	VGH	7	-	VGL+40	V
Power supply voltage (2)	VCC	2.7	3.3	3.6	V
Power supply voltage (3)	VGL	-20	-	-5	V
Power supply voltage (4)	VGH -VGL	12	-	40	V
Operation frequency	FCKV	-	-	200	KHz
Operation temperature	Ta	-20	-	+85	°C

7.3. DC Characteristics

DC Characteristic (VGH = 25V, VGL = -15V, VCC = 3.3V, VGND = 0V, Ta = 25℃)

Parameter	Symbol	Condition	Rating			Unit	Application pin
			Min.	Typ.	Max.		
Input H voltage	V_{IH}	-	0.7VCC	-	VCC	V	All input
Input L voltage	V_{IL}	-	0	-	0.3VCC	V	All input
Output H voltage	V_{OH}	IOH=200µA	VCC-0.3	-	VCC	V	STVU,D
Output L voltage	V_{OL}	IOL=200µA	0	-	0.3	V	STVU,D
Output H resistance	R_{OH}	V_X = VGH -0.5V	-	-	1000	Ω	OUT[1] ~ OUT[960]
Output L resistance	R_{OL}	V_X = VGL+0.5V	-	-	1000	Ω	OUT[1] ~ OUT[960]
Input leakage current	I_{IN}	-	-1.0	-	+1.0	µA	Note[2]
Pull high / low resistance	R_{PHL}	V_{IN}=GND V_{IN}=VCC	70	200	400	kΩ	XON, SEL, ,MODE
VGH Power consumption	I_{VGH}	Note[1]	-	-	200	µA	-
VGL Power consumption	I_{VGH}	Note[1]	-	-	-200	µA	-
VCC Power consumption	I_{VCC}	Note[1]	-	-	150	µA	-

Note 1: Power consumption with the following condition: Output no load, VGH=25V, VGL=-15V, VCC=3.3V, VIH =VCC, VIL=VGND, F_{CKV} = 60 KHz, OE = VIL, XON= VIH.

Note 2: All input except XON, SEL, MODE

7.4. AC Characteristics

AC Characteristics (VGH = 25V, VGL = -15V, VCC = 3.3V, GND = 0V, Ta = 25℃)

Parameter	Symbol	Condition	Rating			Unit
			Min.	Typ.	Max.	
CKV period	t_{CKV}	-	5	-	-	µs
CKV pulse width	t_{CKVH}, t_{CKVL}	50% duty cycle	2.5	-	-	µs
OE pulse width	t_{WOE}	-	1	-	-	µs
XON pulse width	t_{WXAO}	-	100	-	-	µs
Data setup time	t_{SU}	-	0.2	-	-	µs
Data hold time	t_{HD}	-	0.3	-	-	µs
CKV to output delay time	t_{PD1}	CL=200pF	-	-	0.9	µs
Start pulse output delay time	t_{PD2}	CL=20pF	-	-	0.5	µs
OE to output delay time	t_{PD3}	CL=200pF	-	-	0.9	µs
XON to output delay time	t_{PD4}	CL=200pF	-	-	100	µs

Note 1: The measurement point for all of above signals is at 50% of input/output amplitude.
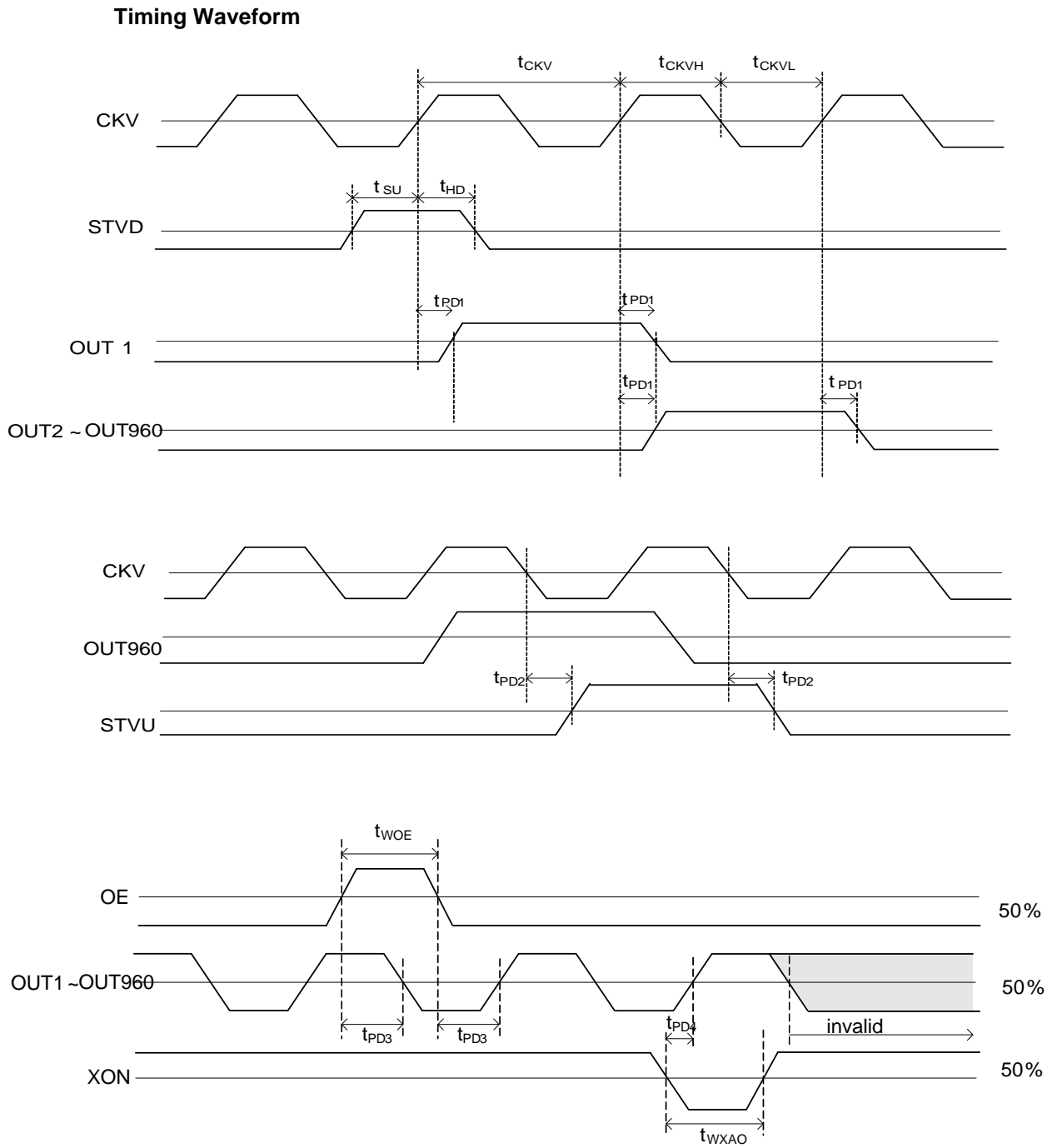
Timing Waveform

Figure 8. timing waveform

8. CHIP OUTLINE DIMENSIONS AND ALIGNMENT MARK

Alignment Mark Dimension (unit：um)
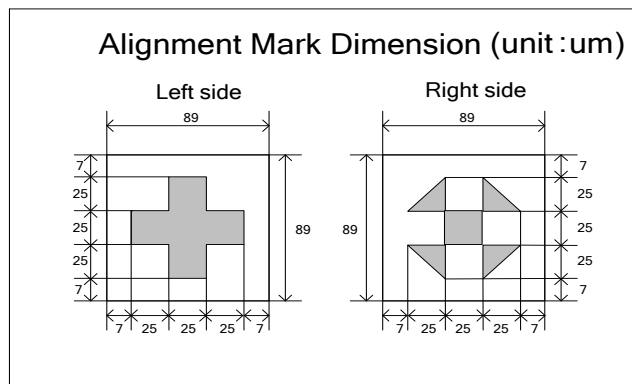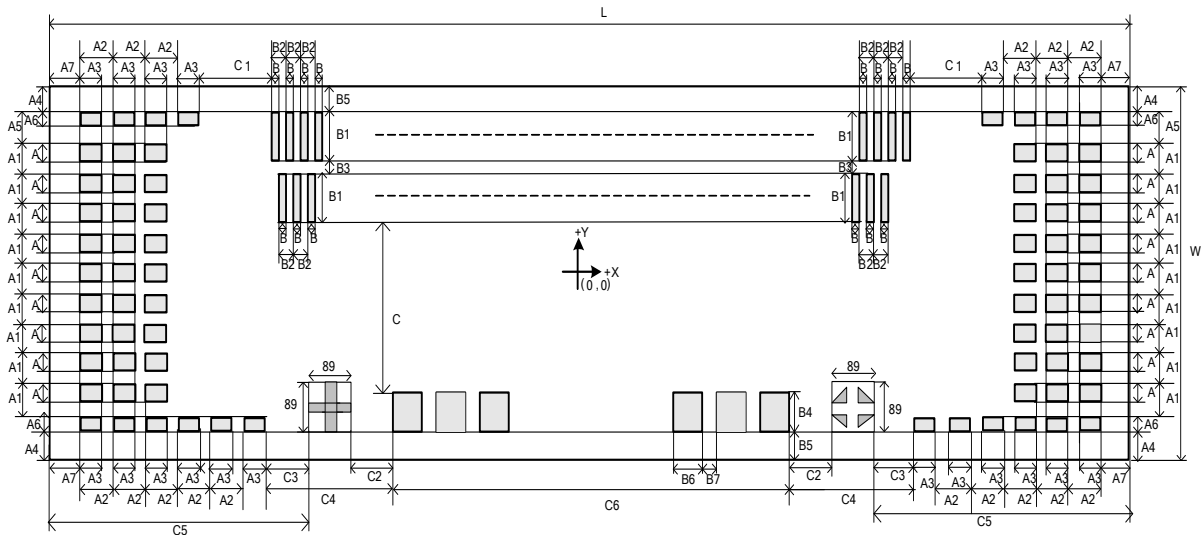
Symbol	Dimensions (um)	Symbol	Dimensions (um)	Symbol	Dimensions (um)
A	26	B2	40	C4	307
A1	52	B3	45	C5	666
A2	90	B4	50	C6	18460
A3	50	B5	47	L	20188(Max)
A4	47	B6	60	W	630(Max)
A5	47	B7	40		
A6	22	C	311		
A7	57	C1	70		
B	14	C2	109		
B1	65	C3	109		

(scribe line included)

9. PAD COORDINATE

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
1	GND	-10012	-257	50	SHIELDING[39]	-5400	-243	99	SHIELDING[88]	-500	-243
2	GND	-9922	-257	51	SHIELDING[40]	-5300	-243	100	SHIELDING[89]	-400	-243
3	VGL	-9922	-208	52	SHIELDING[41]	-5200	-243	101	SHIELDING[90]	-300	-243
4	VCC	-9922	-156	53	SHIELDING[42]	-5100	-243	102	SHIELDING[91]	-200	-243
5	GND	-9832	-257	54	SHIELDING[43]	-5000	-243	103	SHIELDING[92]	-100	-243
6	VGL	-9832	-208	55	SHIELDING[44]	-4900	-243	104	SHIELDING[93]	0	-243
7	VCC	-9832	-156	56	SHIELDING[45]	-4800	-243	105	SHIELDING[94]	100	-243
8	VGH	-9832	-104	57	SHIELDING[46]	-4700	-243	106	SHIELDING[95]	200	-243
9	GND	-9742	-257	58	SHIELDING[47]	-4600	-243	107	SHIELDING[96]	300	-243
10	MODE1L	-9652	-257	59	SHIELDING[48]	-4500	-243	108	SHIELDING[97]	400	-243
11	MODE0L	-9562	-257	60	SHIELDING[49]	-4400	-243	109	SHIELDING[98]	500	-243
12	SHIELDING[1]	-9200	-243	61	SHIELDING[50]	-4300	-243	110	SHIELDING[99]	600	-243
13	SHIELDING[2]	-9100	-243	62	SHIELDING[51]	-4200	-243	111	SHIELDING[100]	700	-243
14	SHIELDING[3]	-9000	-243	63	SHIELDING[52]	-4100	-243	112	SHIELDING[101]	800	-243
15	SHIELDING[4]	-8900	-243	64	SHIELDING[53]	-4000	-243	113	SHIELDING[102]	900	-243
16	SHIELDING[5]	-8800	-243	65	SHIELDING[54]	-3900	-243	114	SHIELDING[103]	1000	-243
17	SHIELDING[6]	-8700	-243	66	SHIELDING[55]	-3800	-243	115	SHIELDING[104]	1100	-243
18	SHIELDING[7]	-8600	-243	67	SHIELDING[56]	-3700	-243	116	SHIELDING[105]	1200	-243
19	SHIELDING[8]	-8500	-243	68	SHIELDING[57]	-3600	-243	117	SHIELDING[106]	1300	-243
20	SHIELDING[9]	-8400	-243	69	SHIELDING[58]	-3500	-243	118	SHIELDING[107]	1400	-243
21	SHIELDING[10]	-8300	-243	70	SHIELDING[59]	-3400	-243	119	SHIELDING[108]	1500	-243
22	SHIELDING[11]	-8200	-243	71	SHIELDING[60]	-3300	-243	120	SHIELDING[109]	1600	-243
23	SHIELDING[12]	-8100	-243	72	SHIELDING[61]	-3200	-243	121	SHIELDING[110]	1700	-243
24	SHIELDING[13]	-8000	-243	73	SHIELDING[62]	-3100	-243	122	SHIELDING[111]	1800	-243
25	SHIELDING[14]	-7900	-243	74	SHIELDING[63]	-3000	-243	123	SHIELDING[112]	1900	-243
26	SHIELDING[15]	-7800	-243	75	SHIELDING[64]	-2900	-243	124	SHIELDING[113]	2000	-243
27	SHIELDING[16]	-7700	-243	76	SHIELDING[65]	-2800	-243	125	SHIELDING[114]	2100	-243
28	SHIELDING[17]	-7600	-243	77	SHIELDING[66]	-2700	-243	126	SHIELDING[115]	2200	-243
29	SHIELDING[18]	-7500	-243	78	SHIELDING[67]	-2600	-243	127	SHIELDING[116]	2300	-243
30	SHIELDING[19]	-7400	-243	79	SHIELDING[68]	-2500	-243	128	SHIELDING[117]	2400	-243
31	SHIELDING[20]	-7300	-243	80	SHIELDING[69]	-2400	-243	129	SHIELDING[118]	2500	-243
32	SHIELDING[21]	-7200	-243	81	SHIELDING[70]	-2300	-243	130	SHIELDING[119]	2600	-243
33	SHIELDING[22]	-7100	-243	82	SHIELDING[71]	-2200	-243	131	SHIELDING[120]	2700	-243
34	SHIELDING[23]	-7000	-243	83	SHIELDING[72]	-2100	-243	132	SHIELDING[121]	2800	-243
35	SHIELDING[24]	-6900	-243	84	SHIELDING[73]	-2000	-243	133	SHIELDING[122]	2900	-243
36	SHIELDING[25]	-6800	-243	85	SHIELDING[74]	-1900	-243	134	SHIELDING[123]	3000	-243
37	SHIELDING[26]	-6700	-243	86	SHIELDING[75]	-1800	-243	135	SHIELDING[124]	3100	-243
38	SHIELDING[27]	-6600	-243	87	SHIELDING[76]	-1700	-243	136	SHIELDING[125]	3200	-243
39	SHIELDING[28]	-6500	-243	88	SHIELDING[77]	-1600	-243	137	SHIELDING[126]	3300	-243
40	SHIELDING[29]	-6400	-243	89	SHIELDING[78]	-1500	-243	138	SHIELDING[127]	3400	-243
41	SHIELDING[30]	-6300	-243	90	SHIELDING[79]	-1400	-243	139	SHIELDING[128]	3500	-243
42	SHIELDING[31]	-6200	-243	91	SHIELDING[80]	-1300	-243	140	SHIELDING[129]	3600	-243
43	SHIELDING[32]	-6100	-243	92	SHIELDING[81]	-1200	-243	141	SHIELDING[130]	3700	-243
44	SHIELDING[33]	-6000	-243	93	SHIELDING[82]	-1100	-243	142	SHIELDING[131]	3800	-243
45	SHIELDING[34]	-5900	-243	94	SHIELDING[83]	-1000	-243	143	SHIELDING[132]	3900	-243
46	SHIELDING[35]	-5800	-243	95	SHIELDING[84]	-900	-243	144	SHIELDING[133]	4000	-243
47	SHIELDING[36]	-5700	-243	96	SHIELDING[85]	-800	-243	145	SHIELDING[134]	4100	-243
48	SHIELDING[37]	-5600	-243	97	SHIELDING[86]	-700	-243	146	SHIELDING[135]	4200	-243
49	SHIELDING[38]	-5500	-243	98	SHIELDING[87]	-600	-243	147	SHIELDING[136]	4300	-243

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
148	SHIELDING[137]	4400	-243	199	GND	9742	-257	250	OUT[15]	9300	125.5
149	SHIELDING[138]	4500	-243	200	GND	9832	-257	251	OUT[16]	9280	235.5
150	SHIELDING[139]	4600	-243	201	VGL	9832	-208	252	OUT[17]	9260	125.5
151	SHIELDING[140]	4700	-243	202	VCC	9832	-156	253	OUT[18]	9240	235.5
152	SHIELDING[141]	4800	-243	203	VGH	9832	-104	254	OUT[19]	9220	125.5
153	SHIELDING[142]	4900	-243	204	GND	9922	-257	255	OUT[20]	9200	235.5
154	SHIELDING[143]	5000	-243	205	VGL	9922	-208	256	OUT[21]	9180	125.5
155	SHIELDING[144]	5100	-243	206	VCC	9922	-156	257	OUT[22]	9160	235.5
156	SHIELDING[145]	5200	-243	207	GND	10012	-257	258	OUT[23]	9140	125.5
157	SHIELDING[146]	5300	-243	208	VGL	10012	-208	259	OUT[24]	9120	235.5
158	SHIELDING[147]	5400	-243	209	Unput Label	10012	-156	260	OUT[25]	9100	125.5
159	SHIELDING[148]	5500	-243	210	VGH	9922	-104	261	OUT[26]	9080	235.5
160	SHIELDING[149]	5600	-243	211	Unput Label	10012	-104	262	OUT[27]	9060	125.5
161	SHIELDING[150]	5700	-243	212	SELR	9832	-52	263	OUT[28]	9040	235.5
162	SHIELDING[151]	5800	-243	213	SELR	9922	-52	264	OUT[29]	9020	125.5
163	SHIELDING[152]	5900	-243	214	SELR	10012	-52	265	OUT[30]	9000	235.5
164	SHIELDING[153]	6000	-243	215	STVD	9832	0	266	OUT[31]	8980	125.5
165	SHIELDING[154]	6100	-243	216	STVD	9922	0	267	OUT[32]	8960	235.5
166	SHIELDING[155]	6200	-243	217	STVD	10012	0	268	OUT[33]	8940	125.5
167	SHIELDING[156]	6300	-243	218	PATHR	9832	52	269	OUT[34]	8920	235.5
168	SHIELDING[157]	6400	-243	219	PATHR	9922	52	270	OUT[35]	8900	125.5
169	SHIELDING[158]	6500	-243	220	PATHR	10012	52	271	OUT[36]	8880	235.5
170	SHIELDING[159]	6600	-243	221	CLKR	9922	104	272	OUT[37]	8860	125.5
171	SHIELDING[160]	6700	-243	222	CLKR	10012	104	273	OUT[38]	8840	235.5
172	SHIELDING[161]	6800	-243	223	U_DR	10012	156	274	OUT[39]	8820	125.5
173	SHIELDING[162]	6900	-243	224	OER	10012	208	275	OUT[40]	8800	235.5
174	SHIELDING[163]	7000	-243	225	XONR	10012	257	276	OUT[41]	8780	125.5
175	SHIELDING[164]	7100	-243	226	U_DR	9922	156	277	OUT[42]	8760	235.5
176	SHIELDING[165]	7200	-243	227	OER	9922	208	278	OUT[43]	8740	125.5
177	SHIELDING[166]	7300	-243	228	XONR	9922	257	279	OUT[44]	8720	235.5
178	SHIELDING[167]	7400	-243	229	CLKR	9832	104	280	OUT[45]	8700	125.5
179	SHIELDING[168]	7500	-243	230	U_DR	9832	156	281	OUT[46]	8680	235.5
180	SHIELDING[169]	7600	-243	231	OER	9832	208	282	OUT[47]	8660	125.5
181	SHIELDING[170]	7700	-243	232	XONR	9832	257	283	OUT[48]	8640	235.5
182	SHIELDING[171]	7800	-243	233	XONR	9742	257	284	OUT[49]	8620	125.5
183	SHIELDING[172]	7900	-243	234	SHIELDING[186]	9640	235.5	285	OUT[50]	8600	235.5
184	SHIELDING[173]	8000	-243	235	OUT[0]	9600	235.5	286	OUT[51]	8580	125.5
185	SHIELDING[174]	8100	-243	236	OUT[1]	9580	125.5	287	OUT[52]	8560	235.5
186	SHIELDING[175]	8200	-243	237	OUT[2]	9560	235.5	288	OUT[53]	8540	125.5
187	SHIELDING[176]	8300	-243	238	OUT[3]	9540	125.5	289	OUT[54]	8520	235.5
188	SHIELDING[177]	8400	-243	239	OUT[4]	9520	235.5	290	OUT[55]	8500	125.5
189	SHIELDING[178]	8500	-243	240	OUT[5]	9500	125.5	291	OUT[56]	8480	235.5
190	SHIELDING[179]	8600	-243	241	OUT[6]	9480	235.5	292	OUT[57]	8460	125.5
191	SHIELDING[180]	8700	-243	242	OUT[7]	9460	125.5	293	OUT[58]	8440	235.5
192	SHIELDING[181]	8800	-243	243	OUT[8]	9440	235.5	294	OUT[59]	8420	125.5
193	SHIELDING[182]	8900	-243	244	OUT[9]	9420	125.5	295	OUT[60]	8400	235.5
194	SHIELDING[183]	9000	-243	245	OUT[10]	9400	235.5	296	OUT[61]	8380	125.5
195	SHIELDING[184]	9100	-243	246	OUT[11]	9380	125.5	297	OUT[62]	8360	235.5
196	SHIELDING[185]	9200	-243	247	OUT[12]	9360	235.5	298	OUT[63]	8340	125.5
197	MODE0R	9562	-257	248	OUT[13]	9340	125.5	299	OUT[64]	8320	235.5
198	MODE1R	9652	-257	249	OUT[14]	9320	235.5	300	OUT[65]	8300	125.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
301	OUT[66]	8280	235.5	352	OUT[117]	7260	125.5	403	OUT[168]	6240	235.5
302	OUT[67]	8260	125.5	353	OUT[118]	7240	235.5	404	OUT[169]	6220	125.5
303	OUT[68]	8240	235.5	354	OUT[119]	7220	125.5	405	OUT[170]	6200	235.5
304	OUT[69]	8220	125.5	355	OUT[120]	7200	235.5	406	OUT[171]	6180	125.5
305	OUT[70]	8200	235.5	356	OUT[121]	7180	125.5	407	OUT[172]	6160	235.5
306	OUT[71]	8180	125.5	357	OUT[122]	7160	235.5	408	OUT[173]	6140	125.5
307	OUT[72]	8160	235.5	358	OUT[123]	7140	125.5	409	OUT[174]	6120	235.5
308	OUT[73]	8140	125.5	359	OUT[124]	7120	235.5	410	OUT[175]	6100	125.5
309	OUT[74]	8120	235.5	360	OUT[125]	7100	125.5	411	OUT[176]	6080	235.5
310	OUT[75]	8100	125.5	361	OUT[126]	7080	235.5	412	OUT[177]	6060	125.5
311	OUT[76]	8080	235.5	362	OUT[127]	7060	125.5	413	OUT[178]	6040	235.5
312	OUT[77]	8060	125.5	363	OUT[128]	7040	235.5	414	OUT[179]	6020	125.5
313	OUT[78]	8040	235.5	364	OUT[129]	7020	125.5	415	OUT[180]	6000	235.5
314	OUT[79]	8020	125.5	365	OUT[130]	7000	235.5	416	OUT[181]	5980	125.5
315	OUT[80]	8000	235.5	366	OUT[131]	6980	125.5	417	OUT[182]	5960	235.5
316	OUT[81]	7980	125.5	367	OUT[132]	6960	235.5	418	OUT[183]	5940	125.5
317	OUT[82]	7960	235.5	368	OUT[133]	6940	125.5	419	OUT[184]	5920	235.5
318	OUT[83]	7940	125.5	369	OUT[134]	6920	235.5	420	OUT[185]	5900	125.5
319	OUT[84]	7920	235.5	370	OUT[135]	6900	125.5	421	OUT[186]	5880	235.5
320	OUT[85]	7900	125.5	371	OUT[136]	6880	235.5	422	OUT[187]	5860	125.5
321	OUT[86]	7880	235.5	372	OUT[137]	6860	125.5	423	OUT[188]	5840	235.5
322	OUT[87]	7860	125.5	373	OUT[138]	6840	235.5	424	OUT[189]	5820	125.5
323	OUT[88]	7840	235.5	374	OUT[139]	6820	125.5	425	OUT[190]	5800	235.5
324	OUT[89]	7820	125.5	375	OUT[140]	6800	235.5	426	OUT[191]	5780	125.5
325	OUT[90]	7800	235.5	376	OUT[141]	6780	125.5	427	OUT[192]	5760	235.5
326	OUT[91]	7780	125.5	377	OUT[142]	6760	235.5	428	OUT[193]	5740	125.5
327	OUT[92]	7760	235.5	378	OUT[143]	6740	125.5	429	OUT[194]	5720	235.5
328	OUT[93]	7740	125.5	379	OUT[144]	6720	235.5	430	OUT[195]	5700	125.5
329	OUT[94]	7720	235.5	380	OUT[145]	6700	125.5	431	OUT[196]	5680	235.5
330	OUT[95]	7700	125.5	381	OUT[146]	6680	235.5	432	OUT[197]	5660	125.5
331	OUT[96]	7680	235.5	382	OUT[147]	6660	125.5	433	OUT[198]	5640	235.5
332	OUT[97]	7660	125.5	383	OUT[148]	6640	235.5	434	OUT[199]	5620	125.5
333	OUT[98]	7640	235.5	384	OUT[149]	6620	125.5	435	OUT[200]	5600	235.5
334	OUT[99]	7620	125.5	385	OUT[150]	6600	235.5	436	OUT[201]	5580	125.5
335	OUT[100]	7600	235.5	386	OUT[151]	6580	125.5	437	OUT[202]	5560	235.5
336	OUT[101]	7580	125.5	387	OUT[152]	6560	235.5	438	OUT[203]	5540	125.5
337	OUT[102]	7560	235.5	388	OUT[153]	6540	125.5	439	OUT[204]	5520	235.5
338	OUT[103]	7540	125.5	389	OUT[154]	6520	235.5	440	OUT[205]	5500	125.5
339	OUT[104]	7520	235.5	390	OUT[155]	6500	125.5	441	OUT[206]	5480	235.5
340	OUT[105]	7500	125.5	391	OUT[156]	6480	235.5	442	OUT[207]	5460	125.5
341	OUT[106]	7480	235.5	392	OUT[157]	6460	125.5	443	OUT[208]	5440	235.5
342	OUT[107]	7460	125.5	393	OUT[158]	6440	235.5	444	OUT[209]	5420	125.5
343	OUT[108]	7440	235.5	394	OUT[159]	6420	125.5	445	OUT[210]	5400	235.5
344	OUT[109]	7420	125.5	395	OUT[160]	6400	235.5	446	OUT[211]	5380	125.5
345	OUT[110]	7400	235.5	396	OUT[161]	6380	125.5	447	OUT[212]	5360	235.5
346	OUT[111]	7380	125.5	397	OUT[162]	6360	235.5	448	OUT[213]	5340	125.5
347	OUT[112]	7360	235.5	398	OUT[163]	6340	125.5	449	OUT[214]	5320	235.5
348	OUT[113]	7340	125.5	399	OUT[164]	6320	235.5	450	OUT[215]	5300	125.5
349	OUT[114]	7320	235.5	400	OUT[165]	6300	125.5	451	OUT[216]	5280	235.5
350	OUT[115]	7300	125.5	401	OUT[166]	6280	235.5	452	OUT[217]	5260	125.5
351	OUT[116]	7280	235.5	402	OUT[167]	6260	125.5	453	OUT[218]	5240	235.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
454	OUT[219]	5220	125.5	505	OUT[270]	4200	235.5	556	OUT[321]	3180	125.5
455	OUT[220]	5200	235.5	506	OUT[271]	4180	125.5	557	OUT[322]	3160	235.5
456	OUT[221]	5180	125.5	507	OUT[272]	4160	235.5	558	OUT[323]	3140	125.5
457	OUT[222]	5160	235.5	508	OUT[273]	4140	125.5	559	OUT[324]	3120	235.5
458	OUT[223]	5140	125.5	509	OUT[274]	4120	235.5	560	OUT[325]	3100	125.5
459	OUT[224]	5120	235.5	510	OUT[275]	4100	125.5	561	OUT[326]	3080	235.5
460	OUT[225]	5100	125.5	511	OUT[276]	4080	235.5	562	OUT[327]	3060	125.5
461	OUT[226]	5080	235.5	512	OUT[277]	4060	125.5	563	OUT[328]	3040	235.5
462	OUT[227]	5060	125.5	513	OUT[278]	4040	235.5	564	OUT[329]	3020	125.5
463	OUT[228]	5040	235.5	514	OUT[279]	4020	125.5	565	OUT[330]	3000	235.5
464	OUT[229]	5020	125.5	515	OUT[280]	4000	235.5	566	OUT[331]	2980	125.5
465	OUT[230]	5000	235.5	516	OUT[281]	3980	125.5	567	OUT[332]	2960	235.5
466	OUT[231]	4980	125.5	517	OUT[282]	3960	235.5	568	OUT[333]	2940	125.5
467	OUT[232]	4960	235.5	518	OUT[283]	3940	125.5	569	OUT[334]	2920	235.5
468	OUT[233]	4940	125.5	519	OUT[284]	3920	235.5	570	OUT[335]	2900	125.5
469	OUT[234]	4920	235.5	520	OUT[285]	3900	125.5	571	OUT[336]	2880	235.5
470	OUT[235]	4900	125.5	521	OUT[286]	3880	235.5	572	OUT[337]	2860	125.5
471	OUT[236]	4880	235.5	522	OUT[287]	3860	125.5	573	OUT[338]	2840	235.5
472	OUT[237]	4860	125.5	523	OUT[288]	3840	235.5	574	OUT[339]	2820	125.5
473	OUT[238]	4840	235.5	524	OUT[289]	3820	125.5	575	OUT[340]	2800	235.5
474	OUT[239]	4820	125.5	525	OUT[290]	3800	235.5	576	OUT[341]	2780	125.5
475	OUT[240]	4800	235.5	526	OUT[291]	3780	125.5	577	OUT[342]	2760	235.5
476	OUT[241]	4780	125.5	527	OUT[292]	3760	235.5	578	OUT[343]	2740	125.5
477	OUT[242]	4760	235.5	528	OUT[293]	3740	125.5	579	OUT[344]	2720	235.5
478	OUT[243]	4740	125.5	529	OUT[294]	3720	235.5	580	OUT[345]	2700	125.5
479	OUT[244]	4720	235.5	530	OUT[295]	3700	125.5	581	OUT[346]	2680	235.5
480	OUT[245]	4700	125.5	531	OUT[296]	3680	235.5	582	OUT[347]	2660	125.5
481	OUT[246]	4680	235.5	532	OUT[297]	3660	125.5	583	OUT[348]	2640	235.5
482	OUT[247]	4660	125.5	533	OUT[298]	3640	235.5	584	OUT[349]	2620	125.5
483	OUT[248]	4640	235.5	534	OUT[299]	3620	125.5	585	OUT[350]	2600	235.5
484	OUT[249]	4620	125.5	535	OUT[300]	3600	235.5	586	OUT[351]	2580	125.5
485	OUT[250]	4600	235.5	536	OUT[301]	3580	125.5	587	OUT[352]	2560	235.5
486	OUT[251]	4580	125.5	537	OUT[302]	3560	235.5	588	OUT[353]	2540	125.5
487	OUT[252]	4560	235.5	538	OUT[303]	3540	125.5	589	OUT[354]	2520	235.5
488	OUT[253]	4540	125.5	539	OUT[304]	3520	235.5	590	OUT[355]	2500	125.5
489	OUT[254]	4520	235.5	540	OUT[305]	3500	125.5	591	OUT[356]	2480	235.5
490	OUT[255]	4500	125.5	541	OUT[306]	3480	235.5	592	OUT[357]	2460	125.5
491	OUT[256]	4480	235.5	542	OUT[307]	3460	125.5	593	OUT[358]	2440	235.5
492	OUT[257]	4460	125.5	543	OUT[308]	3440	235.5	594	OUT[359]	2420	125.5
493	OUT[258]	4440	235.5	544	OUT[309]	3420	125.5	595	OUT[360]	2400	235.5
494	OUT[259]	4420	125.5	545	OUT[310]	3400	235.5	596	OUT[361]	2380	125.5
495	OUT[260]	4400	235.5	546	OUT[311]	3380	125.5	597	OUT[362]	2360	235.5
496	OUT[261]	4380	125.5	547	OUT[312]	3360	235.5	598	OUT[363]	2340	125.5
497	OUT[262]	4360	235.5	548	OUT[313]	3340	125.5	599	OUT[364]	2320	235.5
498	OUT[263]	4340	125.5	549	OUT[314]	3320	235.5	600	OUT[365]	2300	125.5
499	OUT[264]	4320	235.5	550	OUT[315]	3300	125.5	601	OUT[366]	2280	235.5
500	OUT[265]	4300	125.5	551	OUT[316]	3280	235.5	602	OUT[367]	2260	125.5
501	OUT[266]	4280	235.5	552	OUT[317]	3260	125.5	603	OUT[368]	2240	235.5
502	OUT[267]	4260	125.5	553	OUT[318]	3240	235.5	604	OUT[369]	2220	125.5
503	OUT[268]	4240	235.5	554	OUT[319]	3220	125.5	605	OUT[370]	2200	235.5
504	OUT[269]	4220	125.5	555	OUT[320]	3200	235.5	606	OUT[371]	2180	125.5

Pad No.	Name	X	Y
607	OUT[372]	2160	235.5
608	OUT[373]	2140	125.5
609	OUT[374]	2120	235.5
610	OUT[375]	2100	125.5
611	OUT[376]	2080	235.5
612	OUT[377]	2060	125.5
613	OUT[378]	2040	235.5
614	OUT[379]	2020	125.5
615	OUT[380]	2000	235.5
616	OUT[381]	1980	125.5
617	OUT[382]	1960	235.5
618	OUT[383]	1940	125.5
619	OUT[384]	1920	235.5
620	OUT[385]	1900	125.5
621	OUT[386]	1880	235.5
622	OUT[387]	1860	125.5
623	OUT[388]	1840	235.5
624	OUT[389]	1820	125.5
625	OUT[390]	1800	235.5
626	OUT[391]	1780	125.5
627	OUT[392]	1760	235.5
628	OUT[393]	1740	125.5
629	OUT[394]	1720	235.5
630	OUT[395]	1700	125.5
631	OUT[396]	1680	235.5
632	OUT[397]	1660	125.5
633	OUT[398]	1640	235.5
634	OUT[399]	1620	125.5
635	OUT[400]	1600	235.5
636	OUT[401]	1580	125.5
637	OUT[402]	1560	235.5
638	OUT[403]	1540	125.5
639	OUT[404]	1520	235.5
640	OUT[405]	1500	125.5
641	OUT[406]	1480	235.5
642	OUT[407]	1460	125.5
643	OUT[408]	1440	235.5
644	OUT[409]	1420	125.5
645	OUT[410]	1400	235.5
646	OUT[411]	1380	125.5
647	OUT[412]	1360	235.5
648	OUT[413]	1340	125.5
649	OUT[414]	1320	235.5
650	OUT[415]	1300	125.5
651	OUT[416]	1280	235.5
652	OUT[417]	1260	125.5
653	OUT[418]	1240	235.5
654	OUT[419]	1220	125.5
655	OUT[420]	1200	235.5
656	OUT[421]	1180	125.5
657	OUT[422]	1160	235.5
658	OUT[423]	1140	125.5
659	OUT[424]	1120	235.5
660	OUT[425]	1100	125.5
661	OUT[426]	1080	235.5
662	OUT[427]	1060	125.5
663	OUT[428]	1040	235.5
664	OUT[429]	1020	125.5
665	OUT[430]	1000	235.5
666	OUT[431]	980	125.5
667	OUT[432]	960	235.5
668	OUT[433]	940	125.5
669	OUT[434]	920	235.5
670	OUT[435]	900	125.5
671	OUT[436]	880	235.5
672	OUT[437]	860	125.5
673	OUT[438]	840	235.5
674	OUT[439]	820	125.5
675	OUT[440]	800	235.5
676	OUT[441]	780	125.5
677	OUT[442]	760	235.5
678	OUT[443]	740	125.5
679	OUT[444]	720	235.5
680	OUT[445]	700	125.5
681	OUT[446]	680	235.5
682	OUT[447]	660	125.5
683	OUT[448]	640	235.5
684	OUT[449]	620	125.5
685	OUT[450]	600	235.5
686	OUT[451]	580	125.5
687	OUT[452]	560	235.5
688	OUT[453]	540	125.5
689	OUT[454]	520	235.5
690	OUT[455]	500	125.5
691	OUT[456]	480	235.5
692	OUT[457]	460	125.5
693	OUT[458]	440	235.5
694	OUT[459]	420	125.5
695	OUT[460]	400	235.5
696	OUT[461]	380	125.5
697	OUT[462]	360	235.5
698	OUT[463]	340	125.5
699	OUT[464]	320	235.5
700	OUT[465]	300	125.5
701	OUT[466]	280	235.5
702	OUT[467]	260	125.5
703	OUT[468]	240	235.5
704	OUT[469]	220	125.5
705	OUT[470]	200	235.5
706	OUT[471]	180	125.5
707	OUT[472]	160	235.5
708	OUT[473]	140	125.5
709	OUT[474]	120	235.5
710	OUT[475]	100	125.5
711	OUT[476]	80	235.5
712	OUT[477]	60	125.5
713	OUT[478]	40	235.5
714	OUT[479]	20	125.5
715	OUT[480]	0	235.5
716	OUT[481]	-20	125.5
717	OUT[482]	-40	235.5
718	OUT[483]	-60	125.5
719	OUT[484]	-80	235.5
720	OUT[485]	-100	125.5
721	OUT[486]	-120	235.5
722	OUT[487]	-140	125.5
723	OUT[488]	-160	235.5
724	OUT[489]	-180	125.5
725	OUT[490]	-200	235.5
726	OUT[491]	-220	125.5
727	OUT[492]	-240	235.5
728	OUT[493]	-260	125.5
729	OUT[494]	-280	235.5
730	OUT[495]	-300	125.5
731	OUT[496]	-320	235.5
732	OUT[497]	-340	125.5
733	OUT[498]	-360	235.5
734	OUT[499]	-380	125.5
735	OUT[500]	-400	235.5
736	OUT[501]	-420	125.5
737	OUT[502]	-440	235.5
738	OUT[503]	-460	125.5
739	OUT[504]	-480	235.5
740	OUT[505]	-500	125.5
741	OUT[506]	-520	235.5
742	OUT[507]	-540	125.5
743	OUT[508]	-560	235.5
744	OUT[509]	-580	125.5
745	OUT[510]	-600	235.5
746	OUT[511]	-620	125.5
747	OUT[512]	-640	235.5
748	OUT[513]	-660	125.5
749	OUT[514]	-680	235.5
750	OUT[515]	-700	125.5
751	OUT[516]	-720	235.5
752	OUT[517]	-740	125.5
753	OUT[518]	-760	235.5
754	OUT[519]	-780	125.5
755	OUT[520]	-800	235.5
756	OUT[521]	-820	125.5
757	OUT[522]	-840	235.5
758	OUT[523]	-860	125.5
759	OUT[524]	-880	235.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
760	OUT[525]	-900	125.5	811	OUT[576]	-1920	235.5	862	OUT[627]	-2940	125.5
761	OUT[526]	-920	235.5	812	OUT[577]	-1940	125.5	863	OUT[628]	-2960	235.5
762	OUT[527]	-940	125.5	813	OUT[578]	-1960	235.5	864	OUT[629]	-2980	125.5
763	OUT[528]	-960	235.5	814	OUT[579]	-1980	125.5	865	OUT[630]	-3000	235.5
764	OUT[529]	-980	125.5	815	OUT[580]	-2000	235.5	866	OUT[631]	-3020	125.5
765	OUT[530]	-1000	235.5	816	OUT[581]	-2020	125.5	867	OUT[632]	-3040	235.5
766	OUT[531]	-1020	125.5	817	OUT[582]	-2040	235.5	868	OUT[633]	-3060	125.5
767	OUT[532]	-1040	235.5	818	OUT[583]	-2060	125.5	869	OUT[634]	-3080	235.5
768	OUT[533]	-1060	125.5	819	OUT[584]	-2080	235.5	870	OUT[635]	-3100	125.5
769	OUT[534]	-1080	235.5	820	OUT[585]	-2100	125.5	871	OUT[636]	-3120	235.5
770	OUT[535]	-1100	125.5	821	OUT[586]	-2120	235.5	872	OUT[637]	-3140	125.5
771	OUT[536]	-1120	235.5	822	OUT[587]	-2140	125.5	873	OUT[638]	-3160	235.5
772	OUT[537]	-1140	125.5	823	OUT[588]	-2160	235.5	874	OUT[639]	-3180	125.5
773	OUT[538]	-1160	235.5	824	OUT[589]	-2180	125.5	875	OUT[640]	-3200	235.5
774	OUT[539]	-1180	125.5	825	OUT[590]	-2200	235.5	876	OUT[641]	-3220	125.5
775	OUT[540]	-1200	235.5	826	OUT[591]	-2220	125.5	877	OUT[642]	-3240	235.5
776	OUT[541]	-1220	125.5	827	OUT[592]	-2240	235.5	878	OUT[643]	-3260	125.5
777	OUT[542]	-1240	235.5	828	OUT[593]	-2260	125.5	879	OUT[644]	-3280	235.5
778	OUT[543]	-1260	125.5	829	OUT[594]	-2280	235.5	880	OUT[645]	-3300	125.5
779	OUT[544]	-1280	235.5	830	OUT[595]	-2300	125.5	881	OUT[646]	-3320	235.5
780	OUT[545]	-1300	125.5	831	OUT[596]	-2320	235.5	882	OUT[647]	-3340	125.5
781	OUT[546]	-1320	235.5	832	OUT[597]	-2340	125.5	883	OUT[648]	-3360	235.5
782	OUT[547]	-1340	125.5	833	OUT[598]	-2360	235.5	884	OUT[649]	-3380	125.5
783	OUT[548]	-1360	235.5	834	OUT[599]	-2380	125.5	885	OUT[650]	-3400	235.5
784	OUT[549]	-1380	125.5	835	OUT[600]	-2400	235.5	886	OUT[651]	-3420	125.5
785	OUT[550]	-1400	235.5	836	OUT[601]	-2420	125.5	887	OUT[652]	-3440	235.5
786	OUT[551]	-1420	125.5	837	OUT[602]	-2440	235.5	888	OUT[653]	-3460	125.5
787	OUT[552]	-1440	235.5	838	OUT[603]	-2460	125.5	889	OUT[654]	-3480	235.5
788	OUT[553]	-1460	125.5	839	OUT[604]	-2480	235.5	890	OUT[655]	-3500	125.5
789	OUT[554]	-1480	235.5	840	OUT[605]	-2500	125.5	891	OUT[656]	-3520	235.5
790	OUT[555]	-1500	125.5	841	OUT[606]	-2520	235.5	892	OUT[657]	-3540	125.5
791	OUT[556]	-1520	235.5	842	OUT[607]	-2540	125.5	893	OUT[658]	-3560	235.5
792	OUT[557]	-1540	125.5	843	OUT[608]	-2560	235.5	894	OUT[659]	-3580	125.5
793	OUT[558]	-1560	235.5	844	OUT[609]	-2580	125.5	895	OUT[660]	-3600	235.5
794	OUT[559]	-1580	125.5	845	OUT[610]	-2600	235.5	896	OUT[661]	-3620	125.5
795	OUT[560]	-1600	235.5	846	OUT[611]	-2620	125.5	897	OUT[662]	-3640	235.5
796	OUT[561]	-1620	125.5	847	OUT[612]	-2640	235.5	898	OUT[663]	-3660	125.5
797	OUT[562]	-1640	235.5	848	OUT[613]	-2660	125.5	899	OUT[664]	-3680	235.5
798	OUT[563]	-1660	125.5	849	OUT[614]	-2680	235.5	900	OUT[665]	-3700	125.5
799	OUT[564]	-1680	235.5	850	OUT[615]	-2700	125.5	901	OUT[666]	-3720	235.5
800	OUT[565]	-1700	125.5	851	OUT[616]	-2720	235.5	902	OUT[667]	-3740	125.5
801	OUT[566]	-1720	235.5	852	OUT[617]	-2740	125.5	903	OUT[668]	-3760	235.5
802	OUT[567]	-1740	125.5	853	OUT[618]	-2760	235.5	904	OUT[669]	-3780	125.5
803	OUT[568]	-1760	235.5	854	OUT[619]	-2780	125.5	905	OUT[670]	-3800	235.5
804	OUT[569]	-1780	125.5	855	OUT[620]	-2800	235.5	906	OUT[671]	-3820	125.5
805	OUT[570]	-1800	235.5	856	OUT[621]	-2820	125.5	907	OUT[672]	-3840	235.5
806	OUT[571]	-1820	125.5	857	OUT[622]	-2840	235.5	908	OUT[673]	-3860	125.5
807	OUT[572]	-1840	235.5	858	OUT[623]	-2860	125.5	909	OUT[674]	-3880	235.5
808	OUT[573]	-1860	125.5	859	OUT[624]	-2880	235.5	910	OUT[675]	-3900	125.5
809	OUT[574]	-1880	235.5	860	OUT[625]	-2900	125.5	911	OUT[676]	-3920	235.5
810	OUT[575]	-1900	125.5	861	OUT[626]	-2920	235.5	912	OUT[677]	-3940	125.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
913	OUT[678]	-3960	235.5	964	OUT[729]	-4980	125.5	1015	OUT[780]	-6000	235.5
914	OUT[679]	-3980	125.5	965	OUT[730]	-5000	235.5	1016	OUT[781]	-6020	125.5
915	OUT[680]	-4000	235.5	966	OUT[731]	-5020	125.5	1017	OUT[782]	-6040	235.5
916	OUT[681]	-4020	125.5	967	OUT[732]	-5040	235.5	1018	OUT[783]	-6060	125.5
917	OUT[682]	-4040	235.5	968	OUT[733]	-5060	125.5	1019	OUT[784]	-6080	235.5
918	OUT[683]	-4060	125.5	969	OUT[734]	-5080	235.5	1020	OUT[785]	-6100	125.5
919	OUT[684]	-4080	235.5	970	OUT[735]	-5100	125.5	1021	OUT[786]	-6120	235.5
920	OUT[685]	-4100	125.5	971	OUT[736]	-5120	235.5	1022	OUT[787]	-6140	125.5
921	OUT[686]	-4120	235.5	972	OUT[737]	-5140	125.5	1023	OUT[788]	-6160	235.5
922	OUT[687]	-4140	125.5	973	OUT[738]	-5160	235.5	1024	OUT[789]	-6180	125.5
923	OUT[688]	-4160	235.5	974	OUT[739]	-5180	125.5	1025	OUT[790]	-6200	235.5
924	OUT[689]	-4180	125.5	975	OUT[740]	-5200	235.5	1026	OUT[791]	-6220	125.5
925	OUT[690]	-4200	235.5	976	OUT[741]	-5220	125.5	1027	OUT[792]	-6240	235.5
926	OUT[691]	-4220	125.5	977	OUT[742]	-5240	235.5	1028	OUT[793]	-6260	125.5
927	OUT[692]	-4240	235.5	978	OUT[743]	-5260	125.5	1029	OUT[794]	-6280	235.5
928	OUT[693]	-4260	125.5	979	OUT[744]	-5280	235.5	1030	OUT[795]	-6300	125.5
929	OUT[694]	-4280	235.5	980	OUT[745]	-5300	125.5	1031	OUT[796]	-6320	235.5
930	OUT[695]	-4300	125.5	981	OUT[746]	-5320	235.5	1032	OUT[797]	-6340	125.5
931	OUT[696]	-4320	235.5	982	OUT[747]	-5340	125.5	1033	OUT[798]	-6360	235.5
932	OUT[697]	-4340	125.5	983	OUT[748]	-5360	235.5	1034	OUT[799]	-6380	125.5
933	OUT[698]	-4360	235.5	984	OUT[749]	-5380	125.5	1035	OUT[800]	-6400	235.5
934	OUT[699]	-4380	125.5	985	OUT[750]	-5400	235.5	1036	OUT[801]	-6420	125.5
935	OUT[700]	-4400	235.5	986	OUT[751]	-5420	125.5	1037	OUT[802]	-6440	235.5
936	OUT[701]	-4420	125.5	987	OUT[752]	-5440	235.5	1038	OUT[803]	-6460	125.5
937	OUT[702]	-4440	235.5	988	OUT[753]	-5460	125.5	1039	OUT[804]	-6480	235.5
938	OUT[703]	-4460	125.5	989	OUT[754]	-5480	235.5	1040	OUT[805]	-6500	125.5
939	OUT[704]	-4480	235.5	990	OUT[755]	-5500	125.5	1041	OUT[806]	-6520	235.5
940	OUT[705]	-4500	125.5	991	OUT[756]	-5520	235.5	1042	OUT[807]	-6540	125.5
941	OUT[706]	-4520	235.5	992	OUT[757]	-5540	125.5	1043	OUT[808]	-6560	235.5
942	OUT[707]	-4540	125.5	993	OUT[758]	-5560	235.5	1044	OUT[809]	-6580	125.5
943	OUT[708]	-4560	235.5	994	OUT[759]	-5580	125.5	1045	OUT[810]	-6600	235.5
944	OUT[709]	-4580	125.5	995	OUT[760]	-5600	235.5	1046	OUT[811]	-6620	125.5
945	OUT[710]	-4600	235.5	996	OUT[761]	-5620	125.5	1047	OUT[812]	-6640	235.5
946	OUT[711]	-4620	125.5	997	OUT[762]	-5640	235.5	1048	OUT[813]	-6660	125.5
947	OUT[712]	-4640	235.5	998	OUT[763]	-5660	125.5	1049	OUT[814]	-6680	235.5
948	OUT[713]	-4660	125.5	999	OUT[764]	-5680	235.5	1050	OUT[815]	-6700	125.5
949	OUT[714]	-4680	235.5	1000	OUT[765]	-5700	125.5	1051	OUT[816]	-6720	235.5
950	OUT[715]	-4700	125.5	1001	OUT[766]	-5720	235.5	1052	OUT[817]	-6740	125.5
951	OUT[716]	-4720	235.5	1002	OUT[767]	-5740	125.5	1053	OUT[818]	-6760	235.5
952	OUT[717]	-4740	125.5	1003	OUT[768]	-5760	235.5	1054	OUT[819]	-6780	125.5
953	OUT[718]	-4760	235.5	1004	OUT[769]	-5780	125.5	1055	OUT[820]	-6800	235.5
954	OUT[719]	-4780	125.5	1005	OUT[770]	-5800	235.5	1056	OUT[821]	-6820	125.5
955	OUT[720]	-4800	235.5	1006	OUT[771]	-5820	125.5	1057	OUT[822]	-6840	235.5
956	OUT[721]	-4820	125.5	1007	OUT[772]	-5840	235.5	1058	OUT[823]	-6860	125.5
957	OUT[722]	-4840	235.5	1008	OUT[773]	-5860	125.5	1059	OUT[824]	-6880	235.5
958	OUT[723]	-4860	125.5	1009	OUT[774]	-5880	235.5	1060	OUT[825]	-6900	125.5
959	OUT[724]	-4880	235.5	1010	OUT[775]	-5900	125.5	1061	OUT[826]	-6920	235.5
960	OUT[725]	-4900	125.5	1011	OUT[776]	-5920	235.5	1062	OUT[827]	-6940	125.5
961	OUT[726]	-4920	235.5	1012	OUT[777]	-5940	125.5	1063	OUT[828]	-6960	235.5
962	OUT[727]	-4940	125.5	1013	OUT[778]	-5960	235.5	1064	OUT[829]	-6980	125.5
963	OUT[728]	-4960	235.5	1014	OUT[779]	-5980	125.5	1065	OUT[830]	-7000	235.5

Pad No.	Name	X	Y
1066	OUT[831]	-7020	125.5
1067	OUT[832]	-7040	235.5
1068	OUT[833]	-7060	125.5
1069	OUT[834]	-7080	235.5
1070	OUT[835]	-7100	125.5
1071	OUT[836]	-7120	235.5
1072	OUT[837]	-7140	125.5
1073	OUT[838]	-7160	235.5
1074	OUT[839]	-7180	125.5
1075	OUT[840]	-7200	235.5
1076	OUT[841]	-7220	125.5
1077	OUT[842]	-7240	235.5
1078	OUT[843]	-7260	125.5
1079	OUT[844]	-7280	235.5
1080	OUT[845]	-7300	125.5
1081	OUT[846]	-7320	235.5
1082	OUT[847]	-7340	125.5
1083	OUT[848]	-7360	235.5
1084	OUT[849]	-7380	125.5
1085	OUT[850]	-7400	235.5
1086	OUT[851]	-7420	125.5
1087	OUT[852]	-7440	235.5
1088	OUT[853]	-7460	125.5
1089	OUT[854]	-7480	235.5
1090	OUT[855]	-7500	125.5
1091	OUT[856]	-7520	235.5
1092	OUT[857]	-7540	125.5
1093	OUT[858]	-7560	235.5
1094	OUT[859]	-7580	125.5
1095	OUT[860]	-7600	235.5
1096	OUT[861]	-7620	125.5
1097	OUT[862]	-7640	235.5
1098	OUT[863]	-7660	125.5
1099	OUT[864]	-7680	235.5
1100	OUT[865]	-7700	125.5
1101	OUT[866]	-7720	235.5
1102	OUT[867]	-7740	125.5
1103	OUT[868]	-7760	235.5
1104	OUT[869]	-7780	125.5
1105	OUT[870]	-7800	235.5
1106	OUT[871]	-7820	125.5
1107	OUT[872]	-7840	235.5
1108	OUT[873]	-7860	125.5
1109	OUT[874]	-7880	235.5
1110	OUT[875]	-7900	125.5
1111	OUT[876]	-7920	235.5
1112	OUT[877]	-7940	125.5
1113	OUT[878]	-7960	235.5
1114	OUT[879]	-7980	125.5
1115	OUT[880]	-8000	235.5
1116	OUT[881]	-8020	125.5
1117	OUT[882]	-8040	235.5
1118	OUT[883]	-8060	125.5
1119	OUT[884]	-8080	235.5
1120	OUT[885]	-8100	125.5
1121	OUT[886]	-8120	235.5
1122	OUT[887]	-8140	125.5
1123	OUT[888]	-8160	235.5
1124	OUT[889]	-8180	125.5
1125	OUT[890]	-8200	235.5
1126	OUT[891]	-8220	125.5
1127	OUT[892]	-8240	235.5
1128	OUT[893]	-8260	125.5
1129	OUT[894]	-8280	235.5
1130	OUT[895]	-8300	125.5
1131	OUT[896]	-8320	235.5
1132	OUT[897]	-8340	125.5
1133	OUT[898]	-8360	235.5
1134	OUT[899]	-8380	125.5
1135	OUT[900]	-8400	235.5
1136	OUT[901]	-8420	125.5
1137	OUT[902]	-8440	235.5
1138	OUT[903]	-8460	125.5
1139	OUT[904]	-8480	235.5
1140	OUT[905]	-8500	125.5
1141	OUT[906]	-8520	235.5
1142	OUT[907]	-8540	125.5
1143	OUT[908]	-8560	235.5
1144	OUT[909]	-8580	125.5
1145	OUT[910]	-8600	235.5
1146	OUT[911]	-8620	125.5
1147	OUT[912]	-8640	235.5
1148	OUT[913]	-8660	125.5
1149	OUT[914]	-8680	235.5
1150	OUT[915]	-8700	125.5
1151	OUT[916]	-8720	235.5
1152	OUT[917]	-8740	125.5
1153	OUT[918]	-8760	235.5
1154	OUT[919]	-8780	125.5
1155	OUT[920]	-8800	235.5
1156	OUT[921]	-8820	125.5
1157	OUT[922]	-8840	235.5
1158	OUT[923]	-8860	125.5
1159	OUT[924]	-8880	235.5
1160	OUT[925]	-8900	125.5
1161	OUT[926]	-8920	235.5
1162	OUT[927]	-8940	125.5
1163	OUT[928]	-8960	235.5
1164	OUT[929]	-8980	125.5
1165	OUT[930]	-9000	235.5
1166	OUT[931]	-9020	125.5
1167	OUT[932]	-9040	235.5
1168	OUT[933]	-9060	125.5
1169	OUT[934]	-9080	235.5
1170	OUT[935]	-9100	125.5
1171	OUT[936]	-9120	235.5
1172	OUT[937]	-9140	125.5
1173	OUT[938]	-9160	235.5
1174	OUT[939]	-9180	125.5
1175	OUT[940]	-9200	235.5
1176	OUT[941]	-9220	125.5
1177	OUT[942]	-9240	235.5
1178	OUT[943]	-9260	125.5
1179	OUT[944]	-9280	235.5
1180	OUT[945]	-9300	125.5
1181	OUT[946]	-9320	235.5
1182	OUT[947]	-9340	125.5
1183	OUT[948]	-9360	235.5
1184	OUT[949]	-9380	125.5
1185	OUT[950]	-9400	235.5
1186	OUT[951]	-9420	125.5
1187	OUT[952]	-9440	235.5
1188	OUT[953]	-9460	125.5
1189	OUT[954]	-9480	235.5
1190	OUT[955]	-9500	125.5
1191	OUT[956]	-9520	235.5
1192	OUT[957]	-9540	125.5
1193	OUT[958]	-9560	235.5
1194	OUT[959]	-9580	125.5
1195	OUT[960]	-9600	235.5
1196	OUT[961]	-9620	125.5
1197	SHIELDING[187]	-9640	235.5
1198	XONL	-9742	257
1199	CLKL	-9832	104
1200	U_DL	-9832	156
1201	OEL	-9832	208
1202	XONL	-9832	257
1203	U_DL	-9922	156
1204	OEL	-9922	208
1205	XONL	-9922	257
1206	XONL	-10012	257
1207	OEL	-10012	208
1208	U_DL	-10012	156
1209	CLKL	-10012	104
1210	CLKL	-9922	104
1211	PATHL	-10012	52
1212	PATHL	-9922	52
1213	PATHL	-9832	52
1214	STVU	-10012	0
1215	STVU	-9922	0
1216	STVU	-9832	0
1217	SELL	-10012	-52
1218	SELL	-9922	-52

Pad No.	Name	X	Y
1219	SELL	-9832	-52
1220	Unput Label	-10012	-104
1221	VGH	-9922	-104
1222	Unput Label	-10012	-156
1223	VGL	-10012	-208
1224	ALWIN_L	-9383.5	-205.5
1225	ALWIN_R	9383.5	-205.5

10. DEFINITIONS

10.1. Data Sheet Status

Preliminary Data Sheet	This data sheet contains preliminary data; supplementary data may be published later.
Data Sheet	This data sheet contains final product specifications.

Contents in the document are subject to change without notice.

10.2. Life Support Application

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. fitipower customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify fitipower for any damages resulting from such improper use or sale.

11. REVISION HISTORY

Revision	Content	Date
1.0	New issue	2012/08/22
1.01	1.Modify chip size 2.Modify Chip outline dimensions AND aLIGNMENT MARK 3.Modify Pad coordinate	2018/03/12
2.0	1.Revise pad coordinate	2018/05/14