EK73002A

Rev. 1.0

DATA SHEET

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

fitipower integrated technology Inc.

Table of Contents

fitipower   EK73002A

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

1. GENERAL DESCRIPTION

The EK73002A 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=20208um*670um、Output bump pitch=20um、Bump height=9um

**3. PIN ASSIGNMENT**
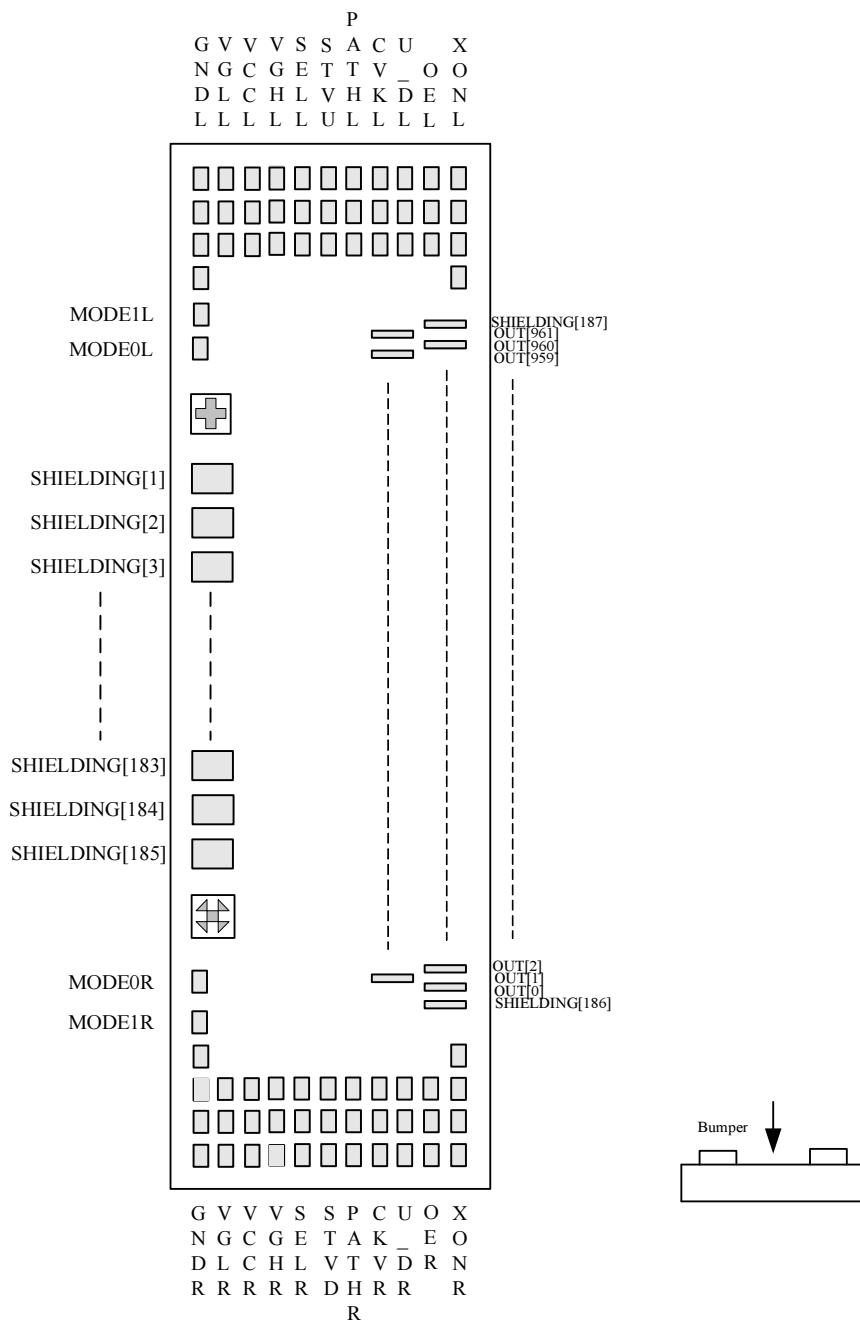
Figure 1. Pin Assignment

4. BLOCK DIAGRAM
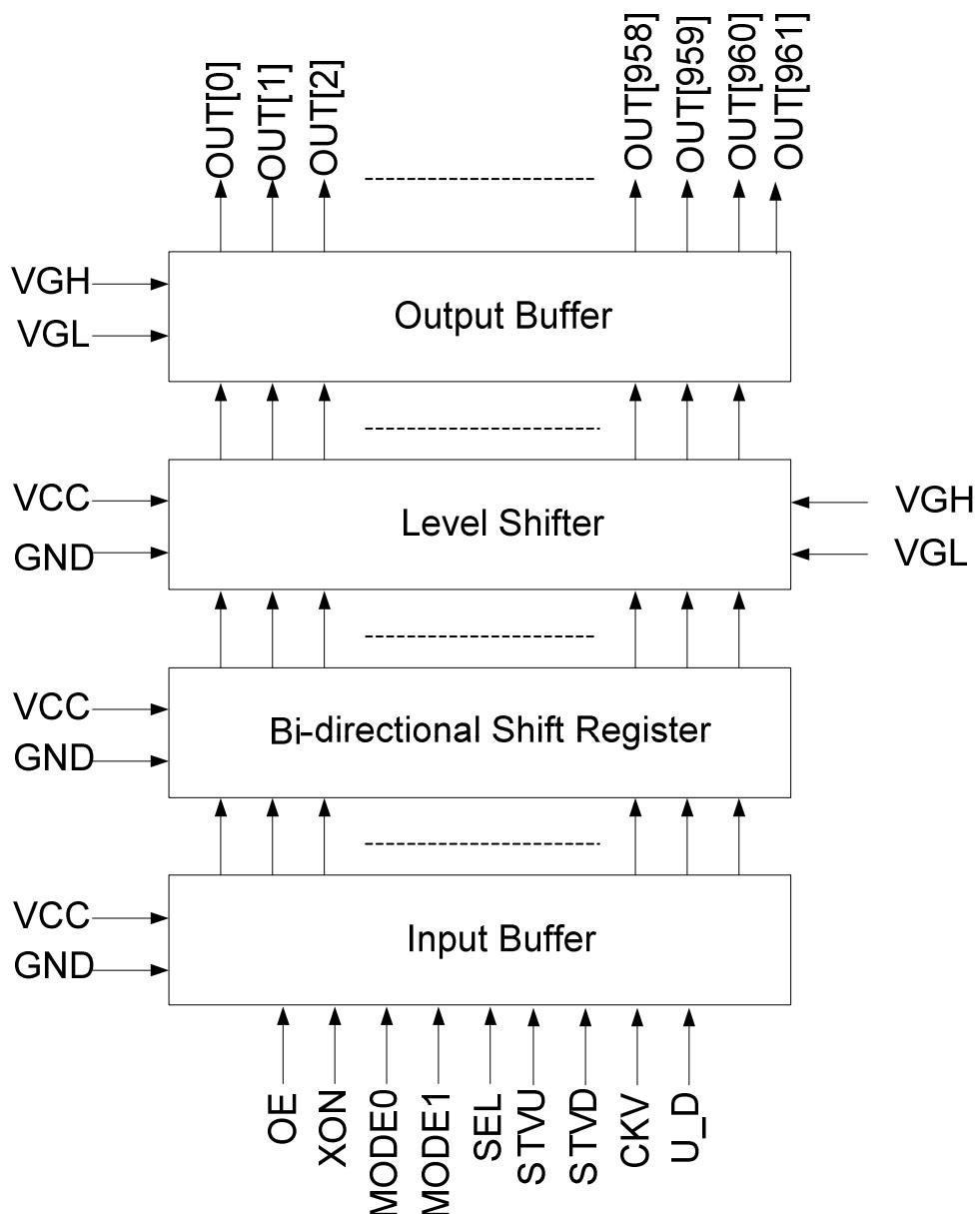
Figure 2. Block Diagram

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><tr><td></td><td>STVD</td><td>STVU</td></tr><tr><td>U_D = H</td><td>input</td><td>output</td></tr><tr><td>U_D = L</td><td>output</td><td>input</td></tr></table>
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><tr><td>MODE1</td><td>MODE0</td><td>Output Channels</td><td>Remark</td></tr><tr><td>1</td><td>1</td><td>960</td><td>Using OUT[1] ~ OUT[960] (Default)</td></tr><tr><td>1</td><td>0</td><td>900</td><td>Using OUT[1] ~ OUT[452] and OUT513 ~ OUT960 Other outputs are fixed to VGL</td></tr><tr><td>0</td><td>1</td><td>864</td><td>Using OUT[1] ~ OUT[432] and OUT[529] ~ OUT[960] Other outputs are fixed to VGL</td></tr><tr><td>0</td><td>0</td><td>816</td><td>Using OUT[1] ~ OUT[408] and OUT[553] ~ OUT[960] Other outputs are fixed to VGL</td></tr></table>
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 EK73002A must be used by the following conditions.

* VGH - VGL = 40V (max.)

* VGH - GND = 7 ~ 35V

Example:
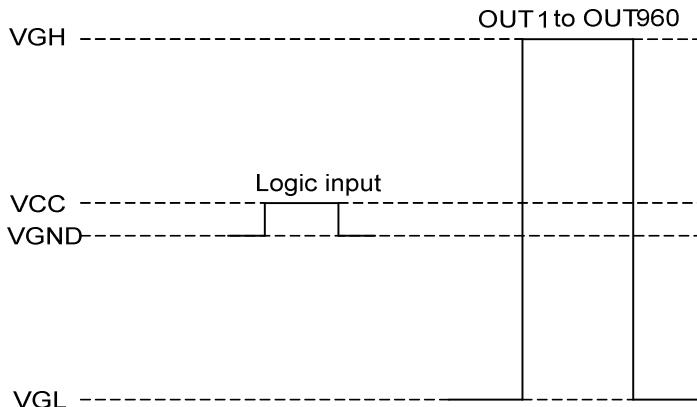
Figure 3. Device power supply

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
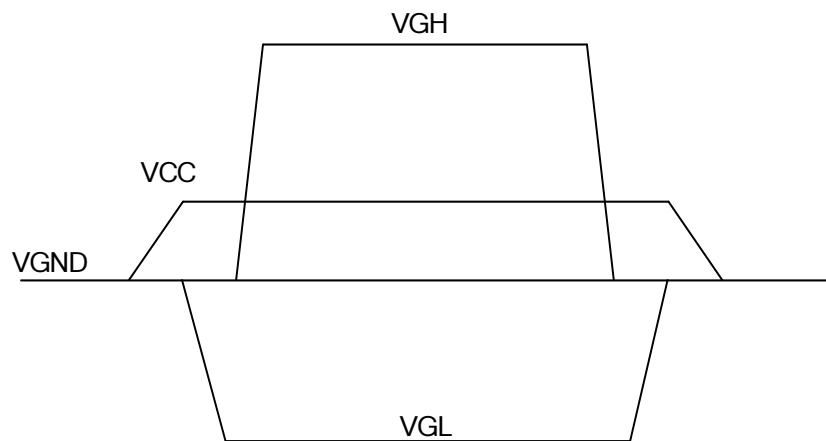
Figure 4. Power ON/OFF sequence

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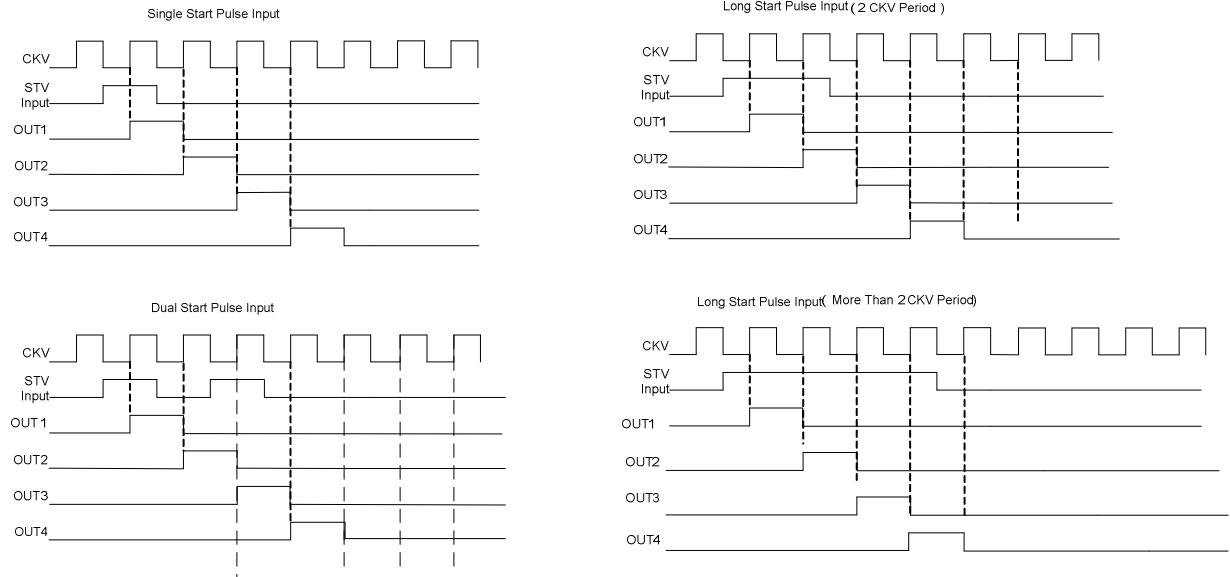
Figure 5. Start pulse Input limitation

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
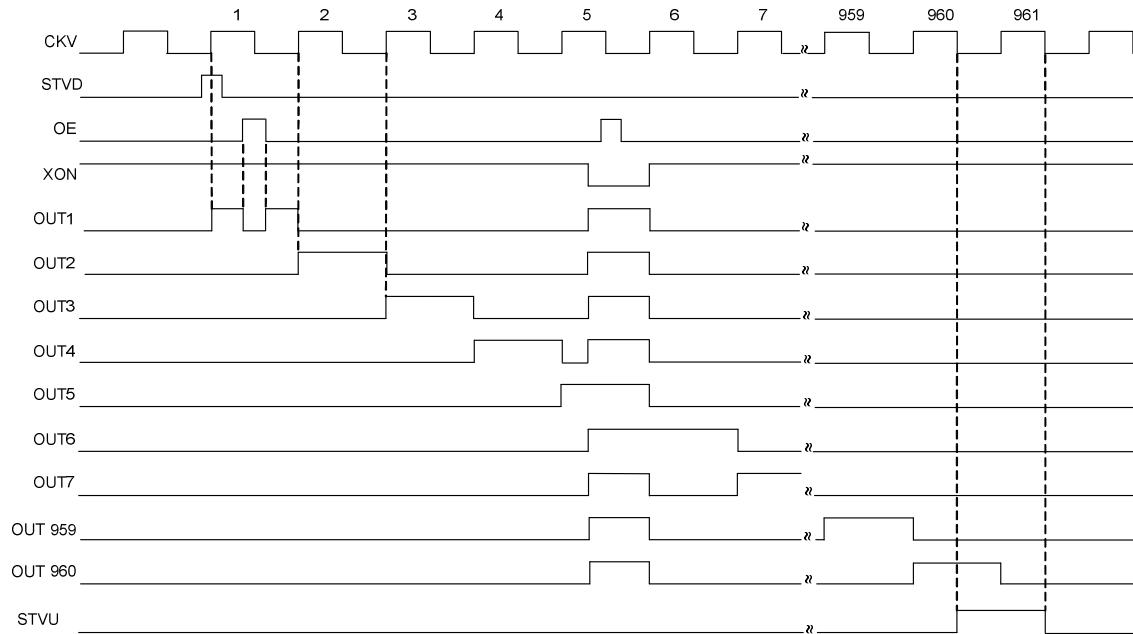
Figure 6.   U_D="H"
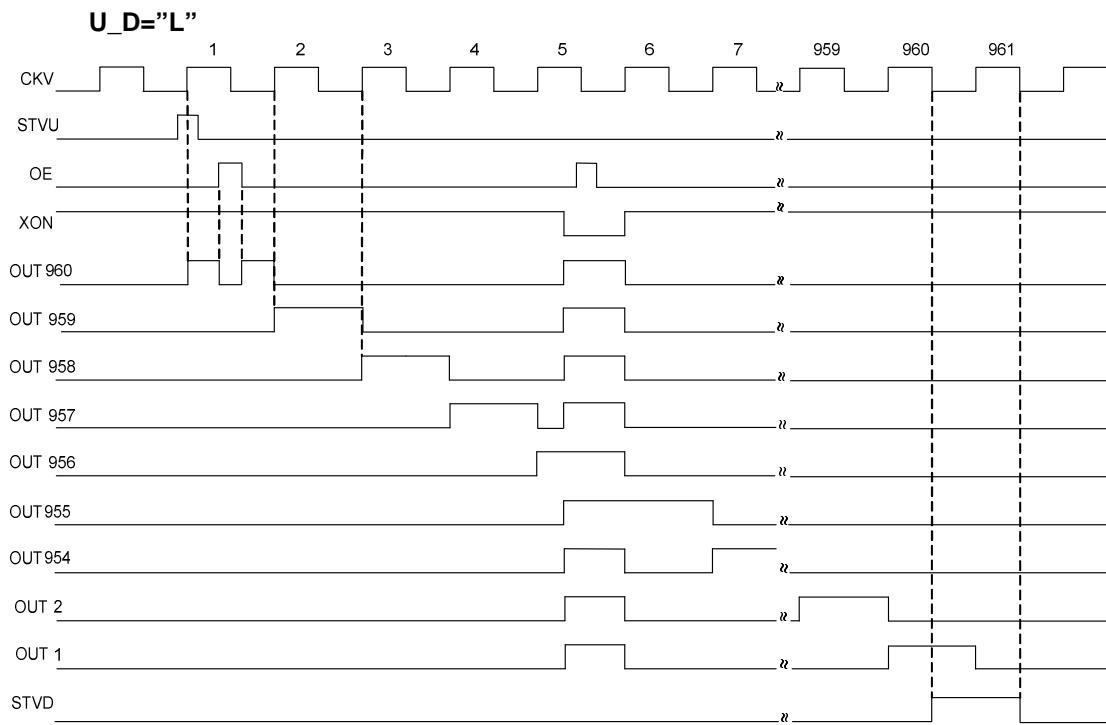
Figure 7.   U_D="L"

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	℃

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	℃

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}	VIN=GND VIN=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
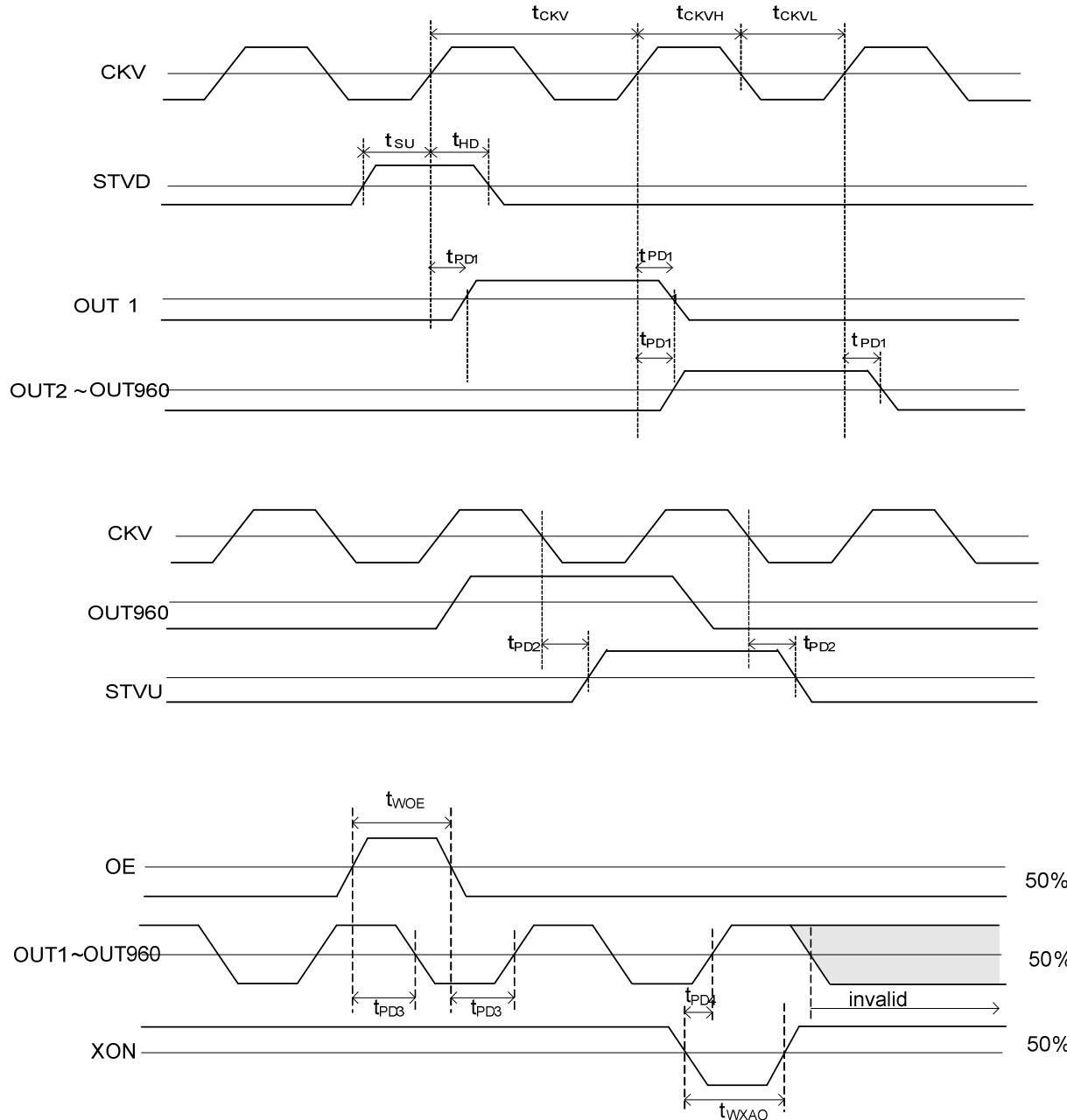
Figure 8.   timing waveform

8. CHIP OUTLINE DIMENSIONS AND ALIGNMENT MARK

Alignment Mark Dimension (unit : um)

Left side

Right side
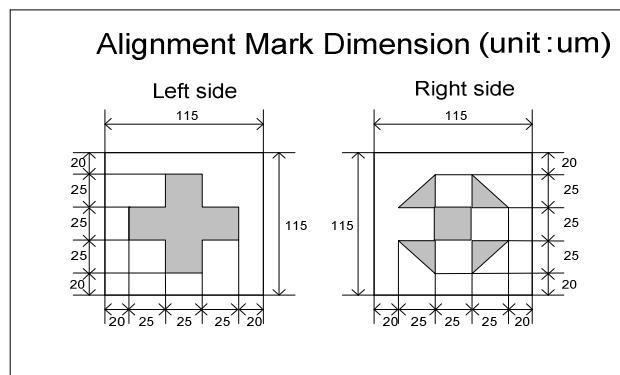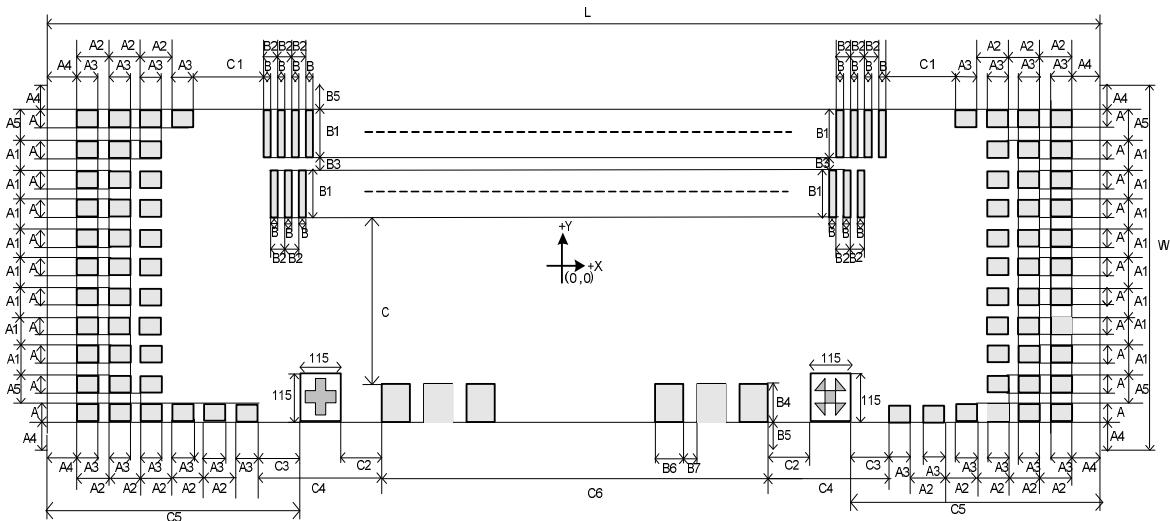
Bump height=9um

Symbol	Dimensions (um)	Symbol	Dimensions (um)	Symbol	Dimensions (um)
A	32	B2	40	C2	86
A1	52	B3	25	C3	86
A2	90	B4	70	C4	287
A3	70	B5	57	C5	663
A4	57	B6	80	C6	18480
A5	54	B7	20	L	20208(Max)
B	20	C	291	W	670(Max)
B1	85	C1	57		

(scribe line included)

9. PAD COORDINATE

Pad No.	Name	X	Y
1	GNDL	-10012	-262
2	GNDL	-9922	-262
3	GNDL	-9832	-262
4	GNDL	-9742	-262
5	MODE1L	-9652	-262
6	MODE0L	-9562	-262
7	SHIELDING[1]	-9200	-243
8	SHIELDING[2]	-9100	-243
9	SHIELDING[3]	-9000	-243
10	SHIELDING[4]	-8900	-243
11	SHIELDING[5]	-8800	-243
12	SHIELDING[6]	-8700	-243
13	SHIELDING[7]	-8600	-243
14	SHIELDING[8]	-8500	-243
15	SHIELDING[9]	-8400	-243
16	SHIELDING[10]	-8300	-243
17	SHIELDING[11]	-8200	-243
18	SHIELDING[12]	-8100	-243
19	SHIELDING[13]	-8000	-243
20	SHIELDING[14]	-7900	-243
21	SHIELDING[15]	-7800	-243
22	SHIELDING[16]	-7700	-243
23	SHIELDING[17]	-7600	-243
24	SHIELDING[18]	-7500	-243
25	SHIELDING[19]	-7400	-243
26	SHIELDING[20]	-7300	-243
27	SHIELDING[21]	-7200	-243
28	SHIELDING[22]	-7100	-243
29	SHIELDING[23]	-7000	-243
30	SHIELDING[24]	-6900	-243
31	SHIELDING[25]	-6800	-243
32	SHIELDING[26]	-6700	-243
33	SHIELDING[27]	-6600	-243
34	SHIELDING[28]	-6500	-243
35	SHIELDING[29]	-6400	-243
36	SHIELDING[30]	-6300	-243
37	SHIELDING[31]	-6200	-243
38	SHIELDING[32]	-6100	-243
39	SHIELDING[33]	-6000	-243
40	SHIELDING[34]	-5900	-243
41	SHIELDING[35]	-5800	-243
42	SHIELDING[36]	-5700	-243
43	SHIELDING[37]	-5600	-243
44	SHIELDING[38]	-5500	-243
45	SHIELDING[39]	-5400	-243
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142	SHIELDING[136]	4300	-243
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144	SHIELDING[138]	4500	-243
145	SHIELDING[139]	4600	-243
146	SHIELDING[140]	4700	-243
147	SHIELDING[141]	4800	-243

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
148	SHIELDING[142]	4900	-243	199	VGLR	9922	-208	250	OUT[20]	9200	235.5
149	SHIELDING[143]	5000	-243	200	VGLR	10012	-208	251	OUT[21]	9180	125.5
150	SHIELDING[144]	5100	-243	201	VCCR	9832	-156	252	OUT[22]	9160	235.5
151	SHIELDING[145]	5200	-243	202	VCCR	9922	-156	253	OUT[23]	9140	125.5
152	SHIELDING[146]	5300	-243	203	VCCR	10012	-156	254	OUT[24]	9120	235.5
153	SHIELDING[147]	5400	-243	204	VGHR	9832	-104	255	OUT[25]	9100	125.5
154	SHIELDING[148]	5500	-243	205	VGHR	9922	-104	256	OUT[26]	9080	235.5
155	SHIELDING[149]	5600	-243	206	VGHR	10012	-104	257	OUT[27]	9060	125.5
156	SHIELDING[150]	5700	-243	207	SELR	9832	-52	258	OUT[28]	9040	235.5
157	SHIELDING[151]	5800	-243	208	SELR	9922	-52	259	OUT[29]	9020	125.5
158	SHIELDING[152]	5900	-243	209	SELR	10012	-52	260	OUT[30]	9000	235.5
159	SHIELDING[153]	6000	-243	210	STVD	9832	0	261	OUT[31]	8980	125.5
160	SHIELDING[154]	6100	-243	211	STVD	9922	0	262	OUT[32]	8960	235.5
161	SHIELDING[155]	6200	-243	212	STVD	10012	0	263	OUT[33]	8940	125.5
162	SHIELDING[156]	6300	-243	213	PATHR	9832	52	264	OUT[34]	8920	235.5
163	SHIELDING[157]	6400	-243	214	PATHR	9922	52	265	OUT[35]	8900	125.5
164	SHIELDING[158]	6500	-243	215	PATHR	10012	52	266	OUT[36]	8880	235.5
165	SHIELDING[159]	6600	-243	216	CKVR	9832	104	267	OUT[37]	8860	125.5
166	SHIELDING[160]	6700	-243	217	CKVR	9922	104	268	OUT[38]	8840	235.5
167	SHIELDING[161]	6800	-243	218	CKVR	10012	104	269	OUT[39]	8820	125.5
168	SHIELDING[162]	6900	-243	219	U_DR	9832	156	270	OUT[40]	8800	235.5
169	SHIELDING[163]	7000	-243	220	U_DR	9922	156	271	OUT[41]	8780	125.5
170	SHIELDING[164]	7100	-243	221	U_DR	10012	156	272	OUT[42]	8760	235.5
171	SHIELDING[165]	7200	-243	222	OER	9832	208	273	OUT[43]	8740	125.5
172	SHIELDING[166]	7300	-243	223	OER	9922	208	274	OUT[44]	8720	235.5
173	SHIELDING[167]	7400	-243	224	OER	10012	208	275	OUT[45]	8700	125.5
174	SHIELDING[168]	7500	-243	225	XONR	9742	262	276	OUT[46]	8680	235.5
175	SHIELDING[169]	7600	-243	226	XONR	9832	262	277	OUT[47]	8660	125.5
176	SHIELDING[170]	7700	-243	227	XONR	9922	262	278	OUT[48]	8640	235.5
177	SHIELDING[171]	7800	-243	228	XONR	10012	262	279	OUT[49]	8620	125.5
178	SHIELDING[172]	7900	-243	229	SHIELDING[186]	9640	235.5	280	OUT[50]	8600	235.5
179	SHIELDING[173]	8000	-243	230	OUT[0]	9600	235.5	281	OUT[51]	8580	125.5
180	SHIELDING[174]	8100	-243	231	OUT[1]	9580	125.5	282	OUT[52]	8560	235.5
181	SHIELDING[175]	8200	-243	232	OUT[2]	9560	235.5	283	OUT[53]	8540	125.5
182	SHIELDING[176]	8300	-243	233	OUT[3]	9540	125.5	284	OUT[54]	8520	235.5
183	SHIELDING[177]	8400	-243	234	OUT[4]	9520	235.5	285	OUT[55]	8500	125.5
184	SHIELDING[178]	8500	-243	235	OUT[5]	9500	125.5	286	OUT[56]	8480	235.5
185	SHIELDING[179]	8600	-243	236	OUT[6]	9480	235.5	287	OUT[57]	8460	125.5
186	SHIELDING[180]	8700	-243	237	OUT[7]	9460	125.5	288	OUT[58]	8440	235.5
187	SHIELDING[181]	8800	-243	238	OUT[8]	9440	235.5	289	OUT[59]	8420	125.5
188	SHIELDING[182]	8900	-243	239	OUT[9]	9420	125.5	290	OUT[60]	8400	235.5
189	SHIELDING[183]	9000	-243	240	OUT[10]	9400	235.5	291	OUT[61]	8380	125.5
190	SHIELDING[184]	9100	-243	241	OUT[11]	9380	125.5	292	OUT[62]	8360	235.5
191	SHIELDING[185]	9200	-243	242	OUT[12]	9360	235.5	293	OUT[63]	8340	125.5
192	MODE0R	9562	-262	243	OUT[13]	9340	125.5	294	OUT[64]	8320	235.5
193	MODE1R	9652	-262	244	OUT[14]	9320	235.5	295	OUT[65]	8300	125.5
194	GNDR	9742	-262	245	OUT[15]	9300	125.5	296	OUT[66]	8280	235.5
195	GNDR	9832	-262	246	OUT[16]	9280	235.5	297	OUT[67]	8260	125.5
196	GNDR	9922	-262	247	OUT[17]	9260	125.5	298	OUT[68]	8240	235.5
197	GNDR	10012	-262	248	OUT[18]	9240	235.5	299	OUT[69]	8220	125.5
198	VGLR	9832	-208	249	OUT[19]	9220	125.5	300	OUT[70]	8200	235.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
301	OUT[71]	8180	125.5	352	OUT[122]	7160	235.5	403	OUT[173]	6140	125.5
302	OUT[72]	8160	235.5	353	OUT[123]	7140	125.5	404	OUT[174]	6120	235.5
303	OUT[73]	8140	125.5	354	OUT[124]	7120	235.5	405	OUT[175]	6100	125.5
304	OUT[74]	8120	235.5	355	OUT[125]	7100	125.5	406	OUT[176]	6080	235.5
305	OUT[75]	8100	125.5	356	OUT[126]	7080	235.5	407	OUT[177]	6060	125.5
306	OUT[76]	8080	235.5	357	OUT[127]	7060	125.5	408	OUT[178]	6040	235.5
307	OUT[77]	8060	125.5	358	OUT[128]	7040	235.5	409	OUT[179]	6020	125.5
308	OUT[78]	8040	235.5	359	OUT[129]	7020	125.5	410	OUT[180]	6000	235.5
309	OUT[79]	8020	125.5	360	OUT[130]	7000	235.5	411	OUT[181]	5980	125.5
310	OUT[80]	8000	235.5	361	OUT[131]	6980	125.5	412	OUT[182]	5960	235.5
311	OUT[81]	7980	125.5	362	OUT[132]	6960	235.5	413	OUT[183]	5940	125.5
312	OUT[82]	7960	235.5	363	OUT[133]	6940	125.5	414	OUT[184]	5920	235.5
313	OUT[83]	7940	125.5	364	OUT[134]	6920	235.5	415	OUT[185]	5900	125.5
314	OUT[84]	7920	235.5	365	OUT[135]	6900	125.5	416	OUT[186]	5880	235.5
315	OUT[85]	7900	125.5	366	OUT[136]	6880	235.5	417	OUT[187]	5860	125.5
316	OUT[86]	7880	235.5	367	OUT[137]	6860	125.5	418	OUT[188]	5840	235.5
317	OUT[87]	7860	125.5	368	OUT[138]	6840	235.5	419	OUT[189]	5820	125.5
318	OUT[88]	7840	235.5	369	OUT[139]	6820	125.5	420	OUT[190]	5800	235.5
319	OUT[89]	7820	125.5	370	OUT[140]	6800	235.5	421	OUT[191]	5780	125.5
320	OUT[90]	7800	235.5	371	OUT[141]	6780	125.5	422	OUT[192]	5760	235.5
321	OUT[91]	7780	125.5	372	OUT[142]	6760	235.5	423	OUT[193]	5740	125.5
322	OUT[92]	7760	235.5	373	OUT[143]	6740	125.5	424	OUT[194]	5720	235.5
323	OUT[93]	7740	125.5	374	OUT[144]	6720	235.5	425	OUT[195]	5700	125.5
324	OUT[94]	7720	235.5	375	OUT[145]	6700	125.5	426	OUT[196]	5680	235.5
325	OUT[95]	7700	125.5	376	OUT[146]	6680	235.5	427	OUT[197]	5660	125.5
326	OUT[96]	7680	235.5	377	OUT[147]	6660	125.5	428	OUT[198]	5640	235.5
327	OUT[97]	7660	125.5	378	OUT[148]	6640	235.5	429	OUT[199]	5620	125.5
328	OUT[98]	7640	235.5	379	OUT[149]	6620	125.5	430	OUT[200]	5600	235.5
329	OUT[99]	7620	125.5	380	OUT[150]	6600	235.5	431	OUT[201]	5580	125.5
330	OUT[100]	7600	235.5	381	OUT[151]	6580	125.5	432	OUT[202]	5560	235.5
331	OUT[101]	7580	125.5	382	OUT[152]	6560	235.5	433	OUT[203]	5540	125.5
332	OUT[102]	7560	235.5	383	OUT[153]	6540	125.5	434	OUT[204]	5520	235.5
333	OUT[103]	7540	125.5	384	OUT[154]	6520	235.5	435	OUT[205]	5500	125.5
334	OUT[104]	7520	235.5	385	OUT[155]	6500	125.5	436	OUT[206]	5480	235.5
335	OUT[105]	7500	125.5	386	OUT[156]	6480	235.5	437	OUT[207]	5460	125.5
336	OUT[106]	7480	235.5	387	OUT[157]	6460	125.5	438	OUT[208]	5440	235.5
337	OUT[107]	7460	125.5	388	OUT[158]	6440	235.5	439	OUT[209]	5420	125.5
338	OUT[108]	7440	235.5	389	OUT[159]	6420	125.5	440	OUT[210]	5400	235.5
339	OUT[109]	7420	125.5	390	OUT[160]	6400	235.5	441	OUT[211]	5380	125.5
340	OUT[110]	7400	235.5	391	OUT[161]	6380	125.5	442	OUT[212]	5360	235.5
341	OUT[111]	7380	125.5	392	OUT[162]	6360	235.5	443	OUT[213]	5340	125.5
342	OUT[112]	7360	235.5	393	OUT[163]	6340	125.5	444	OUT[214]	5320	235.5
343	OUT[113]	7340	125.5	394	OUT[164]	6320	235.5	445	OUT[215]	5300	125.5
344	OUT[114]	7320	235.5	395	OUT[165]	6300	125.5	446	OUT[216]	5280	235.5
345	OUT[115]	7300	125.5	396	OUT[166]	6280	235.5	447	OUT[217]	5260	125.5
346	OUT[116]	7280	235.5	397	OUT[167]	6260	125.5	448	OUT[218]	5240	235.5
347	OUT[117]	7260	125.5	398	OUT[168]	6240	235.5	449	OUT[219]	5220	125.5
348	OUT[118]	7240	235.5	399	OUT[169]	6220	125.5	450	OUT[220]	5200	235.5
349	OUT[119]	7220	125.5	400	OUT[170]	6200	235.5	451	OUT[221]	5180	125.5
350	OUT[120]	7200	235.5	401	OUT[171]	6180	125.5	452	OUT[222]	5160	235.5
351	OUT[121]	7180	125.5	402	OUT[172]	6160	235.5	453	OUT[223]	5140	125.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
454	OUT[224]	5120	235.5	505	OUT[275]	4100	125.5	556	OUT[326]	3080	235.5
455	OUT[225]	5100	125.5	506	OUT[276]	4080	235.5	557	OUT[327]	3060	125.5
456	OUT[226]	5080	235.5	507	OUT[277]	4060	125.5	558	OUT[328]	3040	235.5
457	OUT[227]	5060	125.5	508	OUT[278]	4040	235.5	559	OUT[329]	3020	125.5
458	OUT[228]	5040	235.5	509	OUT[279]	4020	125.5	560	OUT[330]	3000	235.5
459	OUT[229]	5020	125.5	510	OUT[280]	4000	235.5	561	OUT[331]	2980	125.5
460	OUT[230]	5000	235.5	511	OUT[281]	3980	125.5	562	OUT[332]	2960	235.5
461	OUT[231]	4980	125.5	512	OUT[282]	3960	235.5	563	OUT[333]	2940	125.5
462	OUT[232]	4960	235.5	513	OUT[283]	3940	125.5	564	OUT[334]	2920	235.5
463	OUT[233]	4940	125.5	514	OUT[284]	3920	235.5	565	OUT[335]	2900	125.5
464	OUT[234]	4920	235.5	515	OUT[285]	3900	125.5	566	OUT[336]	2880	235.5
465	OUT[235]	4900	125.5	516	OUT[286]	3880	235.5	567	OUT[337]	2860	125.5
466	OUT[236]	4880	235.5	517	OUT[287]	3860	125.5	568	OUT[338]	2840	235.5
467	OUT[237]	4860	125.5	518	OUT[288]	3840	235.5	569	OUT[339]	2820	125.5
468	OUT[238]	4840	235.5	519	OUT[289]	3820	125.5	570	OUT[340]	2800	235.5
469	OUT[239]	4820	125.5	520	OUT[290]	3800	235.5	571	OUT[341]	2780	125.5
470	OUT[240]	4800	235.5	521	OUT[291]	3780	125.5	572	OUT[342]	2760	235.5
471	OUT[241]	4780	125.5	522	OUT[292]	3760	235.5	573	OUT[343]	2740	125.5
472	OUT[242]	4760	235.5	523	OUT[293]	3740	125.5	574	OUT[344]	2720	235.5
473	OUT[243]	4740	125.5	524	OUT[294]	3720	235.5	575	OUT[345]	2700	125.5
474	OUT[244]	4720	235.5	525	OUT[295]	3700	125.5	576	OUT[346]	2680	235.5
475	OUT[245]	4700	125.5	526	OUT[296]	3680	235.5	577	OUT[347]	2660	125.5
476	OUT[246]	4680	235.5	527	OUT[297]	3660	125.5	578	OUT[348]	2640	235.5
477	OUT[247]	4660	125.5	528	OUT[298]	3640	235.5	579	OUT[349]	2620	125.5
478	OUT[248]	4640	235.5	529	OUT[299]	3620	125.5	580	OUT[350]	2600	235.5
479	OUT[249]	4620	125.5	530	OUT[300]	3600	235.5	581	OUT[351]	2580	125.5
480	OUT[250]	4600	235.5	531	OUT[301]	3580	125.5	582	OUT[352]	2560	235.5
481	OUT[251]	4580	125.5	532	OUT[302]	3560	235.5	583	OUT[353]	2540	125.5
482	OUT[252]	4560	235.5	533	OUT[303]	3540	125.5	584	OUT[354]	2520	235.5
483	OUT[253]	4540	125.5	534	OUT[304]	3520	235.5	585	OUT[355]	2500	125.5
484	OUT[254]	4520	235.5	535	OUT[305]	3500	125.5	586	OUT[356]	2480	235.5
485	OUT[255]	4500	125.5	536	OUT[306]	3480	235.5	587	OUT[357]	2460	125.5
486	OUT[256]	4480	235.5	537	OUT[307]	3460	125.5	588	OUT[358]	2440	235.5
487	OUT[257]	4460	125.5	538	OUT[308]	3440	235.5	589	OUT[359]	2420	125.5
488	OUT[258]	4440	235.5	539	OUT[309]	3420	125.5	590	OUT[360]	2400	235.5
489	OUT[259]	4420	125.5	540	OUT[310]	3400	235.5	591	OUT[361]	2380	125.5
490	OUT[260]	4400	235.5	541	OUT[311]	3380	125.5	592	OUT[362]	2360	235.5
491	OUT[261]	4380	125.5	542	OUT[312]	3360	235.5	593	OUT[363]	2340	125.5
492	OUT[262]	4360	235.5	543	OUT[313]	3340	125.5	594	OUT[364]	2320	235.5
493	OUT[263]	4340	125.5	544	OUT[314]	3320	235.5	595	OUT[365]	2300	125.5
494	OUT[264]	4320	235.5	545	OUT[315]	3300	125.5	596	OUT[366]	2280	235.5
495	OUT[265]	4300	125.5	546	OUT[316]	3280	235.5	597	OUT[367]	2260	125.5
496	OUT[266]	4280	235.5	547	OUT[317]	3260	125.5	598	OUT[368]	2240	235.5
497	OUT[267]	4260	125.5	548	OUT[318]	3240	235.5	599	OUT[369]	2220	125.5
498	OUT[268]	4240	235.5	549	OUT[319]	3220	125.5	600	OUT[370]	2200	235.5
499	OUT[269]	4220	125.5	550	OUT[320]	3200	235.5	601	OUT[371]	2180	125.5
500	OUT[270]	4200	235.5	551	OUT[321]	3180	125.5	602	OUT[372]	2160	235.5
501	OUT[271]	4180	125.5	552	OUT[322]	3160	235.5	603	OUT[373]	2140	125.5
502	OUT[272]	4160	235.5	553	OUT[323]	3140	125.5	604	OUT[374]	2120	235.5
503	OUT[273]	4140	125.5	554	OUT[324]	3120	235.5	605	OUT[375]	2100	125.5
504	OUT[274]	4120	235.5	555	OUT[325]	3100	125.5	606	OUT[376]	2080	235.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
607	OUT[377]	2060	125.5	658	OUT[428]	1040	235.5	709	OUT[479]	20	125.5
608	OUT[378]	2040	235.5	659	OUT[429]	1020	125.5	710	OUT[480]	0	235.5
609	OUT[379]	2020	125.5	660	OUT[430]	1000	235.5	711	OUT[481]	-20	125.5
610	OUT[380]	2000	235.5	661	OUT[431]	980	125.5	712	OUT[482]	-40	235.5
611	OUT[381]	1980	125.5	662	OUT[432]	960	235.5	713	OUT[483]	-60	125.5
612	OUT[382]	1960	235.5	663	OUT[433]	940	125.5	714	OUT[484]	-80	235.5
613	OUT[383]	1940	125.5	664	OUT[434]	920	235.5	715	OUT[485]	-100	125.5
614	OUT[384]	1920	235.5	665	OUT[435]	900	125.5	716	OUT[486]	-120	235.5
615	OUT[385]	1900	125.5	666	OUT[436]	880	235.5	717	OUT[487]	-140	125.5
616	OUT[386]	1880	235.5	667	OUT[437]	860	125.5	718	OUT[488]	-160	235.5
617	OUT[387]	1860	125.5	668	OUT[438]	840	235.5	719	OUT[489]	-180	125.5
618	OUT[388]	1840	235.5	669	OUT[439]	820	125.5	720	OUT[490]	-200	235.5
619	OUT[389]	1820	125.5	670	OUT[440]	800	235.5	721	OUT[491]	-220	125.5
620	OUT[390]	1800	235.5	671	OUT[441]	780	125.5	722	OUT[492]	-240	235.5
621	OUT[391]	1780	125.5	672	OUT[442]	760	235.5	723	OUT[493]	-260	125.5
622	OUT[392]	1760	235.5	673	OUT[443]	740	125.5	724	OUT[494]	-280	235.5
623	OUT[393]	1740	125.5	674	OUT[444]	720	235.5	725	OUT[495]	-300	125.5
624	OUT[394]	1720	235.5	675	OUT[445]	700	125.5	726	OUT[496]	-320	235.5
625	OUT[395]	1700	125.5	676	OUT[446]	680	235.5	727	OUT[497]	-340	125.5
626	OUT[396]	1680	235.5	677	OUT[447]	660	125.5	728	OUT[498]	-360	235.5
627	OUT[397]	1660	125.5	678	OUT[448]	640	235.5	729	OUT[499]	-380	125.5
628	OUT[398]	1640	235.5	679	OUT[449]	620	125.5	730	OUT[500]	-400	235.5
629	OUT[399]	1620	125.5	680	OUT[450]	600	235.5	731	OUT[501]	-420	125.5
630	OUT[400]	1600	235.5	681	OUT[451]	580	125.5	732	OUT[502]	-440	235.5
631	OUT[401]	1580	125.5	682	OUT[452]	560	235.5	733	OUT[503]	-460	125.5
632	OUT[402]	1560	235.5	683	OUT[453]	540	125.5	734	OUT[504]	-480	235.5
633	OUT[403]	1540	125.5	684	OUT[454]	520	235.5	735	OUT[505]	-500	125.5
634	OUT[404]	1520	235.5	685	OUT[455]	500	125.5	736	OUT[506]	-520	235.5
635	OUT[405]	1500	125.5	686	OUT[456]	480	235.5	737	OUT[507]	-540	125.5
636	OUT[406]	1480	235.5	687	OUT[457]	460	125.5	738	OUT[508]	-560	235.5
637	OUT[407]	1460	125.5	688	OUT[458]	440	235.5	739	OUT[509]	-580	125.5
638	OUT[408]	1440	235.5	689	OUT[459]	420	125.5	740	OUT[510]	-600	235.5
639	OUT[409]	1420	125.5	690	OUT[460]	400	235.5	741	OUT[511]	-620	125.5
640	OUT[410]	1400	235.5	691	OUT[461]	380	125.5	742	OUT[512]	-640	235.5
641	OUT[411]	1380	125.5	692	OUT[462]	360	235.5	743	OUT[513]	-660	125.5
642	OUT[412]	1360	235.5	693	OUT[463]	340	125.5	744	OUT[514]	-680	235.5
643	OUT[413]	1340	125.5	694	OUT[464]	320	235.5	745	OUT[515]	-700	125.5
644	OUT[414]	1320	235.5	695	OUT[465]	300	125.5	746	OUT[516]	-720	235.5
645	OUT[415]	1300	125.5	696	OUT[466]	280	235.5	747	OUT[517]	-740	125.5
646	OUT[416]	1280	235.5	697	OUT[467]	260	125.5	748	OUT[518]	-760	235.5
647	OUT[417]	1260	125.5	698	OUT[468]	240	235.5	749	OUT[519]	-780	125.5
648	OUT[418]	1240	235.5	699	OUT[469]	220	125.5	750	OUT[520]	-800	235.5
649	OUT[419]	1220	125.5	700	OUT[470]	200	235.5	751	OUT[521]	-820	125.5
650	OUT[420]	1200	235.5	701	OUT[471]	180	125.5	752	OUT[522]	-840	235.5
651	OUT[421]	1180	125.5	702	OUT[472]	160	235.5	753	OUT[523]	-860	125.5
652	OUT[422]	1160	235.5	703	OUT[473]	140	125.5	754	OUT[524]	-880	235.5
653	OUT[423]	1140	125.5	704	OUT[474]	120	235.5	755	OUT[525]	-900	125.5
654	OUT[424]	1120	235.5	705	OUT[475]	100	125.5	756	OUT[526]	-920	235.5
655	OUT[425]	1100	125.5	706	OUT[476]	80	235.5	757	OUT[527]	-940	125.5
656	OUT[426]	1080	235.5	707	OUT[477]	60	125.5	758	OUT[528]	-960	235.5
657	OUT[427]	1060	125.5	708	OUT[478]	40	235.5	759	OUT[529]	-980	125.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
760	OUT[530]	-1000	235.5	811	OUT[581]	-2020	125.5	862	OUT[632]	-3040	235.5
761	OUT[531]	-1020	125.5	812	OUT[582]	-2040	235.5	863	OUT[633]	-3060	125.5
762	OUT[532]	-1040	235.5	813	OUT[583]	-2060	125.5	864	OUT[634]	-3080	235.5
763	OUT[533]	-1060	125.5	814	OUT[584]	-2080	235.5	865	OUT[635]	-3100	125.5
764	OUT[534]	-1080	235.5	815	OUT[585]	-2100	125.5	866	OUT[636]	-3120	235.5
765	OUT[535]	-1100	125.5	816	OUT[586]	-2120	235.5	867	OUT[637]	-3140	125.5
766	OUT[536]	-1120	235.5	817	OUT[587]	-2140	125.5	868	OUT[638]	-3160	235.5
767	OUT[537]	-1140	125.5	818	OUT[588]	-2160	235.5	869	OUT[639]	-3180	125.5
768	OUT[538]	-1160	235.5	819	OUT[589]	-2180	125.5	870	OUT[640]	-3200	235.5
769	OUT[539]	-1180	125.5	820	OUT[590]	-2200	235.5	871	OUT[641]	-3220	125.5
770	OUT[540]	-1200	235.5	821	OUT[591]	-2220	125.5	872	OUT[642]	-3240	235.5
771	OUT[541]	-1220	125.5	822	OUT[592]	-2240	235.5	873	OUT[643]	-3260	125.5
772	OUT[542]	-1240	235.5	823	OUT[593]	-2260	125.5	874	OUT[644]	-3280	235.5
773	OUT[543]	-1260	125.5	824	OUT[594]	-2280	235.5	875	OUT[645]	-3300	125.5
774	OUT[544]	-1280	235.5	825	OUT[595]	-2300	125.5	876	OUT[646]	-3320	235.5
775	OUT[545]	-1300	125.5	826	OUT[596]	-2320	235.5	877	OUT[647]	-3340	125.5
776	OUT[546]	-1320	235.5	827	OUT[597]	-2340	125.5	878	OUT[648]	-3360	235.5
777	OUT[547]	-1340	125.5	828	OUT[598]	-2360	235.5	879	OUT[649]	-3380	125.5
778	OUT[548]	-1360	235.5	829	OUT[599]	-2380	125.5	880	OUT[650]	-3400	235.5
779	OUT[549]	-1380	125.5	830	OUT[600]	-2400	235.5	881	OUT[651]	-3420	125.5
780	OUT[550]	-1400	235.5	831	OUT[601]	-2420	125.5	882	OUT[652]	-3440	235.5
781	OUT[551]	-1420	125.5	832	OUT[602]	-2440	235.5	883	OUT[653]	-3460	125.5
782	OUT[552]	-1440	235.5	833	OUT[603]	-2460	125.5	884	OUT[654]	-3480	235.5
783	OUT[553]	-1460	125.5	834	OUT[604]	-2480	235.5	885	OUT[655]	-3500	125.5
784	OUT[554]	-1480	235.5	835	OUT[605]	-2500	125.5	886	OUT[656]	-3520	235.5
785	OUT[555]	-1500	125.5	836	OUT[606]	-2520	235.5	887	OUT[657]	-3540	125.5
786	OUT[556]	-1520	235.5	837	OUT[607]	-2540	125.5	888	OUT[658]	-3560	235.5
787	OUT[557]	-1540	125.5	838	OUT[608]	-2560	235.5	889	OUT[659]	-3580	125.5
788	OUT[558]	-1560	235.5	839	OUT[609]	-2580	125.5	890	OUT[660]	-3600	235.5
789	OUT[559]	-1580	125.5	840	OUT[610]	-2600	235.5	891	OUT[661]	-3620	125.5
790	OUT[560]	-1600	235.5	841	OUT[611]	-2620	125.5	892	OUT[662]	-3640	235.5
791	OUT[561]	-1620	125.5	842	OUT[612]	-2640	235.5	893	OUT[663]	-3660	125.5
792	OUT[562]	-1640	235.5	843	OUT[613]	-2660	125.5	894	OUT[664]	-3680	235.5
793	OUT[563]	-1660	125.5	844	OUT[614]	-2680	235.5	895	OUT[665]	-3700	125.5
794	OUT[564]	-1680	235.5	845	OUT[615]	-2700	125.5	896	OUT[666]	-3720	235.5
795	OUT[565]	-1700	125.5	846	OUT[616]	-2720	235.5	897	OUT[667]	-3740	125.5
796	OUT[566]	-1720	235.5	847	OUT[617]	-2740	125.5	898	OUT[668]	-3760	235.5
797	OUT[567]	-1740	125.5	848	OUT[618]	-2760	235.5	899	OUT[669]	-3780	125.5
798	OUT[568]	-1760	235.5	849	OUT[619]	-2780	125.5	900	OUT[670]	-3800	235.5
799	OUT[569]	-1780	125.5	850	OUT[620]	-2800	235.5	901	OUT[671]	-3820	125.5
800	OUT[570]	-1800	235.5	851	OUT[621]	-2820	125.5	902	OUT[672]	-3840	235.5
801	OUT[571]	-1820	125.5	852	OUT[622]	-2840	235.5	903	OUT[673]	-3860	125.5
802	OUT[572]	-1840	235.5	853	OUT[623]	-2860	125.5	904	OUT[674]	-3880	235.5
803	OUT[573]	-1860	125.5	854	OUT[624]	-2880	235.5	905	OUT[675]	-3900	125.5
804	OUT[574]	-1880	235.5	855	OUT[625]	-2900	125.5	906	OUT[676]	-3920	235.5
805	OUT[575]	-1900	125.5	856	OUT[626]	-2920	235.5	907	OUT[677]	-3940	125.5
806	OUT[576]	-1920	235.5	857	OUT[627]	-2940	125.5	908	OUT[678]	-3960	235.5
807	OUT[577]	-1940	125.5	858	OUT[628]	-2960	235.5	909	OUT[679]	-3980	125.5
808	OUT[578]	-1960	235.5	859	OUT[629]	-2980	125.5	910	OUT[680]	-4000	235.5
809	OUT[579]	-1980	125.5	860	OUT[630]	-3000	235.5	911	OUT[681]	-4020	125.5
810	OUT[580]	-2000	235.5	861	OUT[631]	-3020	125.5	912	OUT[682]	-4040	235.5

Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
913	OUT[683]	-4060	125.5	964	OUT[734]	-5080	235.5	1015	OUT[785]	-6100	125.5
914	OUT[684]	-4080	235.5	965	OUT[735]	-5100	125.5	1016	OUT[786]	-6120	235.5
915	OUT[685]	-4100	125.5	966	OUT[736]	-5120	235.5	1017	OUT[787]	-6140	125.5
916	OUT[686]	-4120	235.5	967	OUT[737]	-5140	125.5	1018	OUT[788]	-6160	235.5
917	OUT[687]	-4140	125.5	968	OUT[738]	-5160	235.5	1019	OUT[789]	-6180	125.5
918	OUT[688]	-4160	235.5	969	OUT[739]	-5180	125.5	1020	OUT[790]	-6200	235.5
919	OUT[689]	-4180	125.5	970	OUT[740]	-5200	235.5	1021	OUT[791]	-6220	125.5
920	OUT[690]	-4200	235.5	971	OUT[741]	-5220	125.5	1022	OUT[792]	-6240	235.5
921	OUT[691]	-4220	125.5	972	OUT[742]	-5240	235.5	1023	OUT[793]	-6260	125.5
922	OUT[692]	-4240	235.5	973	OUT[743]	-5260	125.5	1024	OUT[794]	-6280	235.5
923	OUT[693]	-4260	125.5	974	OUT[744]	-5280	235.5	1025	OUT[795]	-6300	125.5
924	OUT[694]	-4280	235.5	975	OUT[745]	-5300	125.5	1026	OUT[796]	-6320	235.5
925	OUT[695]	-4300	125.5	976	OUT[746]	-5320	235.5	1027	OUT[797]	-6340	125.5
926	OUT[696]	-4320	235.5	977	OUT[747]	-5340	125.5	1028	OUT[798]	-6360	235.5
927	OUT[697]	-4340	125.5	978	OUT[748]	-5360	235.5	1029	OUT[799]	-6380	125.5
928	OUT[698]	-4360	235.5	979	OUT[749]	-5380	125.5	1030	OUT[800]	-6400	235.5
929	OUT[699]	-4380	125.5	980	OUT[750]	-5400	235.5	1031	OUT[801]	-6420	125.5
930	OUT[700]	-4400	235.5	981	OUT[751]	-5420	125.5	1032	OUT[802]	-6440	235.5
931	OUT[701]	-4420	125.5	982	OUT[752]	-5440	235.5	1033	OUT[803]	-6460	125.5
932	OUT[702]	-4440	235.5	983	OUT[753]	-5460	125.5	1034	OUT[804]	-6480	235.5
933	OUT[703]	-4460	125.5	984	OUT[754]	-5480	235.5	1035	OUT[805]	-6500	125.5
934	OUT[704]	-4480	235.5	985	OUT[755]	-5500	125.5	1036	OUT[806]	-6520	235.5
935	OUT[705]	-4500	125.5	986	OUT[756]	-5520	235.5	1037	OUT[807]	-6540	125.5
936	OUT[706]	-4520	235.5	987	OUT[757]	-5540	125.5	1038	OUT[808]	-6560	235.5
937	OUT[707]	-4540	125.5	988	OUT[758]	-5560	235.5	1039	OUT[809]	-6580	125.5
938	OUT[708]	-4560	235.5	989	OUT[759]	-5580	125.5	1040	OUT[810]	-6600	235.5
939	OUT[709]	-4580	125.5	990	OUT[760]	-5600	235.5	1041	OUT[811]	-6620	125.5
940	OUT[710]	-4600	235.5	991	OUT[761]	-5620	125.5	1042	OUT[812]	-6640	235.5
941	OUT[711]	-4620	125.5	992	OUT[762]	-5640	235.5	1043	OUT[813]	-6660	125.5
942	OUT[712]	-4640	235.5	993	OUT[763]	-5660	125.5	1044	OUT[814]	-6680	235.5
943	OUT[713]	-4660	125.5	994	OUT[764]	-5680	235.5	1045	OUT[815]	-6700	125.5
944	OUT[714]	-4680	235.5	995	OUT[765]	-5700	125.5	1046	OUT[816]	-6720	235.5
945	OUT[715]	-4700	125.5	996	OUT[766]	-5720	235.5	1047	OUT[817]	-6740	125.5
946	OUT[716]	-4720	235.5	997	OUT[767]	-5740	125.5	1048	OUT[818]	-6760	235.5
947	OUT[717]	-4740	125.5	998	OUT[768]	-5760	235.5	1049	OUT[819]	-6780	125.5
948	OUT[718]	-4760	235.5	999	OUT[769]	-5780	125.5	1050	OUT[820]	-6800	235.5
949	OUT[719]	-4780	125.5	1000	OUT[770]	-5800	235.5	1051	OUT[821]	-6820	125.5
950	OUT[720]	-4800	235.5	1001	OUT[771]	-5820	125.5	1052	OUT[822]	-6840	235.5
951	OUT[721]	-4820	125.5	1002	OUT[772]	-5840	235.5	1053	OUT[823]	-6860	125.5
952	OUT[722]	-4840	235.5	1003	OUT[773]	-5860	125.5	1054	OUT[824]	-6880	235.5
953	OUT[723]	-4860	125.5	1004	OUT[774]	-5880	235.5	1055	OUT[825]	-6900	125.5
954	OUT[724]	-4880	235.5	1005	OUT[775]	-5900	125.5	1056	OUT[826]	-6920	235.5
955	OUT[725]	-4900	125.5	1006	OUT[776]	-5920	235.5	1057	OUT[827]	-6940	125.5
956	OUT[726]	-4920	235.5	1007	OUT[777]	-5940	125.5	1058	OUT[828]	-6960	235.5
957	OUT[727]	-4940	125.5	1008	OUT[778]	-5960	235.5	1059	OUT[829]	-6980	125.5
958	OUT[728]	-4960	235.5	1009	OUT[779]	-5980	125.5	1060	OUT[830]	-7000	235.5
959	OUT[729]	-4980	125.5	1010	OUT[780]	-6000	235.5	1061	OUT[831]	-7020	125.5
960	OUT[730]	-5000	235.5	1011	OUT[781]	-6020	125.5	1062	OUT[832]	-7040	235.5
961	OUT[731]	-5020	125.5	1012	OUT[782]	-6040	235.5	1063	OUT[833]	-7060	125.5
962	OUT[732]	-5040	235.5	1013	OUT[783]	-6060	125.5	1064	OUT[834]	-7080	235.5
963	OUT[733]	-5060	125.5	1014	OUT[784]	-6080	235.5	1065	OUT[835]	-7100	125.5

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Pad No.	Name	X	Y	Pad No.	Name	X	Y	Pad No.	Name	X	Y
1066	OUT[836]	-7120	235.5	1117	OUT[887]	-8140	125.5	1168	OUT[938]	-9160	235.5
1067	OUT[837]	-7140	125.5	1118	OUT[888]	-8160	235.5	1169	OUT[939]	-9180	125.5
1068	OUT[838]	-7160	235.5	1119	OUT[889]	-8180	125.5	1170	OUT[940]	-9200	235.5
1069	OUT[839]	-7180	125.5	1120	OUT[890]	-8200	235.5	1171	OUT[941]	-9220	125.5
1070	OUT[840]	-7200	235.5	1121	OUT[891]	-8220	125.5	1172	OUT[942]	-9240	235.5
1071	OUT[841]	-7220	125.5	1122	OUT[892]	-8240	235.5	1173	OUT[943]	-9260	125.5
1072	OUT[842]	-7240	235.5	1123	OUT[893]	-8260	125.5	1174	OUT[944]	-9280	235.5
1073	OUT[843]	-7260	125.5	1124	OUT[894]	-8280	235.5	1175	OUT[945]	-9300	125.5
1074	OUT[844]	-7280	235.5	1125	OUT[895]	-8300	125.5	1176	OUT[946]	-9320	235.5
1075	OUT[845]	-7300	125.5	1126	OUT[896]	-8320	235.5	1177	OUT[947]	-9340	125.5
1076	OUT[846]	-7320	235.5	1127	OUT[897]	-8340	125.5	1178	OUT[948]	-9360	235.5
1077	OUT[847]	-7340	125.5	1128	OUT[898]	-8360	235.5	1179	OUT[949]	-9380	125.5
1078	OUT[848]	-7360	235.5	1129	OUT[899]	-8380	125.5	1180	OUT[950]	-9400	235.5
1079	OUT[849]	-7380	125.5	1130	OUT[900]	-8400	235.5	1181	OUT[951]	-9420	125.5
1080	OUT[850]	-7400	235.5	1131	OUT[901]	-8420	125.5	1182	OUT[952]	-9440	235.5
1081	OUT[851]	-7420	125.5	1132	OUT[902]	-8440	235.5	1183	OUT[953]	-9460	125.5
1082	OUT[852]	-7440	235.5	1133	OUT[903]	-8460	125.5	1184	OUT[954]	-9480	235.5
1083	OUT[853]	-7460	125.5	1134	OUT[904]	-8480	235.5	1185	OUT[955]	-9500	125.5
1084	OUT[854]	-7480	235.5	1135	OUT[905]	-8500	125.5	1186	OUT[956]	-9520	235.5
1085	OUT[855]	-7500	125.5	1136	OUT[906]	-8520	235.5	1187	OUT[957]	-9540	125.5
1086	OUT[856]	-7520	235.5	1137	OUT[907]	-8540	125.5	1188	OUT[958]	-9560	235.5
1087	OUT[857]	-7540	125.5	1138	OUT[908]	-8560	235.5	1189	OUT[959]	-9580	125.5
1088	OUT[858]	-7560	235.5	1139	OUT[909]	-8580	125.5	1190	OUT[960]	-9600	235.5
1089	OUT[859]	-7580	125.5	1140	OUT[910]	-8600	235.5	1191	OUT[961]	-9620	125.5
1090	OUT[860]	-7600	235.5	1141	OUT[911]	-8620	125.5	1192	SHIELDING[187]	-9640	235.5
1091	OUT[861]	-7620	125.5	1142	OUT[912]	-8640	235.5	1193	XONL	-9742	262
1092	OUT[862]	-7640	235.5	1143	OUT[913]	-8660	125.5	1194	XONL	-9832	262
1093	OUT[863]	-7660	125.5	1144	OUT[914]	-8680	235.5	1195	XONL	-9922	262
1094	OUT[864]	-7680	235.5	1145	OUT[915]	-8700	125.5	1196	XONL	-10012	262
1095	OUT[865]	-7700	125.5	1146	OUT[916]	-8720	235.5	1197	OEL	-9832	208
1096	OUT[866]	-7720	235.5	1147	OUT[917]	-8740	125.5	1198	OEL	-9922	208
1097	OUT[867]	-7740	125.5	1148	OUT[918]	-8760	235.5	1199	OEL	-10012	208
1098	OUT[868]	-7760	235.5	1149	OUT[919]	-8780	125.5	1200	U_DL	-9832	156
1099	OUT[869]	-7780	125.5	1150	OUT[920]	-8800	235.5	1201	U_DL	-9922	156
1100	OUT[870]	-7800	235.5	1151	OUT[921]	-8820	125.5	1202	U_DL	-10012	156
1101	OUT[871]	-7820	125.5	1152	OUT[922]	-8840	235.5	1203	CKVL	-9832	104
1102	OUT[872]	-7840	235.5	1153	OUT[923]	-8860	125.5	1204	CKVL	-9922	104
1103	OUT[873]	-7860	125.5	1154	OUT[924]	-8880	235.5	1205	CKVL	-10012	104
1104	OUT[874]	-7880	235.5	1155	OUT[925]	-8900	125.5	1206	PATHL	-9832	52
1105	OUT[875]	-7900	125.5	1156	OUT[926]	-8920	235.5	1207	PATHL	-9922	52
1106	OUT[876]	-7920	235.5	1157	OUT[927]	-8940	125.5	1208	PATHL	-10012	52
1107	OUT[877]	-7940	125.5	1158	OUT[928]	-8960	235.5	1209	STVU	-9832	0
1108	OUT[878]	-7960	235.5	1159	OUT[929]	-8980	125.5	1210	STVU	-9922	0
1109	OUT[879]	-7980	125.5	1160	OUT[930]	-9000	235.5	1211	STVU	-10012	0
1110	OUT[880]	-8000	235.5	1161	OUT[931]	-9020	125.5	1212	SELL	-9832	-52
1111	OUT[881]	-8020	125.5	1162	OUT[932]	-9040	235.5	1213	SELL	-9922	-52
1112	OUT[882]	-8040	235.5	1163	OUT[933]	-9060	125.5	1214	SELL	-10012	-52
1113	OUT[883]	-8060	125.5	1164	OUT[934]	-9080	235.5	1215	VGHL	-9832	-104
1114	OUT[884]	-8080	235.5	1165	OUT[935]	-9100	125.5	1216	VGHL	-9922	-104
1115	OUT[885]	-8100	125.5	1166	OUT[936]	-9120	235.5	1217	VGHL	-10012	-104
1116	OUT[886]	-8120	235.5	1167	OUT[937]	-9140	125.5	1218	VCCL	-9832	-156

Pad No.	Name	X	Y
1219	VCCL	-9922	-156
1220	VCCL	-10012	-156
1221	VGLL	-9832	-208
1222	VGLL	-9922	-208
1223	VGLL	-10012	-208
1224	AL_MARK_L	-9383.5	-220.5
1225	AL_MARK_R	9383.5	-220.5

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. itipower customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify itipower for any damages resulting from such improper use or sale.

11. REVISION HISTORY

Revision	Content	Date
1.0	New Issue	2012/08/22