EK79713BCGB

Rev. 1.4

DATA SHEET

1200-Output TFT LCD Source Driver with TCON

fitipower integrated technology Inc.

Table of Contents

1200-Output TFT LCD Source Driver with TCON

1. GENERAL DESCRIPTION

EK79713BCGB is a highly integrated 1200 channel source driver with TTL interface Timing Controller for color TFT-LCD panels. EK79713BCGB is special designed for dual-gate architecture TFT panel. This chip is dedicated for the display resolution of: 800*480 and 800*600 application.

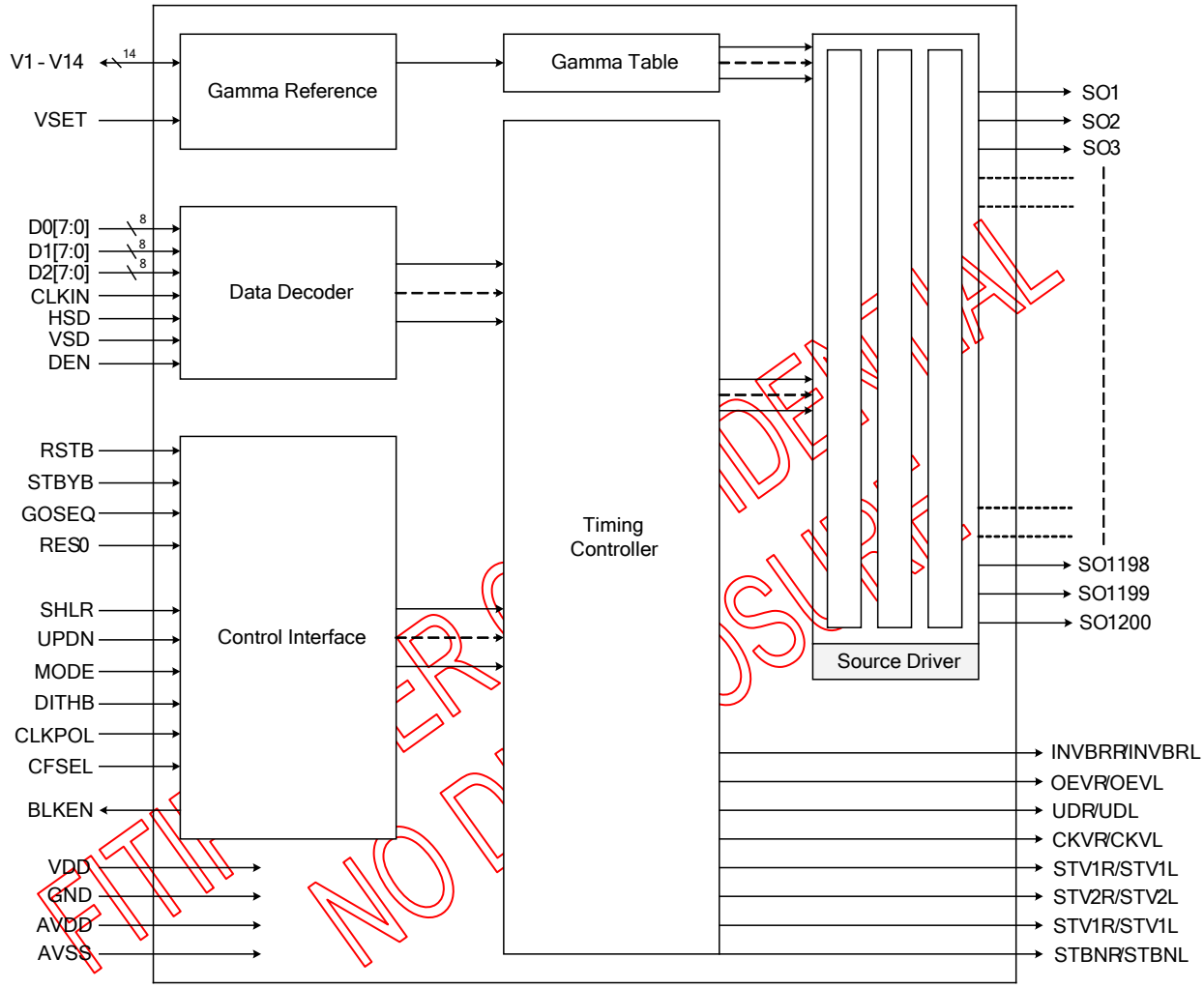
EK79713BCGB input timing support TTL digital 24bit parallel RGB data format, and source output support 8-bit resolution 256 gray scales with dithering feature enabled. Operating parameters can be set via pin control for all control features. Special circuit architecture is designed for lower power dissipation.

EK79713BCGB can be configured as dual-gate operation mode for reducing FPC amount and save the cost. With wide range of supply voltages and many pin control features make this chip more suitable for various applications.

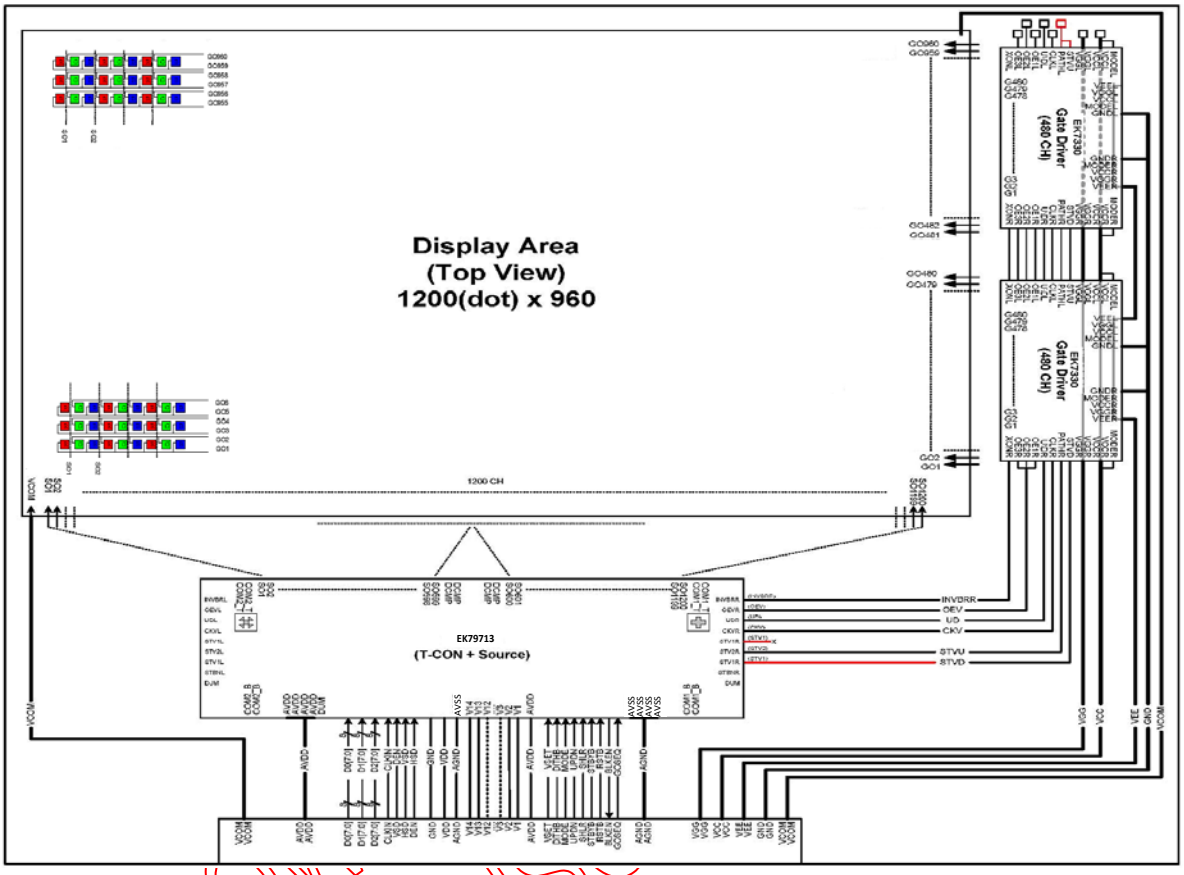
2. FEATURES

- Special design for small-sized color TFT LCD source drivers with timing controller
- Integrated 1200 channel source driver
- Support dual-gate operation mode
- Support display resolutions : 800(RGB)x480、800(RGB)x600
- Support TTL 24-bit parallel (RGB) input timing
- Source output with 8-bit resolution 256 gray scale (2-bit dithering)
- Support Delta or Stripe color filter configuration
- Support stand-by mode for low power consumption
- Pin controlled UP/DOWN, LEFT/RIGHT, HV/DE mode select function
- Embedded Gamma Table for special custom request
- Support external V1 ~ V14 pad for Gamma adjusting
- Output dynamic range: 0.1 ~ AVDD-0.1V
- Power for source driver voltage AVDD: 6.5V ~ 13.5V
- Power for digital interface circuit VDD: 3.0 ~ 3.6V
- Max. operating frequency: 50 MHz
- COG package

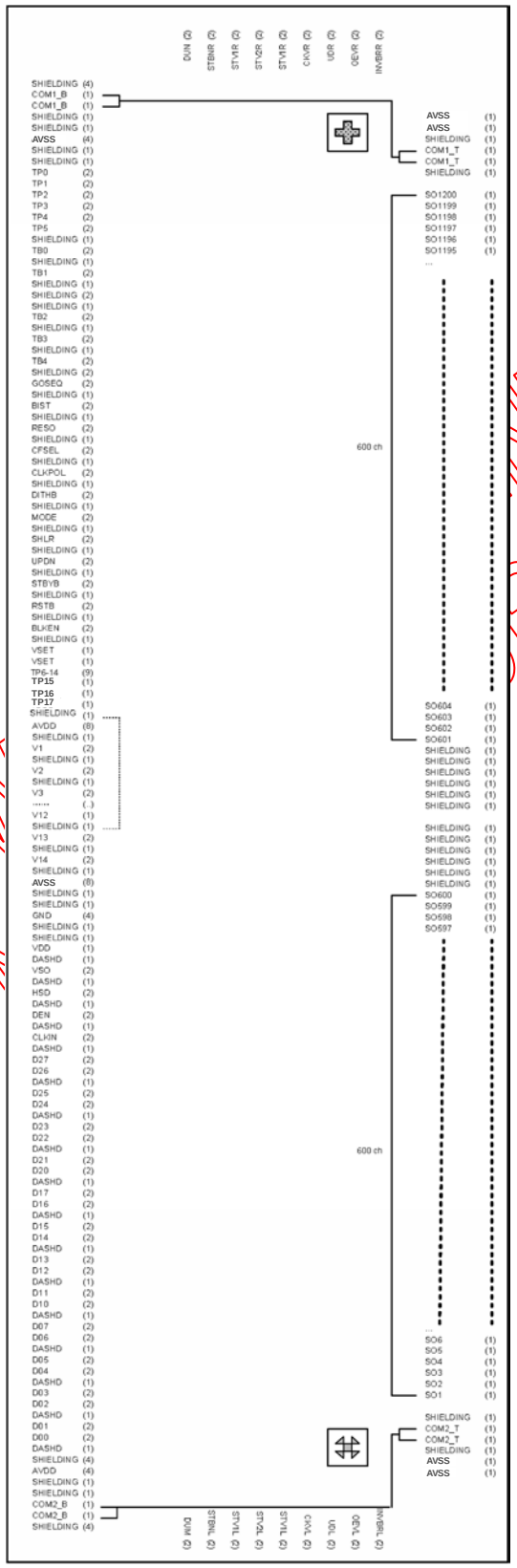
3. BLOCK DIAGRAM



Block Diagram



Application Block Diagram – Dual Gate Application



Pad Sequence (Bump Side)

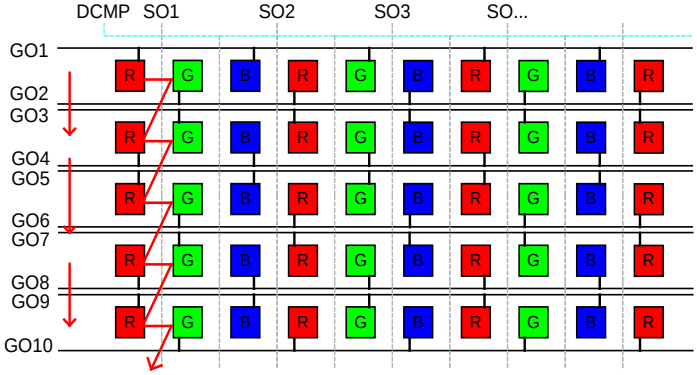
4. PIN DESCRIPTION

Pin Description

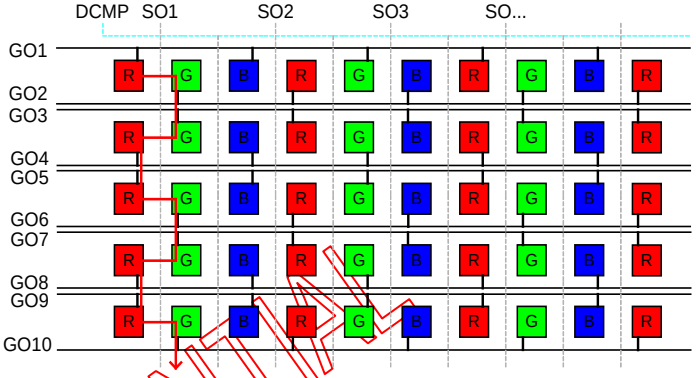
Pin Name	Pin Type	Description
D07~D00 D17~D10 D27~D20	Input	Parallel data Input. For TTL 24-bit parallel RGB image data input. D[07:00] = R[7:0] data; D[17:10] = G[7:0] data; DIN[27:20] = B[7:0] data. For 18bit RGB interface, connect two LSB bits of all the R/G/B data buses to GND.
CLKIN	Input	Clock for Input Data. Data latched at rising/falling edge of this signal. Default falling edge.
HSD	Input	Horizontal Sync input. Negative polarity. Normally pull high.
VSD	Input	Vertical Sync input. Negative polarity. Normally pull high.
DEN	Input	Data Input Enable. Active High to enable the data input bus under “DE Mode”. Normally pull low.
MODE	Input	DE / SYNC mode select. Normally pull high H: DE mode. L: HSD/VSD mode.
RES0	Input	Display resolution selection. RES0 = “0”, for 800(RGB)*480 display resolution RES0 = “1”, for 800(RGB)*600 display resolution
DITHB	Input	Dithering function enable control. Normally pull high DITHB = “1”, Disable internal dithering function DITHB = “0”, Enable internal dithering function
CLKPOL	Input	Input clock edge selection. Normally pull low CLKPOL = “1”, Latch data at CLKIN rising edge. CLKPOL = “0”, Latch data at CLKIN falling edge. (Default)
BLKEN	Output	Backlight enable control signal for external controller. BLKEN = “1”, Logical control signal to turn on external backlight controller BLKEN = “0”, Turn off external backlight controller Note: Refer to the Power On/Off Sequence for the detail information.
CFSEL	Input	Color Filter type selection. Normally pull high CFSEL = “1”, Stripe mode. (Default) CFSEL = “0”, Delta mode
V1 ~ V14	Bi-direction	When VSET=”0”, INTERNAL Gamma Table is used. V1~V14 pad are un-used. When VSET=”1”. V1~V14 are the external gamma correction points. The voltage of these pins must be: AVSS<V14<V13<V12<V11<V10<V9<V8;V7<V6<V5<V4<V3<V2<V1<AVDD
VSET	Input	Gamma correction source select. Normally pull low. VSET = ”0”, use internal Gamma Reference voltage (AVDD). (Default mode) VSET = ”1”, use external Gamma Correction Input (V1~V14).
RSTB	Input	Global reset pin. Active Low to enter Reset State. Suggest to connecting with an RC reset circuit for stability. Normally pull high.
STBYB	Input	Standby mode, Normally pull high. STBYB = “1”, normal operation STBYB = “0”, timing controller, source driver will turn off, all output are High-Z
SHLR	Input	Source Right or Left sequence control. Normally pull high. SHLR = “L”, shift left: last data = S1←S2←S3.....←S1200 = first data. SHLR = “H”, shift right: first data = S1 →S→S3.....→S1200 = last data.

Pin Name	Pin Type	Description
UPDN	Input	Gate Up or Down scan control. Normally pull low. UPDN = “L”, STV2 output vertical start pulse and UD pin output logical “0” to Gate driver. UPDN = “H”, STV1 output vertical start pulse and UD pin output logical “1” to Gate driver.
BIST	Input	Normal Operation/BIST pattern select. Normally pull low BIST = H : BIST(DCLK input is not needed) BIST = L : Normal Operation
GOSEQ	Input	Gate on sequence. Normally pull low. Please refer to Note. GOSEQ = H : INVBRR/INVBRL = L Gate on G1→G2→G4→G3→G5→G6→G8→G7……... GOSEQ = L : INVBRR/INVBRL = H Gate on G1→G2→G3→G4→G5→G6→G7→G8……...
OEVR/OEVL	Output	Gate driver control signal.
UDR/UDL	Output	Gate driver control signal.
CKVR/CKVL	Output	Gate driver control signal.
STV1R/STV1L	Output	Gate driver control signal.
STV2R/STV2L	Output	Gate driver control signal.
STBNR/STBNL	Output	Gate driver control signal.
INVBRR/INVBRL	Output	Gate driver control signal (For special Gate on sequence).
AVDD	Power Input	Power supply for analog circuits
AVSS	Power Input	Ground pins for analog circuits
VDD/VDDD	Power Input	Power supply for digital circuits
GND/VSSD	Power Input	Ground pins for digital circuits
SO1~SO1200	Output	Source Driver Output Signals. All outputs will be of unknown values under stand-by mode.
ALIGN	Mark	For assembly alignment.
COM1_B COM1_B	Shorted line	Internal link together between input side and output side.
COM1_T COM2_T	Shorted line	Internal link together between input side and output side.
TP17~0 TB0~4	Testing	Float these pins for normal operation.
SHIELDING	Shielding	IC Shielding pads. Those pins are internally connected to the AVSS. DO NOT connect to any WOA on the panel.
DASHD	Shielding	Data Bus Shielding pad. Those pins are internally connected to the GND. RECOMMAND to add shielding lines on the FPC to reduce EMI.
DUM	Dummy	Dummy pads. Those pins are floating pads.

GOSEQ = L, INVBRRINVBRL= H,
With traditional Gate driver.



GOSEQ = H, INVBRRINVBRL= L,
With special design Gate driver



EK79713BCGB Pass Line Description:

Pass Line No:	Pad Name	
1	COM1_B	COM1_T
2	COM2_B	COM2_T

4.1. Value of wiring resistance to each pin

The recommended wiring resistance values are shown below. The wiring resistance values affect the current capacity of the power supply, so be sure to design using values that do not exceed those recommended.

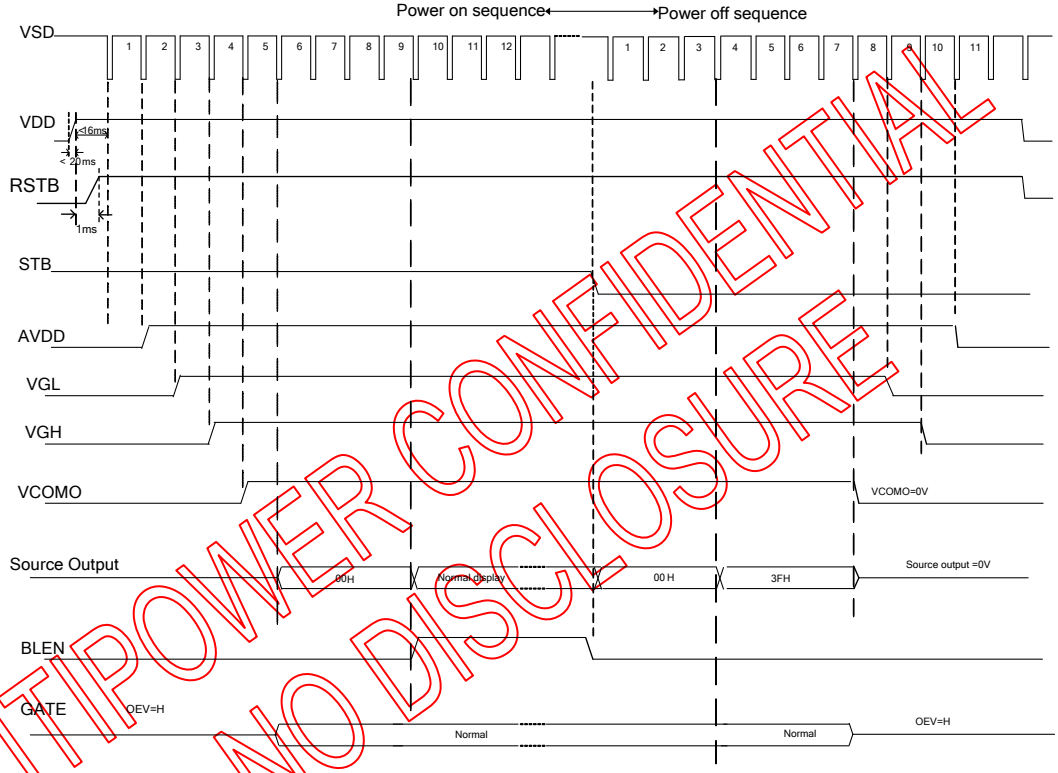
Pin Name	Wiring Resistance value(Ω)	Pin Name	Wiring resistance value (Ω)
AVDD	<5	SHLR	<500
AVSS	<5	UPDN	<500
VDD	<10	BIST	<500
GND	<10	MODE	<500
V1~V14	<10	RES0	<500
D00~D07	<50	CLKPOL	<500
D10~D17	<50	BLKEN	<500
D20~D27	<50	CFSEL	<500
CLKIN	<50	VSET	<500
VSD	<50	OEVx	<500
HSD	<50	UDx	<500
DEN	<50	CKVx	<500
RSTB	<500	STV1x	<500
STBYB	<500	STV2x	<500
DITHB	<500	STBNx	<500

5. FUNCTION DESCRIPTION

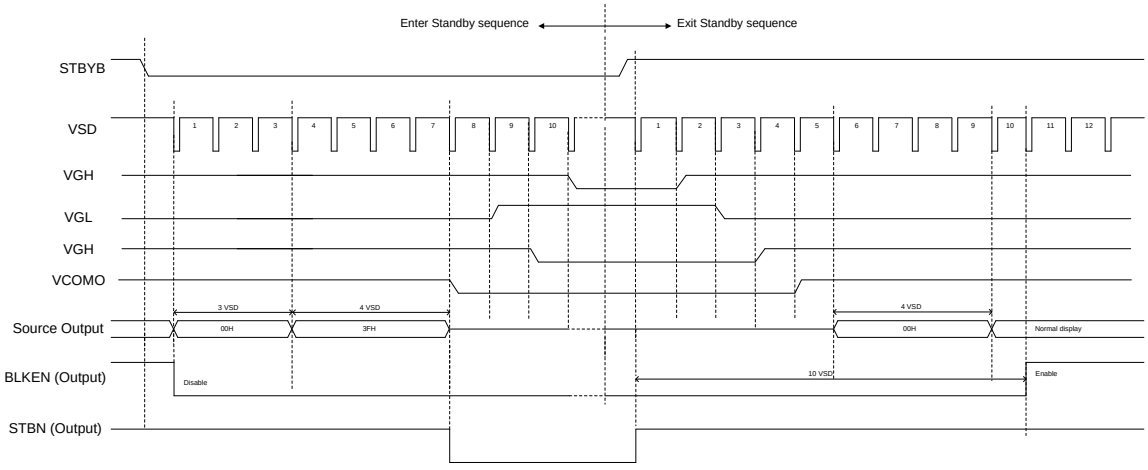
5.1. Power On/Off Sequence

In order to prevent IC from power on reset fail, the rising time (TPOR) of the digital power supply VDD should be maintained within the given specifications. Refer to “AC Characteristics” for more detail on timing.

This is another paragraph of sub-function description.



Power-On/Off Timing Sequence



Enter and Exit Standby Mode Sequence

5.2. Input Data VS Output Channels

5.2.1. CFSEL="1", Stripe Mode, UDPN=1

SHLR="1" , right shift

Output	SO1	SO2	SO3	---	SO1198	SO1199	SO1200
Order	First data			→	Last data		
Odd Line/Gn	D07~D00	D27~D20	D17~D10	---	D07~D00	D27~D20	D17~D10
Odd Line/Gn+1	D17~D10	D07~D00	D27~D20	---	D17~D10	D07~D00	D27~D20
Even Line/Gn	D07~D00	D27~D20	D17~D10	---	D07~D00	D27~D20	D17~D10
Even Line/Gn+1	D17~D10	D07~D00	D27~D20	---	D17~D10	D07~D00	D27~D20

SHLR="0", left shift

Output	SO1	SO2	SO3	---	SO1198	SO1199	SO1200
Order	Last data			←	First data		
Odd Line/Gn	D07~D00	D27~D20	D17~D10	---	D07~D00	D27~D20	D17~D10
Odd Line/Gn+1	D17~D10	D07~D00	D27~D20	---	D17~D10	D07~D00	D27~D20
Even Line/Gn	D07~D00	D27~D20	D17~D10	---	D07~D00	D27~D20	D17~D10
Even Line/Gn+1	D17~D10	D07~D00	D27~D20	---	D17~D10	D07~D00	D27~D20

5.2.2. CFSEL="0", Delta Mode, UDPN=1

SHLR="1" , right shift

Output	SO1	SO2	SO3	---	SO1198	SO1199	SO1200
Order	First data			→	Last data		
Odd Line/Gn	D07~D00	D27~D20	D17~D10	---	D07~D00	D27~D20	D17~D10
Odd Line/Gn+1	D17~D10	D07~D00	D27~D20	---	D17~D10	D07~D00	D27~D20
Even Line/Gn	D17~D10	D07~D00	D27~D20	---	D17~D10	D07~D00	D27~D20
Even Line/Gn+1	D27~D20	D17~D10	D07~D00	---	D27~D20	D17~D10	D07~D00

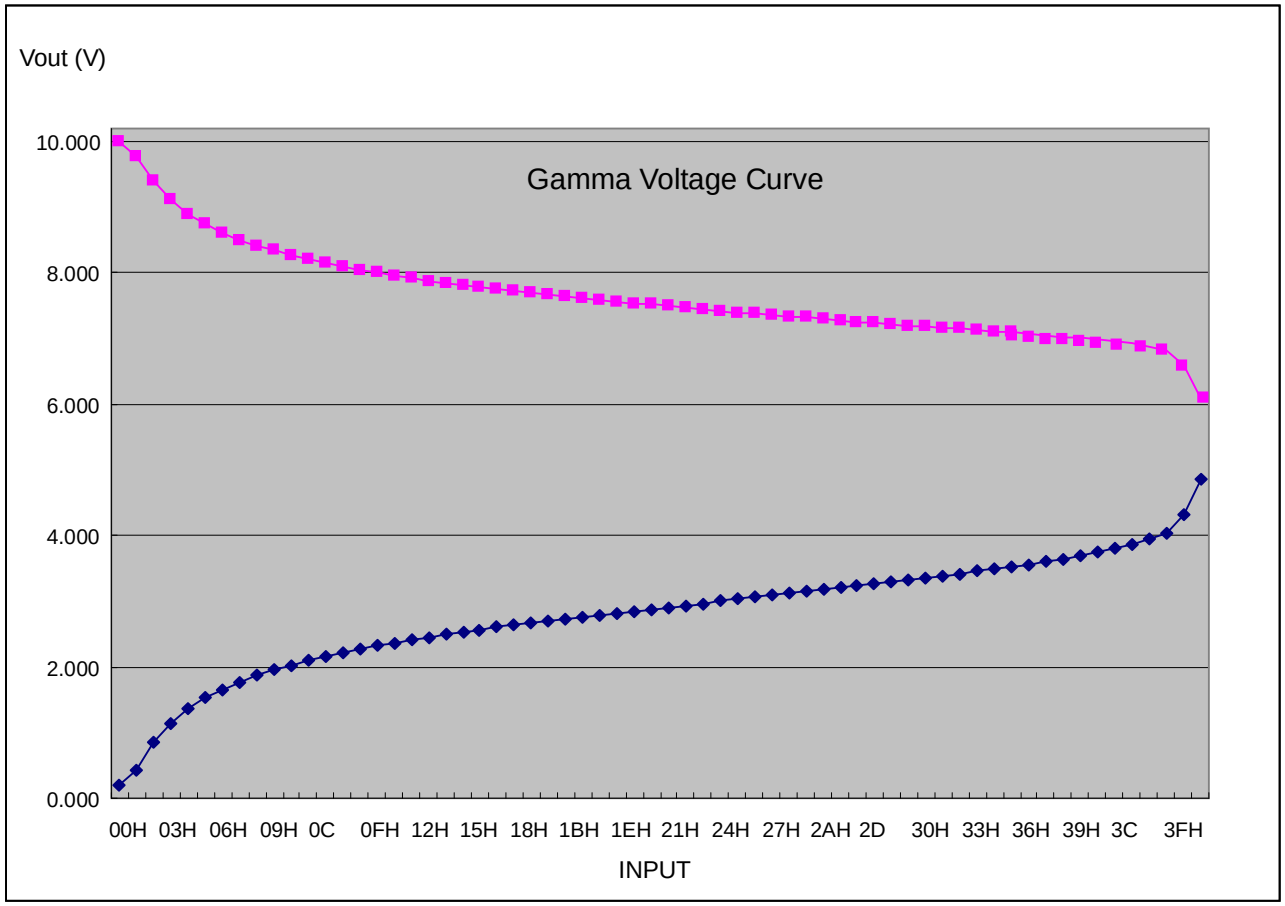
SHLR="0", left shift

Output	SO1	SO2	SO3	---	SO1198	SO1199	SO1200
Order	Last data			←	First data		
Odd Line/Gn	D07~D00	D27~D20	D17~D10	---	D07~D00	D27~D20	D17~D10
Odd Line/Gn+1	D17~D10	D07~D00	D27~D20	---	D17~D10	D07~D00	D27~D20
Even Line/Gn	D17~D10	D07~D00	D27~D20	---	D17~D10	D07~D00	D27~D20
Even Line/Gn+1	D27~D20	D17~D10	D07~D00	---	D27~D20	D17~D10	D07~D00

5.3. Input Data VS Output Voltage

The figure below shows the relationship between the input data and the output voltage. Refer to the following pages for the relative resistor values and voltage calculation method.

Gamma Tables very for each customer.



Remark: AVDD-0.1 > V1 > V2> V3 > V4 > V5 > V6 > V7; V8 > V9 > V10 > V11 > V12 > V13 > V14 > AVSS+0.1V

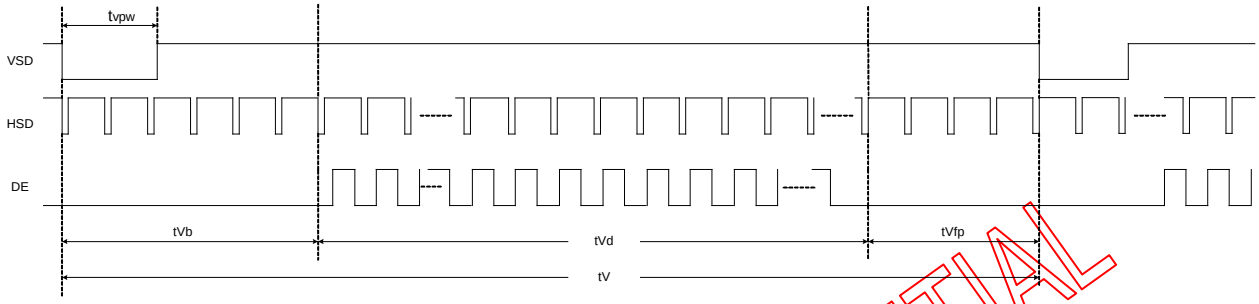
5.4. Input Data and Output Voltage Reference Table

Input Data and Output Voltage Reference Table

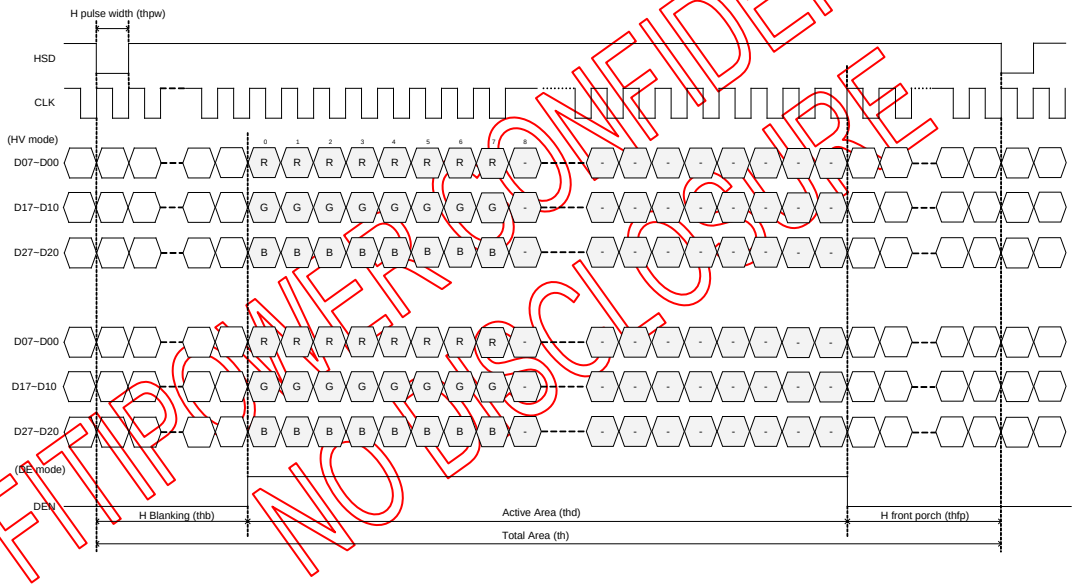
Asy-Gamma @AVDD=10.4V					
Level	V+	V-	Level	V+	V-
0	9.99544	0.19544	32	7.62801	2.96276
1	9.74167	0.46609	33	7.6064	2.99432
2	9.38791	0.84598	34	7.58521	3.02776
3	9.14826	1.10631	35	7.56694	3.05722
4	8.959	1.31459	36	7.54802	3.0877
5	8.81096	1.47967	37	7.52618	3.11692
6	8.69215	1.61326	38	7.50274	3.14577
7	8.59155	1.7279	39	7.48152	3.17187
8	8.50539	1.82725	40	7.46153	3.20067
9	8.42879	1.91694	41	7.44259	3.23201
10	8.3584	1.99876	42	7.43079	3.27186
11	8.30101	2.06792	43	7.41956	3.30901
12	8.24502	2.13436	44	7.40122	3.34041
13	8.19379	2.19625	45	7.38502	3.37533
14	8.14825	2.252	46	7.36578	3.4085
15	8.10377	2.30712	47	7.34928	3.44419
16	8.0645	2.35712	48	7.32513	3.4736
17	8.02666	2.40518	49	7.30037	3.50375
18	7.98939	2.45231	50	7.28065	3.54065
19	7.95731	2.49381	51	7.26167	3.58033
20	7.92413	2.53902	52	7.24646	3.62519
21	7.89613	2.58001	53	7.22793	3.66813
22	7.86902	2.61944	54	7.21236	3.72165
23	7.8407	2.66138	55	7.19252	3.77243
24	7.81479	2.69689	56	7.17277	3.82699
25	7.78911	2.73111	57	7.15248	3.89333
26	7.76239	2.76723	58	7.1318	3.96111
27	7.73804	2.80206	59	7.10615	4.04641
28	7.716	2.83394	60	7.07255	4.13526
29	7.69307	2.8673	61	7.01529	4.24283
30	7.6691	2.90199	62	6.9063	4.39937
31	7.64845	2.93198	63	6.28445	5.08445

Note: Gamma Tables Vary for each customer.

5.5. Data Input Format



Vertical input timing



Horizontal input timing

5.6. Timing Characteristic

5.6.1. For 800 × 480 panel

Horizontal input timing

Parameter		Symbol	Value			Unit
Horizontal display area		thd	800			DCLK
DCLK frequency		fclk	Min.	Typ.	Max	
			/	33.3	50	MHz
1 Horizontal Line		th	862	1056	1200	DCLK
HSD pulse width	Min.	thpw	1			
	Typ.		/			
	Max.		40			
HSD Back Porch (Blanking)		thb	46	46	46	
HSD Front Porch		thfp	16	210	354	

Vertical input timing

Parameter	Symbol	Min.	Typ.	Max.	Unit
Vertical display area	tvd		480		H
VSD period time	tv	510	525	650	H
VSD pulse width	tvpw	1	/	20	H
VSD Back Porch (Blanking)	tvb	23	23	23	H
VSD Front Porch	tvfp	7	22	147	H

5.6.2. For 800 × 600 panel

Horizontal input timing

Parameter		Symbol	Value			Unit
Horizontal display area		thd	800			DCLK
DCLK frequency		fclk	Min.	Typ.	Max	
			-	40	50	MHz
1 Horizontal Line		th	862	1056	1200	DCLK
HSD pulse width	Min.	thpw	1			
	Typ.		/			
	Max.		40			
HSD Back Porch (Blanking)		thb	46	46	46	
HSD Front Porch		thfp	16	210	354	

Vertical input timing

Parameter	Symbol	Min.	Typ.	Max.	Unit
Vertical display area	tvd		600		H
VSD period time	tv	624	635	700	H
VSD pulse width	tvpw	1	/	20	H
VSD Back Porch (Blanking)	tvb	23	23	23	H
VSD Front Porch	tvfp	1	12	77	H

6. ELECTRICAL SPECIFICATION

6.1. Absolute Maximum Ratings

VOLTAGE (TA = 25°C, GND = AVSS = 0V)

	Min.	Max.	Unit
Digital Supply Voltage, VDD	-0.5	+5.0	V
Analog Supply Voltage, AVDD, V1~V14	-0.5	+15.0	V

TEMPERATURE

	Min.	Max.	Unit
Operating temperature	-20	+85	°C
Storage temperature	-55	+125	°C

Comments

Stresses above those listed under "Absolute Maximum Ratings" 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 exposed to absolute maximum rating conditions for extended periods may affect device reliability.

6.2. Recommended Operating Range

Recommended Operating Range (TA = -20 to 85°C, GND = AVSS = 0V)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Digital supply voltage	VDD	3.0	3.3	3.6	V
Analog supply voltage	AVDD	6.5	/	13.5	V
Digital input voltage	VIN	0	/	VDD	V

6.3. DC Characteristics

DC Characteristics

(TA = -20 to 85°C, VDD = 3.0 to 3.6V, AVDD = 6.5 to 13.5V, GND = AVSS = 0V)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Low level input voltage	Vil	For the digital circuit	0	/	0.3×VDD	V
High level input voltage	Vih	For the digital circuit	0.7×VDD	/	VDD	V
Input leakage current	Ii	For the digital circuit	/	/	±1	μA
High level output voltage	Voh	Ioh= -400 μA	VDD-0.4	/	/	V
Low level output voltage	Vol	Iol= +400 μA	/	/	GND+0.4	V
Pull low/high resistor	Ri	For the digital input pin @ VDD=3.3V	150K	250K	350K	ohm
Digital Operation current	Idd	Fclk=40 MHz, FLD=37.88KHz, VDD=3.3V	/	8	10	mA
Digital Stand-by current	Ist1	Clock and all functions are stopped	/	10	50	μA
Analog Operating Current	Idda	No load, Fclk=40MHz, FLD=37.88KHz @ AVDD=10V,V1=8V, V14=0.4V	/	10	12	mA
Analog Stand-by current	Ist2	No load, Clock and all functions are stopped	/	10	50	μA
Input level of V1 ~ V7	Vref1	Gamma correction voltage input	0.4*AVDD	/	AVDD-0.1	V
Input level of V8 ~ V14	Vref2	Gamma correction voltage input	0.1	/	0.6*AVDD	V
Output Voltage deviation	Vod1	Vo = AVSS+0.1V ~ AVSS+0.5V and Vo = AVDD-0.5V ~ AVDD-0.1V	/	±20	±35	mV
Output Voltage deviation	Vod2	Vo = AVSS+0.5V ~ AVDD-0.5V	/	±15	±20	mV
Output Voltage Offset between Chips	Voc	Vo = AVSS+0.5V ~ AVDD-0.5V	/	/	±20	mV
Dynamic Range of Output	Vdr	SO1 ~ SO1200	0.1	/	AVDD-0.1	V
Sinking Current of Outputs	IOLy	SO1 ~ SO1200; Vo=0.1V v.s 1.0V , AVDD=13.5V	80	/	/	uA
Driving Current of Outputs	IOHy	SO1 ~ SO1200; Vo=13.4V v.s 12.5V , AVDD=13.5V	80	/	/	uA
Resistance of Gamma Table	Rg	Rn: Internal gamma resistor	0.7*Rn	1.0*Rn	1.3*Rn	ohm

6.4. AC Characteristics

AC Characteristics

(TA = -20 to 85°C, VDD = 3.0 to 3.6V, AVDD = 6.5 to 13.5V, GND = AVSS = 0V)

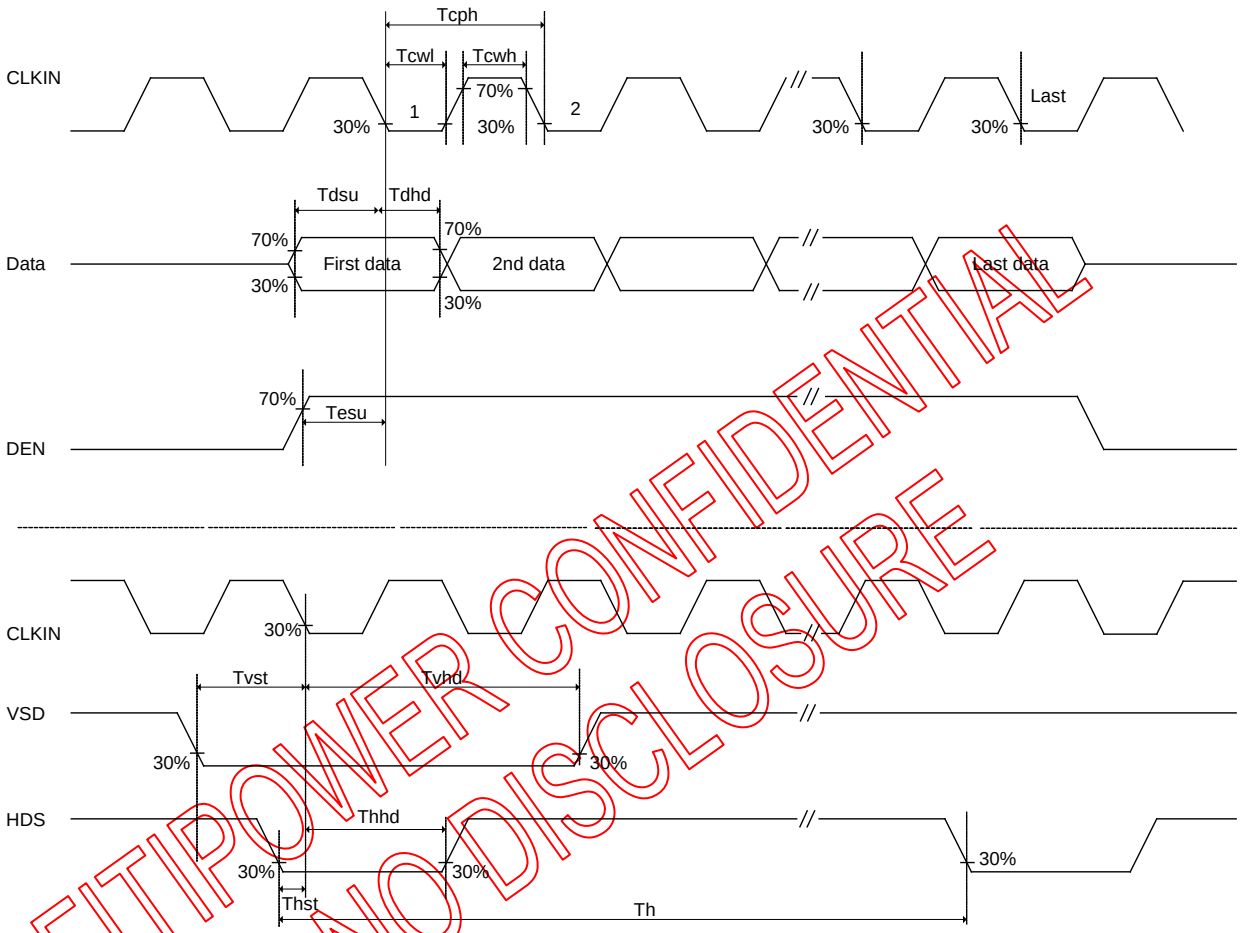
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
VDD Power On Slew rate	TPOR	From 0V to 90% VDD	/	/	20	ms
RSTB pulse width	TRST	CLKIN = 40MHz	1	/	/	ms
CLKIN cycle time	Tcph	-	20	/	/	ns
CLKIN pulse duty	Tcwh	-	40	50	60	%
VSD setup time	Tvst	-	8	/	/	ns
VSD hold time	Tvhd	-	8	/	/	ns
HSD setup time	Thst	-	8	/	/	ns
HSD hold time	Thhd	-	8	/	/	ns
Data set-up time	Tdsu	D0[7:0], D1[7:0], D2[7:0] to CLKIN	8	/	/	ns
Data hold time	Tdhd	D0[7:0], D1[7:0], D2[7:0] to CLKIN	8	/	/	ns
DEN setup time	Tesu	-	8	/	/	ns
DEN hold time	Tehd	-	8	/	/	ns
Output stable time	Tsst	10% to 90% target voltage, CL=120pF, R=10K ohm	/	/	6	us

6.5. Timing Table

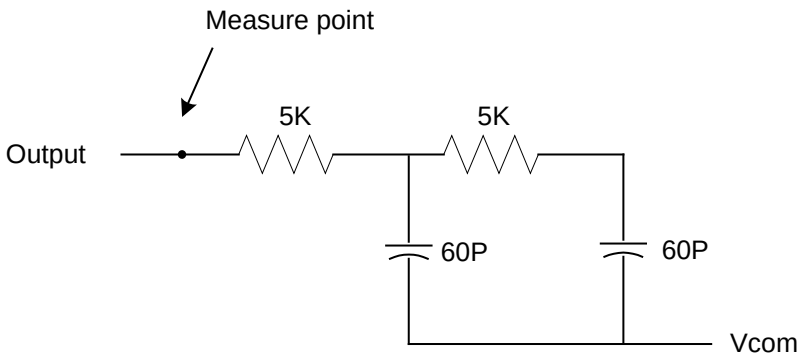
Parallel 24-bit RGB Mode

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
CLKIN Frequency	Fclk	VDD = 3.0V ~3.6V	/	33.3	50	MHz
CLKIN Cycle Time	Tclk	-	20	30	/	ns
CLKIN Pulse Duty	Tcwh	Tclk= Tcwh + cwl	40	50	60	%
	Tcwl		40	50	60	%
VSD to STV	Tstv	HV mode	/	24	/	H
DEN to STV	Tstv	DE mode	/	4	/	CLKIN
STV pulse width	Twstv	-	/	0.5	/	H
STV to CKV	Tckv	-	/	18	/	CLKIN
STV to OEV	Toev	-	/	2	/	CLKIN
CKV Pulse Width	Twckv	-	/	66	/	CLKIN
OEV Pulse Width	Twoev	-	/	50	/	CLKIN

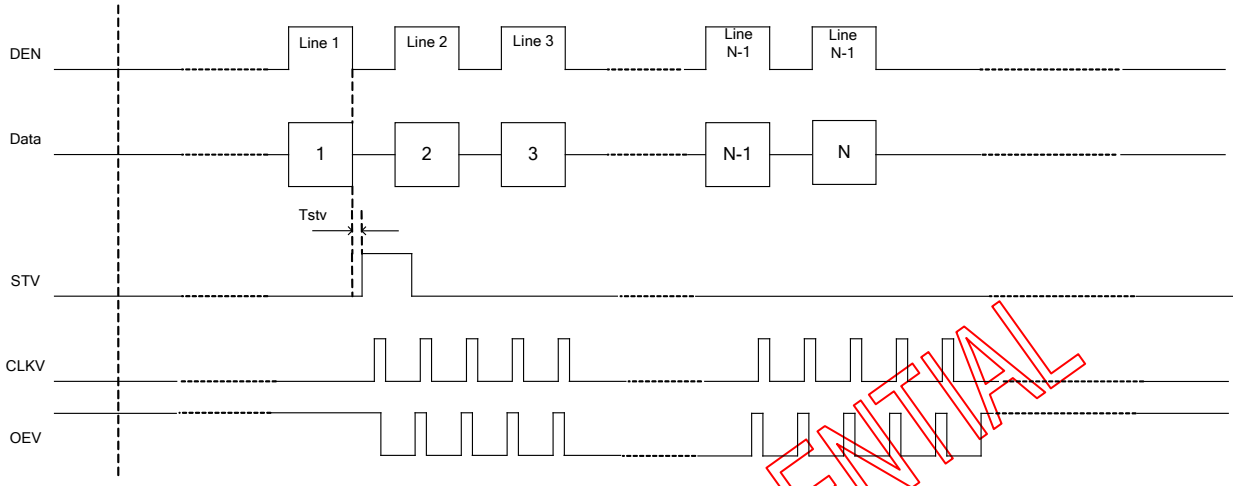
6.6. Timing Waveform

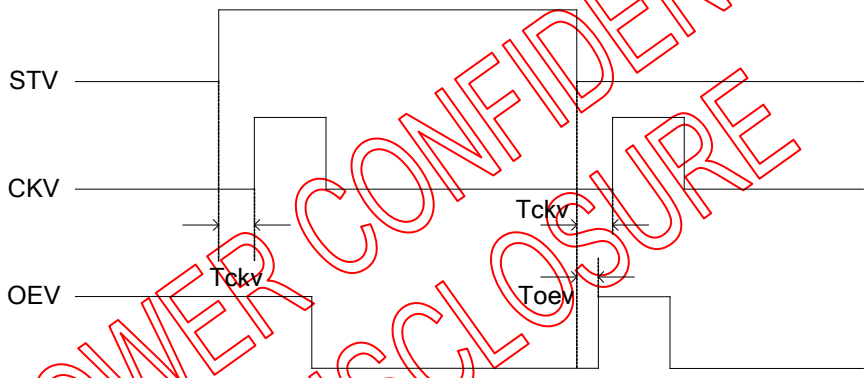


Input Clock and Data Timing Diagram

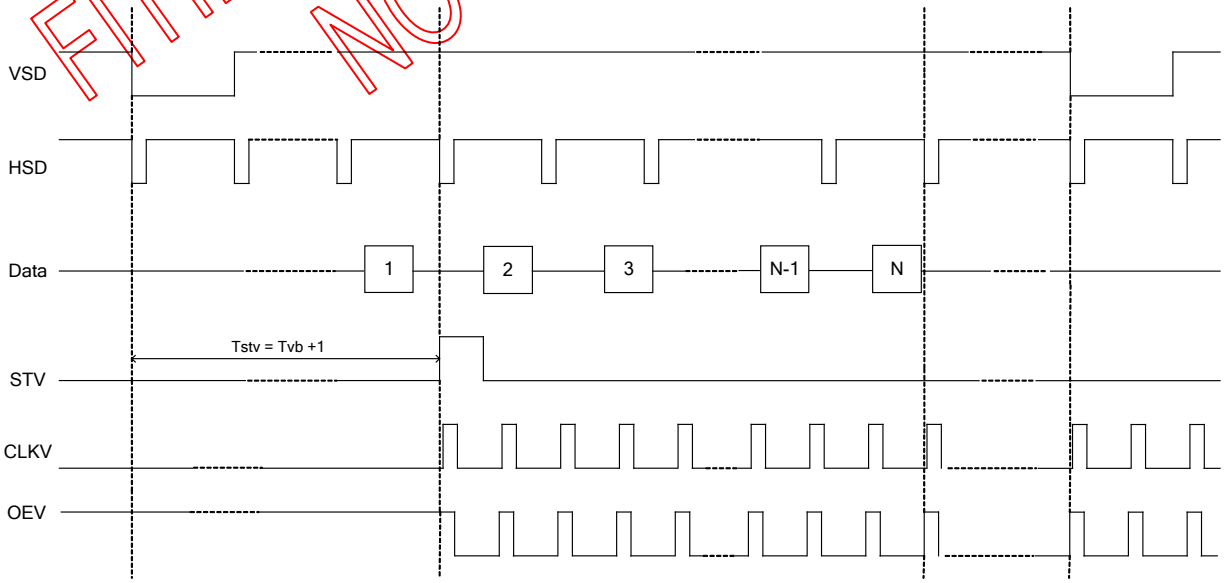


Output load condition





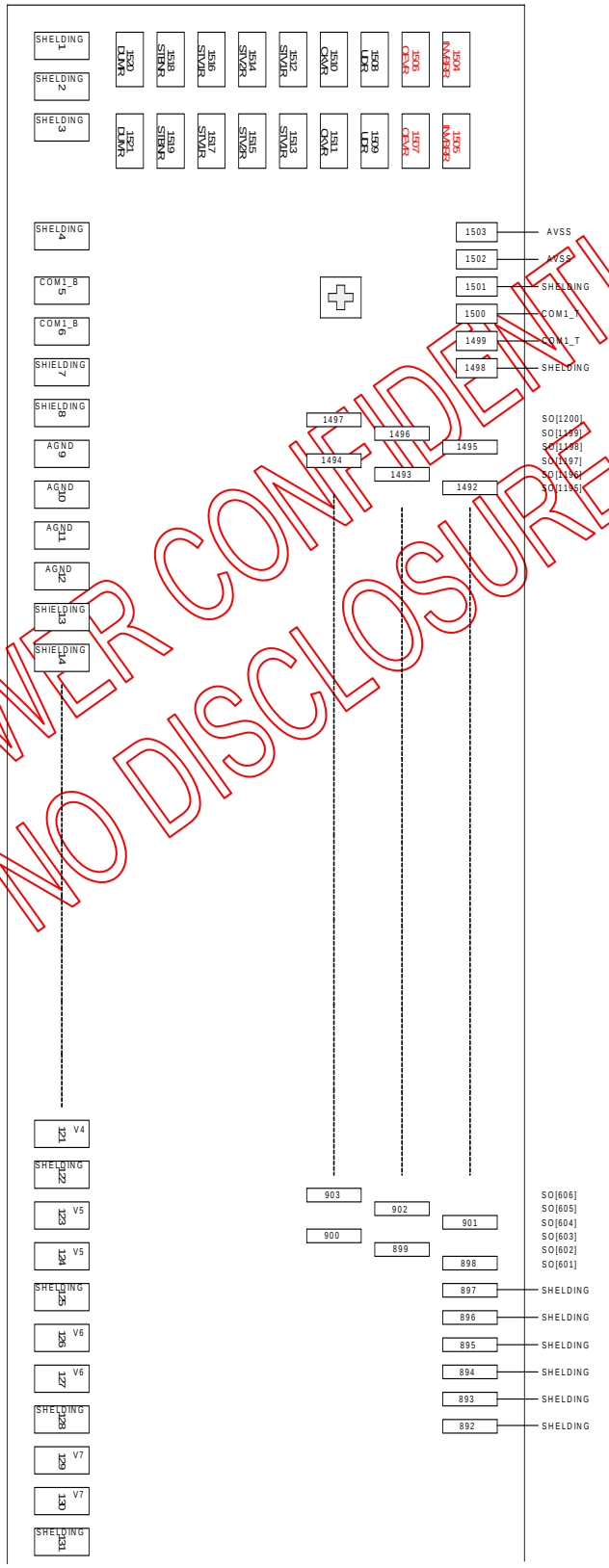
Vertical Timing Diagram DE

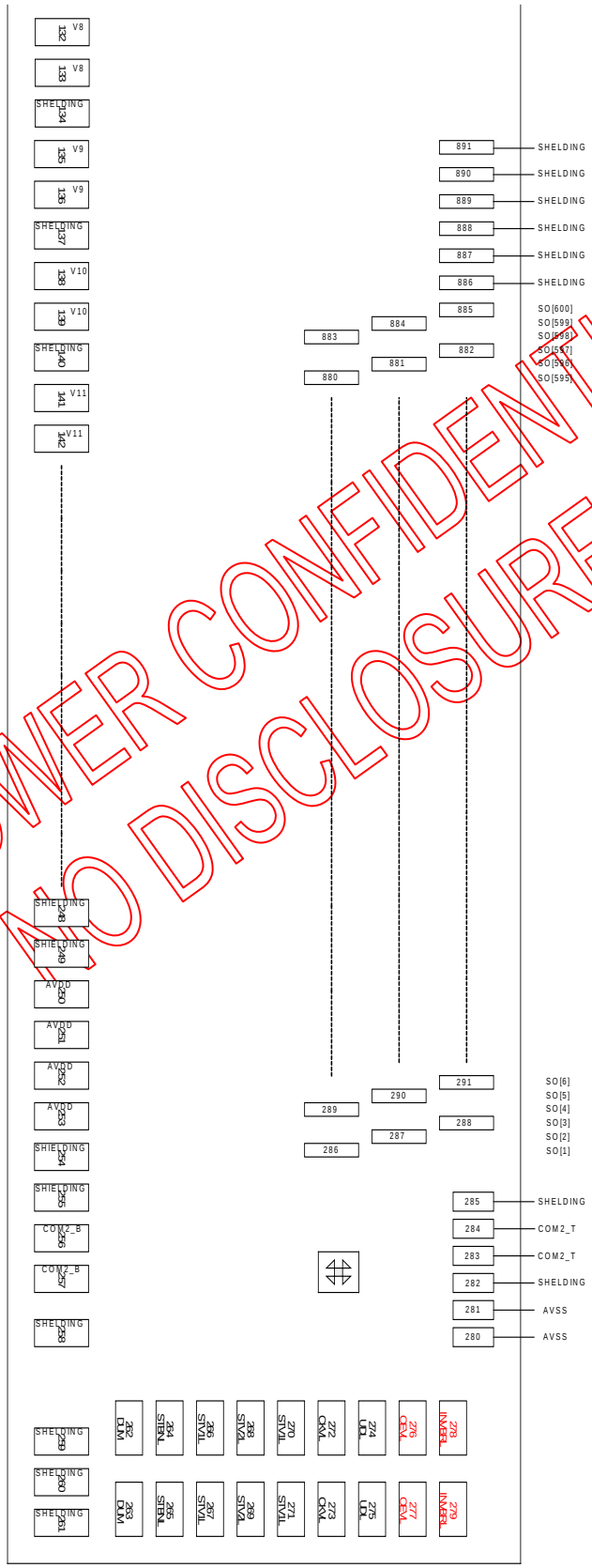


Vertical Timing Diagram HV

7. PAD DIAGRAM

Chip Size: 22572um x 1040um (Include Scribe Line)





Note: The following parameters may be different for each customer.

Please contact fitipower for detail information.

Wafer Thickness: 400μm ± 20μm

Bump height: 9μm

Co-planarity: within wafer $\leqq$ 4μm, within die $\leqq$ 2μm

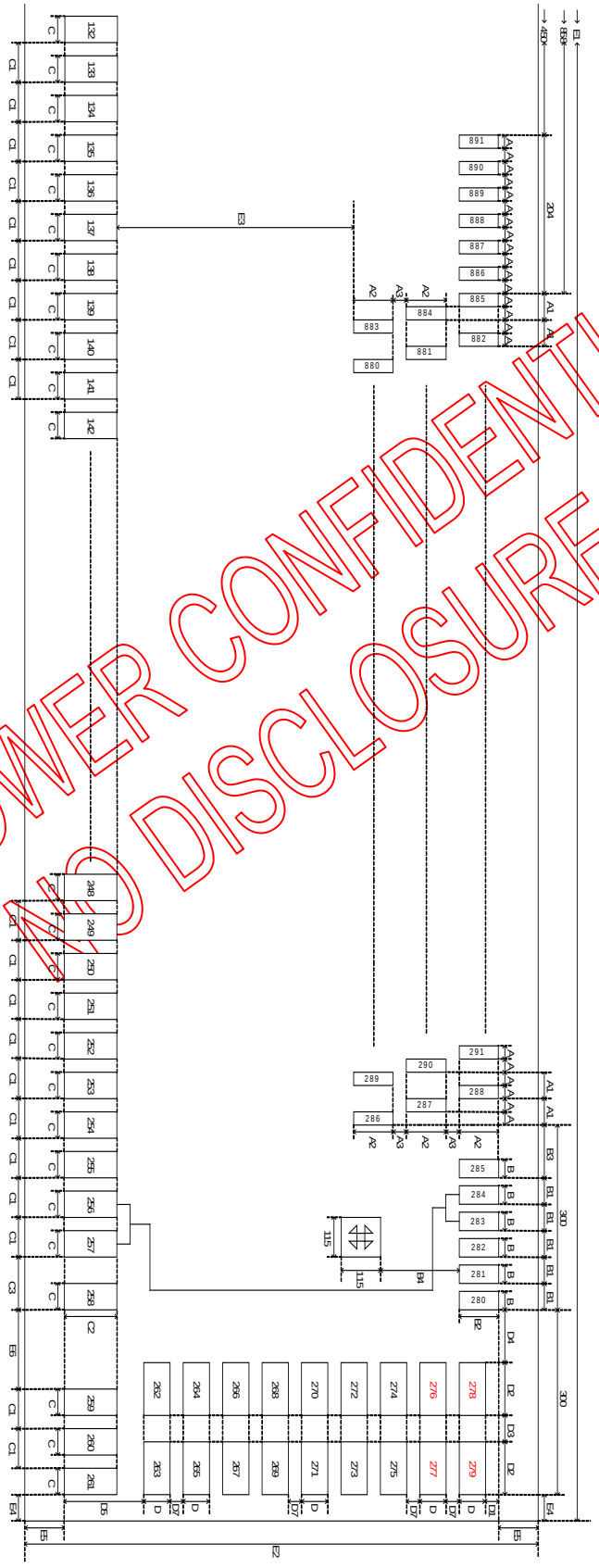
Hardness of Bump: 60 ± 15 Hv

Shear of Bump: $>$ 5.16g/mil^2

IMPORTANT NOTICE

Contents in the document are subject to change without notice.

7.1. CHIP OUTLINE DIMENSIONS

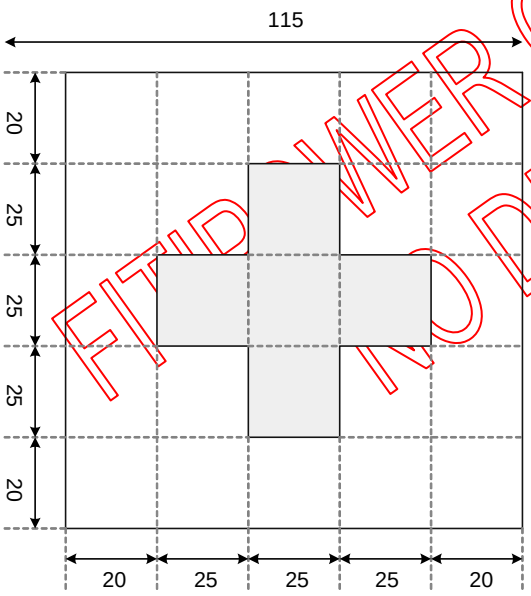


Symbol	Dimensions in um
A	17
A1	34
A2	110
A3	30
B	30
B1	50
B2	70
B3	50
B4	191.5
C	65
C1	85
C2	110
C3	115
D	30

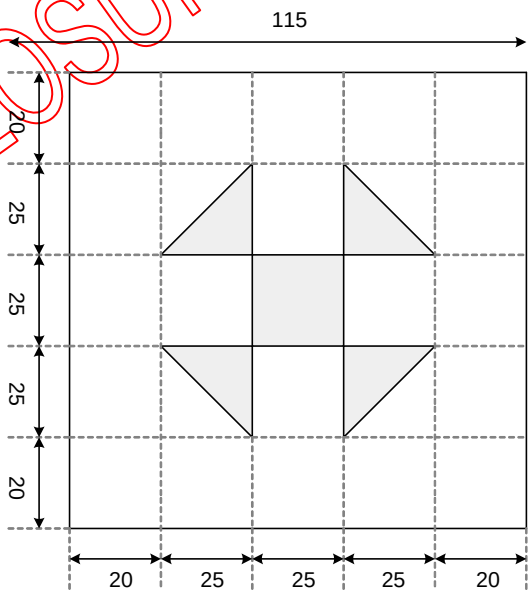
Symbol	Dimensions in um
D1	40
D2	100
D3	30
D4	70
D5	216
D6	168.5
D7	50
E1	22578
E2	1045
E3	426
E4	60
E5	60
E6	136.5

7.2. ALIGNMENT MARK DIMENSION (unit: um)

Left Side



Right Side



7.3. PAD COORDINATES

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1	SHIELDING	-11196.5	-408	65 × 110
2	SHIELDING	-11111.5	-408	65 × 110
3	SHIELDING	-11026.5	-408	65 × 110
4	SHIELDING	-10825	-408	65 × 110
5	COM1_B	-10710	-408	65 × 110
6	COM1_B	-10625	-408	65 × 110
7	SHIELDING	-10540	-408	65 × 110
8	SHIELDING	-10455	-408	65 × 110
9	AVSS	-10370	-408	65 × 110
10	AVSS	-10285	-408	65 × 110
11	AVSS	-10200	-408	65 × 110
12	AVSS	-10115	-408	65 × 110
13	SHIELDING	-10030	-408	65 × 110
14	SHIELDING	-9945	-408	65 × 110
15	SHIELDING	-9860	-408	65 × 110
16	SHIELDING	-9775	-408	65 × 110
17	SHIELDING	-9690	-408	65 × 110
18	SHIELDING	-9605	-408	65 × 110
19	TP0	-9520	-408	65 × 110
20	TP0	-9435	-408	65 × 110
21	TP1	-9350	-408	65 × 110
22	TP1	-9265	-408	65 × 110
23	TP2	-9180	-408	65 × 110
24	TP2	-9095	-408	65 × 110
25	TP3	-9010	-408	65 × 110
26	TP3	-8925	-408	65 × 110
27	TP4	-8840	-408	65 × 110
28	TP4	-8755	-408	65 × 110
29	TP5	-8670	-408	65 × 110
30	TP5	-8585	-408	65 × 110
31	SHIELDING	-8500	-408	65 × 110
32	TB0	-8415	-408	65 × 110
33	TB0	-8330	-408	65 × 110
34	SHIELDING	-8245	-408	65 × 110
35	TB1	-8160	-408	65 × 110
36	TB1	-8075	-408	65 × 110
37	SHIELDING	-7990	-408	65 × 110
38	SHIELDING	-7905	-408	65 × 110
39	SHIELDING	-7820	-408	65 × 110
40	SHIELDING	-7735	-408	65 × 110
41	TB2	-7650	-408	65 × 110
42	TB2	-7565	-408	65 × 110
43	SHIELDING	-7480	-408	65 × 110
44	TB3	-7395	-408	65 × 110
45	TB3	-7310	-408	65 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
46	SHIELDING	-7225	-408	65 × 110
47	TB4	-7140	-408	65 × 110
48	TB4	-7055	-408	65 × 110
49	SHIELDING	-6970	-408	65 × 110
50	SHIELDING	-6885	-408	65 × 110
51	GOSEQ	-6800	-408	65 × 110
52	GOSEQ	-6715	-408	65 × 110
53	SHIELDING	-6630	-408	65 × 110
54	BIST	-6545	-408	65 × 110
55	BIST	-6460	-408	65 × 110
56	SHIELDING	-6375	-408	65 × 110
57	RES0	-6290	-408	65 × 110
58	RES0	-6205	-408	65 × 110
59	SHIELDING	-6120	-408	65 × 110
60	CFSEL	-6035	-408	65 × 110
61	CFSEL	-5950	-408	65 × 110
62	SHIELDING	-5865	-408	65 × 110
63	CLKPOL	-5780	-408	65 × 110
64	CLKPOL	-5695	-408	65 × 110
65	SHIELDING	-5610	-408	65 × 110
66	DITHB	-5525	-408	65 × 110
67	DITHB	-5440	-408	65 × 110
68	SHIELDING	-5355	-408	65 × 110
69	MODE	-5270	-408	65 × 110
70	MODE	-5185	-408	65 × 110
71	SHIELDING	-5100	-408	65 × 110
72	SHLR	-5015	-408	65 × 110
73	SHLR	-4930	-408	65 × 110
74	SHIELDING	-4845	-408	65 × 110
75	UPDN	-4760	-408	65 × 110
76	UPDN	-4675	-408	65 × 110
77	SHIELDING	-4590	-408	65 × 110
78	STBYB	-4505	-408	65 × 110
79	STBYB	-4420	-408	65 × 110
80	SHIELDING	-4335	-408	65 × 110
81	RSTB	-4250	-408	65 × 110
82	RSTB	-4165	-408	65 × 110
83	SHIELDING	-4080	-408	65 × 110
84	BLKEN	-3995	-408	65 × 110
85	BLKEN	-3910	-408	65 × 110
86	SHIELDING	-3825	-408	65 × 110
87	VSET	-3740	-408	65 × 110
88	VSET	-3655	-408	65 × 110
89	TP6	-3570	-408	65 × 110
90	TP7	-3485	-408	65 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
91	TP8	-3400	-408	65 × 110
92	TP9	-3315	-408	65 × 110
93	TP10	-3230	-408	65 × 110
94	TP11	-3145	-408	65 × 110
95	TP12	-3060	-408	65 × 110
96	TP13	-2975	-408	65 × 110
97	TP14	-2890	-408	65 × 110
98	TP15	-2805	-408	65 × 110
99	TP16	-2720	-408	65 × 110
100	TP17	-2635	-408	65 × 110
101	SHIELDING	-2550	-408	65 × 110
102	AVDD	-2465	-408	65 × 110
103	AVDD	-2380	-408	65 × 110
104	AVDD	-2295	-408	65 × 110
105	AVDD	-2210	-408	65 × 110
106	AVDD	-2125	-408	65 × 110
107	AVDD	-2040	-408	65 × 110
108	AVDD	-1955	-408	65 × 110
109	AVDD	-1870	-408	65 × 110
110	SHIELDING	-1785	-408	65 × 110
111	V1	-1700	-408	65 × 110
112	V1	-1615	-408	65 × 110
113	SHIELDING	-1530	-408	65 × 110
114	V2	-1445	-408	65 × 110
115	V2	-1360	-408	65 × 110
116	SHIELDING	-1275	-408	65 × 110
117	V3	-1190	-408	65 × 110
118	V3	-1105	-408	65 × 110
119	SHIELDING	-1020	-408	65 × 110
120	V4	-935	-408	65 × 110
121	V4	-850	-408	65 × 110
122	SHIELDING	-765	-408	65 × 110
123	V5	-680	-408	65 × 110
124	V5	-595	-408	65 × 110
125	SHIELDING	-510	-408	65 × 110
126	V6	-425	-408	65 × 110
127	V6	-340	-408	65 × 110
128	SHIELDING	-255	-408	65 × 110
129	V7	-170	-408	65 × 110
130	V7	-85	-408	65 × 110
131	SHIELDING	0	-408	65 × 110
132	V8	85	-408	65 × 110
133	V8	170	-408	65 × 110
134	SHIELDING	255	-408	65 × 110
135	V9	340	-408	65 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
136	V9	425	-408	65 × 110
137	SHIELDING	510	-408	65 × 110
138	V10	595	-408	65 × 110
139	V10	680	-408	65 × 110
140	SHIELDING	765	-408	65 × 110
141	V11	850	-408	65 × 110
142	V11	935	-408	65 × 110
143	SHIELDING	1020	-408	65 × 110
144	V12	1105	-408	65 × 110
145	V12	1190	-408	65 × 110
146	SHIELDING	1275	-408	65 × 110
147	V13	1360	-408	65 × 110
148	V13	1445	-408	65 × 110
149	SHIELDING	1530	-408	65 × 110
150	V14	1615	-408	65 × 110
151	V14	1700	-408	65 × 110
152	SHIELDING	1785	-408	65 × 110
153	AVSS	1870	-408	65 × 110
154	AVSS	1955	-408	65 × 110
155	AVSS	2040	-408	65 × 110
156	AVSS	2125	-408	65 × 110
157	AVSS	2210	-408	65 × 110
158	AVSS	2295	-408	65 × 110
159	AVSS	2380	-408	65 × 110
160	AVSS	2465	-408	65 × 110
161	SHIELDING	2550	-408	65 × 110
162	SHIELDING	2635	-408	65 × 110
163	VSS	2720	-408	65 × 110
164	VSS	2805	-408	65 × 110
165	VSS	2890	-408	65 × 110
166	VSS	2975	-408	65 × 110
167	SHIELDING	3060	-408	65 × 110
168	SHIELDING	3145	-408	65 × 110
169	VDD	3230	-408	65 × 110
170	VDD	3315	-408	65 × 110
171	VDD	3400	-408	65 × 110
172	VDD	3485	-408	65 × 110
173	DASHD	3570	-408	65 × 110
174	VSD	3655	-408	65 × 110
175	VSD	3740	-408	65 × 110
176	DASHD	3825	-408	65 × 110
177	HSD	3910	-408	65 × 110
178	HSD	3995	-408	65 × 110
179	DASHD	4080	-408	65 × 110
180	DEN	4165	-408	65 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
181	DEN	4250	-408	65 × 110
182	DASHD	4335	-408	65 × 110
183	CLKIN	4420	-408	65 × 110
184	CLKIN	4505	-408	65 × 110
185	DASHD	4590	-408	65 × 110
186	D27	4675	-408	65 × 110
187	D27	4760	-408	65 × 110
188	D26	4845	-408	65 × 110
189	D26	4930	-408	65 × 110
190	DASHD	5015	-408	65 × 110
191	D25	5100	-408	65 × 110
192	D25	5185	-408	65 × 110
193	D24	5270	-408	65 × 110
194	D24	5355	-408	65 × 110
195	DASHD	5440	-408	65 × 110
196	D23	5525	-408	65 × 110
197	D23	5610	-408	65 × 110
198	D22	5695	-408	65 × 110
199	D22	5780	-408	65 × 110
200	DASHD	5865	-408	65 × 110
201	D21	5950	-408	65 × 110
202	D21	6035	-408	65 × 110
203	D20	6120	-408	65 × 110
204	D20	6205	-408	65 × 110
205	DASHD	6290	-408	65 × 110
206	D17	6375	-408	65 × 110
207	D17	6460	-408	65 × 110
208	D16	6545	-408	65 × 110
209	D16	6630	-408	65 × 110
210	DASHD	6715	-408	65 × 110
211	D15	6800	-408	65 × 110
212	D15	6885	-408	65 × 110
213	D14	6970	-408	65 × 110
214	D14	7055	-408	65 × 110
215	DASHD	7140	-408	65 × 110
216	D13	7225	-408	65 × 110
217	D13	7310	-408	65 × 110
218	D12	7395	-408	65 × 110
219	D12	7480	-408	65 × 110
220	DASHD	7565	-408	65 × 110
221	D11	7650	-408	65 × 110
222	D11	7735	-408	65 × 110
223	D10	7820	-408	65 × 110
224	D10	7905	-408	65 × 110
225	DASHD	7990	-408	65 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
226	D07	8075	-408	65 × 110
227	D07	8160	-408	65 × 110
228	D06	8245	-408	65 × 110
229	D06	8330	-408	65 × 110
230	DASHD	8415	-408	65 × 110
231	D05	8500	-408	65 × 110
232	D05	8585	-408	65 × 110
233	D04	8670	-408	65 × 110
234	D04	8755	-408	65 × 110
235	DASHD	8840	-408	65 × 110
236	D03	8925	-408	65 × 110
237	D03	9010	-408	65 × 110
238	D02	9095	-408	65 × 110
239	D02	9180	-408	65 × 110
240	DASHD	9265	-408	65 × 110
241	D01	9350	-408	65 × 110
242	D01	9435	-408	65 × 110
243	D00	9520	-408	65 × 110
244	D00	9605	-408	65 × 110
245	DASHD	9690	-408	65 × 110
246	SHIELDING	9775	-408	65 × 110
247	SHIELDING	9860	-408	65 × 110
248	SHIELDING	9945	-408	65 × 110
249	SHIELDING	10030	-408	65 × 110
250	AVDD	10115	-408	65 × 110
251	AVDD	10200	-408	65 × 110
252	AVDD	10285	-408	65 × 110
253	AVDD	10370	-408	65 × 110
254	SHIELDING	10455	-408	65 × 110
255	SHIELDING	10540	-408	65 × 110
256	COM2_B	10625	-408	65 × 110
257	COM2_B	10710	-408	65 × 110
258	SHIELDING	10825	-408	65 × 110
259	SHIELDING	11026.5	-408	65 × 110
260	SHIELDING	11111.5	-408	65 × 110
261	SHIELDING	11196.5	-408	65 × 110
262	DUM	11049	-232	100 × 30
263	DUM	11179	-232	100 × 30
264	STBNL	11049	-152	100 × 30
265	STBNL	11179	-152	100 × 30
266	STV1L	11049	-72	100 × 30
267	STV1L	11179	-72	100 × 30
268	STV2L	11049	8	100 × 30
269	STV2L	11179	8	100 × 30
270	STV1L	11049	88	100 × 30

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
271	STV1L	11179	88	100 × 30
272	CKVL	11049	168	100 × 30
273	CKVL	11179	168	100 × 30
274	UDL	11049	248	100 × 30
275	UDL	11179	248	100 × 30
276	OEVL	11049	328	100 × 30
277	OEVL	11179	328	100 × 30
278	INVBRL	11049	408	100 × 30
279	INVBRL	11179	408	100 × 30
280	AVSS	10914	428	30 × 70
281	AVSS	10864	428	30 × 70
282	SHIELDING	10814	428	30 × 70
283	COM2_T	10764	428	30 × 70
284	COM2_T	10714	428	30 × 70
285	SHIELDING	10664	428	30 × 70
286	SO[1]	10620.5	128	17 × 110
287	SO[2]	10603.5	268	17 × 110
288	SO[3]	10586.5	408	17 × 110
289	SO[4]	10569.5	128	17 × 110
290	SO[5]	10552.5	268	17 × 110
291	SO[6]	10535.5	408	17 × 110
292	SO[7]	10518.5	128	17 × 110
293	SO[8]	10501.5	268	17 × 110
294	SO[9]	10484.5	408	17 × 110
295	SO[10]	10467.5	128	17 × 110
296	SO[11]	10450.5	268	17 × 110
297	SO[12]	10433.5	408	17 × 110
298	SO[13]	10416.5	128	17 × 110
299	SO[14]	10399.5	268	17 × 110
300	SO[15]	10382.5	408	17 × 110
301	SO[16]	10365.5	128	17 × 110
302	SO[17]	10348.5	268	17 × 110
303	SO[18]	10331.5	408	17 × 110
304	SO[19]	10314.5	128	17 × 110
305	SO[20]	10297.5	268	17 × 110
306	SO[21]	10280.5	408	17 × 110
307	SO[22]	10263.5	128	17 × 110
308	SO[23]	10246.5	268	17 × 110
309	SO[24]	10229.5	408	17 × 110
310	SO[25]	10212.5	128	17 × 110
311	SO[26]	10195.5	268	17 × 110
312	SO[27]	10178.5	408	17 × 110
313	SO[28]	10161.5	128	17 × 110
314	SO[29]	10144.5	268	17 × 110
315	SO[30]	10127.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
316	SO[31]	10110.5	128	17 × 110
317	SO[32]	10093.5	268	17 × 110
318	SO[33]	10076.5	408	17 × 110
319	SO[34]	10059.5	128	17 × 110
320	SO[35]	10042.5	268	17 × 110
321	SO[36]	10025.5	408	17 × 110
322	SO[37]	10008.5	128	17 × 110
323	SO[38]	9991.5	268	17 × 110
324	SO[39]	9974.5	408	17 × 110
325	SO[40]	9957.5	128	17 × 110
326	SO[41]	9940.5	268	17 × 110
327	SO[42]	9923.5	408	17 × 110
328	SO[43]	9906.5	128	17 × 110
329	SO[44]	9889.5	268	17 × 110
330	SO[45]	9872.5	408	17 × 110
331	SO[46]	9855.5	128	17 × 110
332	SO[47]	9838.5	268	17 × 110
333	SO[48]	9821.5	408	17 × 110
334	SO[49]	9804.5	128	17 × 110
335	SO[50]	9787.5	268	17 × 110
336	SO[51]	9770.5	408	17 × 110
337	SO[52]	9753.5	128	17 × 110
338	SO[53]	9736.5	268	17 × 110
339	SO[54]	9719.5	408	17 × 110
340	SO[55]	9702.5	128	17 × 110
341	SO[56]	9685.5	268	17 × 110
342	SO[57]	9668.5	408	17 × 110
343	SO[58]	9651.5	128	17 × 110
344	SO[59]	9634.5	268	17 × 110
345	SO[60]	9617.5	408	17 × 110
346	SO[61]	9600.5	128	17 × 110
347	SO[62]	9583.5	268	17 × 110
348	SO[63]	9566.5	408	17 × 110
349	SO[64]	9549.5	128	17 × 110
350	SO[65]	9532.5	268	17 × 110
351	SO[66]	9515.5	408	17 × 110
352	SO[67]	9498.5	128	17 × 110
353	SO[68]	9481.5	268	17 × 110
354	SO[69]	9464.5	408	17 × 110
355	SO[70]	9447.5	128	17 × 110
356	SO[71]	9430.5	268	17 × 110
357	SO[72]	9413.5	408	17 × 110
358	SO[73]	9396.5	128	17 × 110
359	SO[74]	9379.5	268	17 × 110
360	SO[75]	9362.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
361	SO[76]	9345.5	128	17 × 110
362	SO[77]	9328.5	268	17 × 110
363	SO[78]	9311.5	408	17 × 110
364	SO[79]	9294.5	128	17 × 110
365	SO[80]	9277.5	268	17 × 110
366	SO[81]	9260.5	408	17 × 110
367	SO[82]	9243.5	128	17 × 110
368	SO[83]	9226.5	268	17 × 110
369	SO[84]	9209.5	408	17 × 110
370	SO[85]	9192.5	128	17 × 110
371	SO[86]	9175.5	268	17 × 110
372	SO[87]	9158.5	408	17 × 110
373	SO[88]	9141.5	128	17 × 110
374	SO[89]	9124.5	268	17 × 110
375	SO[90]	9107.5	408	17 × 110
376	SO[91]	9090.5	128	17 × 110
377	SO[92]	9073.5	268	17 × 110
378	SO[93]	9056.5	408	17 × 110
379	SO[94]	9039.5	128	17 × 110
380	SO[95]	9022.5	268	17 × 110
381	SO[96]	9005.5	408	17 × 110
382	SO[97]	8988.5	128	17 × 110
383	SO[98]	8971.5	268	17 × 110
384	SO[99]	8954.5	408	17 × 110
385	SO[100]	8937.5	128	17 × 110
386	SO[101]	8920.5	268	17 × 110
387	SO[102]	8903.5	408	17 × 110
388	SO[103]	8886.5	128	17 × 110
389	SO[104]	8869.5	268	17 × 110
390	SO[105]	8852.5	408	17 × 110
391	SO[106]	8835.5	128	17 × 110
392	SO[107]	8818.5	268	17 × 110
393	SO[108]	8801.5	408	17 × 110
394	SO[109]	8784.5	128	17 × 110
395	SO[110]	8767.5	268	17 × 110
396	SO[111]	8750.5	408	17 × 110
397	SO[112]	8733.5	128	17 × 110
398	SO[113]	8716.5	268	17 × 110
399	SO[114]	8699.5	408	17 × 110
400	SO[115]	8682.5	128	17 × 110
401	SO[116]	8665.5	268	17 × 110
402	SO[117]	8648.5	408	17 × 110
403	SO[118]	8631.5	128	17 × 110
404	SO[119]	8614.5	268	17 × 110
405	SO[120]	8597.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
406	SO[121]	8580.5	128	17 × 110
407	SO[122]	8563.5	268	17 × 110
408	SO[123]	8546.5	408	17 × 110
409	SO[124]	8529.5	128	17 × 110
410	SO[125]	8512.5	268	17 × 110
411	SO[126]	8495.5	408	17 × 110
412	SO[127]	8478.5	128	17 × 110
413	SO[128]	8461.5	268	17 × 110
414	SO[129]	8444.5	408	17 × 110
415	SO[130]	8427.5	128	17 × 110
416	SO[131]	8410.5	268	17 × 110
417	SO[132]	8393.5	408	17 × 110
418	SO[133]	8376.5	128	17 × 110
419	SO[134]	8359.5	268	17 × 110
420	SO[135]	8342.5	408	17 × 110
421	SO[136]	8325.5	128	17 × 110
422	SO[137]	8308.5	268	17 × 110
423	SO[138]	8291.5	408	17 × 110
424	SO[139]	8274.5	128	17 × 110
425	SO[140]	8257.5	268	17 × 110
426	SO[141]	8240.5	408	17 × 110
427	SO[142]	8223.5	128	17 × 110
428	SO[143]	8206.5	268	17 × 110
429	SO[144]	8189.5	408	17 × 110
430	SO[145]	8172.5	128	17 × 110
431	SO[146]	8155.5	268	17 × 110
432	SO[147]	8138.5	408	17 × 110
433	SO[148]	8121.5	128	17 × 110
434	SO[149]	8104.5	268	17 × 110
435	SO[150]	8087.5	408	17 × 110
436	SO[151]	8070.5	128	17 × 110
437	SO[152]	8053.5	268	17 × 110
438	SO[153]	8036.5	408	17 × 110
439	SO[154]	8019.5	128	17 × 110
440	SO[155]	8002.5	268	17 × 110
441	SO[156]	7985.5	408	17 × 110
442	SO[157]	7968.5	128	17 × 110
443	SO[158]	7951.5	268	17 × 110
444	SO[159]	7934.5	408	17 × 110
445	SO[160]	7917.5	128	17 × 110
446	SO[161]	7900.5	268	17 × 110
447	SO[162]	7883.5	408	17 × 110
448	SO[163]	7866.5	128	17 × 110
449	SO[164]	7849.5	268	17 × 110
450	SO[165]	7832.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
451	SO[166]	7815.5	128	17 × 110
452	SO[167]	7798.5	268	17 × 110
453	SO[168]	7781.5	408	17 × 110
454	SO[169]	7764.5	128	17 × 110
455	SO[170]	7747.5	268	17 × 110
456	SO[171]	7730.5	408	17 × 110
457	SO[172]	7713.5	128	17 × 110
458	SO[173]	7696.5	268	17 × 110
459	SO[174]	7679.5	408	17 × 110
460	SO[175]	7662.5	128	17 × 110
461	SO[176]	7645.5	268	17 × 110
462	SO[177]	7628.5	408	17 × 110
463	SO[178]	7611.5	128	17 × 110
464	SO[179]	7594.5	268	17 × 110
465	SO[180]	7577.5	408	17 × 110
466	SO[181]	7560.5	128	17 × 110
467	SO[182]	7543.5	268	17 × 110
468	SO[183]	7526.5	408	17 × 110
469	SO[184]	7509.5	128	17 × 110
470	SO[185]	7492.5	268	17 × 110
471	SO[186]	7475.5	408	17 × 110
472	SO[187]	7458.5	128	17 × 110
473	SO[188]	7441.5	268	17 × 110
474	SO[189]	7424.5	408	17 × 110
475	SO[190]	7407.5	128	17 × 110
476	SO[191]	7390.5	268	17 × 110
477	SO[192]	7373.5	408	17 × 110
478	SO[193]	7356.5	128	17 × 110
479	SO[194]	7339.5	268	17 × 110
480	SO[195]	7322.5	408	17 × 110
481	SO[196]	7305.5	128	17 × 110
482	SO[197]	7288.5	268	17 × 110
483	SO[198]	7271.5	408	17 × 110
484	SO[199]	7254.5	128	17 × 110
485	SO[200]	7237.5	268	17 × 110
486	SO[201]	7220.5	408	17 × 110
487	SO[202]	7203.5	128	17 × 110
488	SO[203]	7186.5	268	17 × 110
489	SO[204]	7169.5	408	17 × 110
490	SO[205]	7152.5	128	17 × 110
491	SO[206]	7135.5	268	17 × 110
492	SO[207]	7118.5	408	17 × 110
493	SO[208]	7101.5	128	17 × 110
494	SO[209]	7084.5	268	17 × 110
495	SO[210]	7067.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
496	SO[211]	7050.5	128	17 × 110
497	SO[212]	7033.5	268	17 × 110
498	SO[213]	7016.5	408	17 × 110
499	SO[214]	6999.5	128	17 × 110
500	SO[215]	6982.5	268	17 × 110
501	SO[216]	6965.5	408	17 × 110
502	SO[217]	6948.5	128	17 × 110
503	SO[218]	6931.5	268	17 × 110
504	SO[219]	6914.5	408	17 × 110
505	SO[220]	6897.5	128	17 × 110
506	SO[221]	6880.5	268	17 × 110
507	SO[222]	6863.5	408	17 × 110
508	SO[223]	6846.5	128	17 × 110
509	SO[224]	6829.5	268	17 × 110
510	SO[225]	6812.5	408	17 × 110
511	SO[226]	6795.5	128	17 × 110
512	SO[227]	6778.5	268	17 × 110
513	SO[228]	6761.5	408	17 × 110
514	SO[229]	6744.5	128	17 × 110
515	SO[230]	6727.5	268	17 × 110
516	SO[231]	6710.5	408	17 × 110
517	SO[232]	6693.5	128	17 × 110
518	SO[233]	6676.5	268	17 × 110
519	SO[234]	6659.5	408	17 × 110
520	SO[235]	6642.5	128	17 × 110
521	SO[236]	6625.5	268	17 × 110
522	SO[237]	6608.5	408	17 × 110
523	SO[238]	6591.5	128	17 × 110
524	SO[239]	6574.5	268	17 × 110
525	SO[240]	6557.5	408	17 × 110
526	SO[241]	6540.5	128	17 × 110
527	SO[242]	6523.5	268	17 × 110
528	SO[243]	6506.5	408	17 × 110
529	SO[244]	6489.5	128	17 × 110
530	SO[245]	6472.5	268	17 × 110
531	SO[246]	6455.5	408	17 × 110
532	SO[247]	6438.5	128	17 × 110
533	SO[248]	6421.5	268	17 × 110
534	SO[249]	6404.5	408	17 × 110
535	SO[250]	6387.5	128	17 × 110
536	SO[251]	6370.5	268	17 × 110
537	SO[252]	6353.5	408	17 × 110
538	SO[253]	6336.5	128	17 × 110
539	SO[254]	6319.5	268	17 × 110
540	SO[255]	6302.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
541	SO[256]	6285.5	128	17 × 110
542	SO[257]	6268.5	268	17 × 110
543	SO[258]	6251.5	408	17 × 110
544	SO[259]	6234.5	128	17 × 110
545	SO[260]	6217.5	268	17 × 110
546	SO[261]	6200.5	408	17 × 110
547	SO[262]	6183.5	128	17 × 110
548	SO[263]	6166.5	268	17 × 110
549	SO[264]	6149.5	408	17 × 110
550	SO[265]	6132.5	128	17 × 110
551	SO[266]	6115.5	268	17 × 110
552	SO[267]	6098.5	408	17 × 110
553	SO[268]	6081.5	128	17 × 110
554	SO[269]	6064.5	268	17 × 110
555	SO[270]	6047.5	408	17 × 110
556	SO[271]	6030.5	128	17 × 110
557	SO[272]	6013.5	268	17 × 110
558	SO[273]	5996.5	408	17 × 110
559	SO[274]	5979.5	128	17 × 110
560	SO[275]	5962.5	268	17 × 110
561	SO[276]	5945.5	408	17 × 110
562	SO[277]	5928.5	128	17 × 110
563	SO[278]	5911.5	268	17 × 110
564	SO[279]	5894.5	408	17 × 110
565	SO[280]	5877.5	128	17 × 110
566	SO[281]	5860.5	268	17 × 110
567	SO[282]	5843.5	408	17 × 110
568	SO[283]	5826.5	128	17 × 110
569	SO[284]	5809.5	268	17 × 110
570	SO[285]	5792.5	408	17 × 110
571	SO[286]	5775.5	128	17 × 110
572	SO[287]	5758.5	268	17 × 110
573	SO[288]	5741.5	408	17 × 110
574	SO[289]	5724.5	128	17 × 110
575	SO[290]	5707.5	268	17 × 110
576	SO[291]	5690.5	408	17 × 110
577	SO[292]	5673.5	128	17 × 110
578	SO[293]	5656.5	268	17 × 110
579	SO[294]	5639.5	408	17 × 110
580	SO[295]	5622.5	128	17 × 110
581	SO[296]	5605.5	268	17 × 110
582	SO[297]	5588.5	408	17 × 110
583	SO[298]	5571.5	128	17 × 110
584	SO[299]	5554.5	268	17 × 110
585	SO[300]	5537.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
586	SO[301]	5520.5	128	17 × 110
587	SO[302]	5503.5	268	17 × 110
588	SO[303]	5486.5	408	17 × 110
589	SO[304]	5469.5	128	17 × 110
590	SO[305]	5452.5	268	17 × 110
591	SO[306]	5435.5	408	17 × 110
592	SO[307]	5418.5	128	17 × 110
593	SO[308]	5401.5	268	17 × 110
594	SO[309]	5384.5	408	17 × 110
595	SO[310]	5367.5	128	17 × 110
596	SO[311]	5350.5	268	17 × 110
597	SO[312]	5333.5	408	17 × 110
598	SO[313]	5316.5	128	17 × 110
599	SO[314]	5299.5	268	17 × 110
600	SO[315]	5282.5	408	17 × 110
601	SO[316]	5265.5	128	17 × 110
602	SO[317]	5248.5	268	17 × 110
603	SO[318]	5231.5	408	17 × 110
604	SO[319]	5214.5	128	17 × 110
605	SO[320]	5197.5	268	17 × 110
606	SO[321]	5180.5	408	17 × 110
607	SO[322]	5163.5	128	17 × 110
608	SO[323]	5146.5	268	17 × 110
609	SO[324]	5129.5	408	17 × 110
610	SO[325]	5112.5	128	17 × 110
611	SO[326]	5095.5	268	17 × 110
612	SO[327]	5078.5	408	17 × 110
613	SO[328]	5061.5	128	17 × 110
614	SO[329]	5044.5	268	17 × 110
615	SO[330]	5027.5	408	17 × 110
616	SO[331]	5010.5	128	17 × 110
617	SO[332]	4993.5	268	17 × 110
618	SO[333]	4976.5	408	17 × 110
619	SO[334]	4959.5	128	17 × 110
620	SO[335]	4942.5	268	17 × 110
621	SO[336]	4925.5	408	17 × 110
622	SO[337]	4908.5	128	17 × 110
623	SO[338]	4891.5	268	17 × 110
624	SO[339]	4874.5	408	17 × 110
625	SO[340]	4857.5	128	17 × 110
626	SO[341]	4840.5	268	17 × 110
627	SO[342]	4823.5	408	17 × 110
628	SO[343]	4806.5	128	17 × 110
629	SO[344]	4789.5	268	17 × 110
630	SO[345]	4772.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
631	SO[346]	4755.5	128	17 × 110
632	SO[347]	4738.5	268	17 × 110
633	SO[348]	4721.5	408	17 × 110
634	SO[349]	4704.5	128	17 × 110
635	SO[350]	4687.5	268	17 × 110
636	SO[351]	4670.5	408	17 × 110
637	SO[352]	4653.5	128	17 × 110
638	SO[353]	4636.5	268	17 × 110
639	SO[354]	4619.5	408	17 × 110
640	SO[355]	4602.5	128	17 × 110
641	SO[356]	4585.5	268	17 × 110
642	SO[357]	4568.5	408	17 × 110
643	SO[358]	4551.5	128	17 × 110
644	SO[359]	4534.5	268	17 × 110
645	SO[360]	4517.5	408	17 × 110
646	SO[361]	4500.5	128	17 × 110
647	SO[362]	4483.5	268	17 × 110
648	SO[363]	4466.5	408	17 × 110
649	SO[364]	4449.5	128	17 × 110
650	SO[365]	4432.5	268	17 × 110
651	SO[366]	4415.5	408	17 × 110
652	SO[367]	4398.5	128	17 × 110
653	SO[368]	4381.5	268	17 × 110
654	SO[369]	4364.5	408	17 × 110
655	SO[370]	4347.5	128	17 × 110
656	SO[371]	4330.5	268	17 × 110
657	SO[372]	4313.5	408	17 × 110
658	SO[373]	4296.5	128	17 × 110
659	SO[374]	4279.5	268	17 × 110
660	SO[375]	4262.5	408	17 × 110
661	SO[376]	4245.5	128	17 × 110
662	SO[377]	4228.5	268	17 × 110
663	SO[378]	4211.5	408	17 × 110
664	SO[379]	4194.5	128	17 × 110
665	SO[380]	4177.5	268	17 × 110
666	SO[381]	4160.5	408	17 × 110
667	SO[382]	4143.5	128	17 × 110
668	SO[383]	4126.5	268	17 × 110
669	SO[384]	4109.5	408	17 × 110
670	SO[385]	4092.5	128	17 × 110
671	SO[386]	4075.5	268	17 × 110
672	SO[387]	4058.5	408	17 × 110
673	SO[388]	4041.5	128	17 × 110
674	SO[389]	4024.5	268	17 × 110
675	SO[390]	4007.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
676	SO[391]	3990.5	128	17 × 110
677	SO[392]	3973.5	268	17 × 110
678	SO[393]	3956.5	408	17 × 110
679	SO[394]	3939.5	128	17 × 110
680	SO[395]	3922.5	268	17 × 110
681	SO[396]	3905.5	408	17 × 110
682	SO[397]	3888.5	128	17 × 110
683	SO[398]	3871.5	268	17 × 110
684	SO[399]	3854.5	408	17 × 110
685	SO[400]	3837.5	128	17 × 110
686	SO[401]	3820.5	268	17 × 110
687	SO[402]	3803.5	408	17 × 110
688	SO[403]	3786.5	128	17 × 110
689	SO[404]	3769.5	268	17 × 110
690	SO[405]	3752.5	408	17 × 110
691	SO[406]	3735.5	128	17 × 110
692	SO[407]	3718.5	268	17 × 110
693	SO[408]	3701.5	408	17 × 110
694	SO[409]	3684.5	128	17 × 110
695	SO[410]	3667.5	268	17 × 110
696	SO[411]	3650.5	408	17 × 110
697	SO[412]	3633.5	128	17 × 110
698	SO[413]	3616.5	268	17 × 110
699	SO[414]	3599.5	408	17 × 110
700	SO[415]	3582.5	128	17 × 110
701	SO[416]	3565.5	268	17 × 110
702	SO[417]	3548.5	408	17 × 110
703	SO[418]	3531.5	128	17 × 110
704	SO[419]	3514.5	268	17 × 110
705	SO[420]	3497.5	408	17 × 110
706	SO[421]	3480.5	128	17 × 110
707	SO[422]	3463.5	268	17 × 110
708	SO[423]	3446.5	408	17 × 110
709	SO[424]	3429.5	128	17 × 110
710	SO[425]	3412.5	268	17 × 110
711	SO[426]	3395.5	408	17 × 110
712	SO[427]	3378.5	128	17 × 110
713	SO[428]	3361.5	268	17 × 110
714	SO[429]	3344.5	408	17 × 110
715	SO[430]	3327.5	128	17 × 110
716	SO[431]	3310.5	268	17 × 110
717	SO[432]	3293.5	408	17 × 110
718	SO[433]	3276.5	128	17 × 110
719	SO[434]	3259.5	268	17 × 110
720	SO[435]	3242.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
721	SO[436]	3225.5	128	17 × 110
722	SO[437]	3208.5	268	17 × 110
723	SO[438]	3191.5	408	17 × 110
724	SO[439]	3174.5	128	17 × 110
725	SO[440]	3157.5	268	17 × 110
726	SO[441]	3140.5	408	17 × 110
727	SO[442]	3123.5	128	17 × 110
728	SO[443]	3106.5	268	17 × 110
729	SO[444]	3089.5	408	17 × 110
730	SO[445]	3072.5	128	17 × 110
731	SO[446]	3055.5	268	17 × 110
732	SO[447]	3038.5	408	17 × 110
733	SO[448]	3021.5	128	17 × 110
734	SO[449]	3004.5	268	17 × 110
735	SO[450]	2987.5	408	17 × 110
736	SO[451]	2970.5	128	17 × 110
737	SO[452]	2953.5	268	17 × 110
738	SO[453]	2936.5	408	17 × 110
739	SO[454]	2919.5	128	17 × 110
740	SO[455]	2902.5	268	17 × 110
741	SO[456]	2885.5	408	17 × 110
742	SO[457]	2868.5	128	17 × 110
743	SO[458]	2851.5	268	17 × 110
744	SO[459]	2834.5	408	17 × 110
745	SO[460]	2817.5	128	17 × 110
746	SO[461]	2800.5	268	17 × 110
747	SO[462]	2783.5	408	17 × 110
748	SO[463]	2766.5	128	17 × 110
749	SO[464]	2749.5	268	17 × 110
750	SO[465]	2732.5	408	17 × 110
751	SO[466]	2715.5	128	17 × 110
752	SO[467]	2698.5	268	17 × 110
753	SO[468]	2681.5	408	17 × 110
754	SO[469]	2664.5	128	17 × 110
755	SO[470]	2647.5	268	17 × 110
756	SO[471]	2630.5	408	17 × 110
757	SO[472]	2613.5	128	17 × 110
758	SO[473]	2596.5	268	17 × 110
759	SO[474]	2579.5	408	17 × 110
760	SO[475]	2562.5	128	17 × 110
761	SO[476]	2545.5	268	17 × 110
762	SO[477]	2528.5	408	17 × 110
763	SO[478]	2511.5	128	17 × 110
764	SO[479]	2494.5	268	17 × 110
765	SO[480]	2477.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
766	SO[481]	2460.5	128	17 × 110
767	SO[482]	2443.5	268	17 × 110
768	SO[483]	2426.5	408	17 × 110
769	SO[484]	2409.5	128	17 × 110
770	SO[485]	2392.5	268	17 × 110
771	SO[486]	2375.5	408	17 × 110
772	SO[487]	2358.5	128	17 × 110
773	SO[488]	2341.5	268	17 × 110
774	SO[489]	2324.5	408	17 × 110
775	SO[490]	2307.5	128	17 × 110
776	SO[491]	2290.5	268	17 × 110
777	SO[492]	2273.5	408	17 × 110
778	SO[493]	2256.5	128	17 × 110
779	SO[494]	2239.5	268	17 × 110
780	SO[495]	2222.5	408	17 × 110
781	SO[496]	2205.5	128	17 × 110
782	SO[497]	2188.5	268	17 × 110
783	SO[498]	2171.5	408	17 × 110
784	SO[499]	2154.5	128	17 × 110
785	SO[500]	2137.5	268	17 × 110
786	SO[501]	2120.5	408	17 × 110
787	SO[502]	2103.5	128	17 × 110
788	SO[503]	2086.5	268	17 × 110
789	SO[504]	2069.5	408	17 × 110
790	SO[505]	2052.5	128	17 × 110
791	SO[506]	2035.5	268	17 × 110
792	SO[507]	2018.5	408	17 × 110
793	SO[508]	2001.5	128	17 × 110
794	SO[509]	1984.5	268	17 × 110
795	SO[510]	1967.5	408	17 × 110
796	SO[511]	1950.5	128	17 × 110
797	SO[512]	1933.5	268	17 × 110
798	SO[513]	1916.5	408	17 × 110
799	SO[514]	1899.5	128	17 × 110
800	SO[515]	1882.5	268	17 × 110
801	SO[516]	1865.5	408	17 × 110
802	SO[517]	1848.5	128	17 × 110
803	SO[518]	1831.5	268	17 × 110
804	SO[519]	1814.5	408	17 × 110
805	SO[520]	1797.5	128	17 × 110
806	SO[521]	1780.5	268	17 × 110
807	SO[522]	1763.5	408	17 × 110
808	SO[523]	1746.5	128	17 × 110
809	SO[524]	1729.5	268	17 × 110
810	SO[525]	1712.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
811	SO[526]	1695.5	128	17 × 110
812	SO[527]	1678.5	268	17 × 110
813	SO[528]	1661.5	408	17 × 110
814	SO[529]	1644.5	128	17 × 110
815	SO[530]	1627.5	268	17 × 110
816	SO[531]	1610.5	408	17 × 110
817	SO[532]	1593.5	128	17 × 110
818	SO[533]	1576.5	268	17 × 110
819	SO[534]	1559.5	408	17 × 110
820	SO[535]	1542.5	128	17 × 110
821	SO[536]	1525.5	268	17 × 110
822	SO[537]	1508.5	408	17 × 110
823	SO[538]	1491.5	128	17 × 110
824	SO[539]	1474.5	268	17 × 110
825	SO[540]	1457.5	408	17 × 110
826	SO[541]	1440.5	128	17 × 110
827	SO[542]	1423.5	268	17 × 110
828	SO[543]	1406.5	408	17 × 110
829	SO[544]	1389.5	128	17 × 110
830	SO[545]	1372.5	268	17 × 110
831	SO[546]	1355.5	408	17 × 110
832	SO[547]	1338.5	128	17 × 110
833	SO[548]	1321.5	268	17 × 110
834	SO[549]	1304.5	408	17 × 110
835	SO[550]	1287.5	128	17 × 110
836	SO[551]	1270.5	268	17 × 110
837	SO[552]	1253.5	408	17 × 110
838	SO[553]	1236.5	128	17 × 110
839	SO[554]	1219.5	268	17 × 110
840	SO[555]	1202.5	408	17 × 110
841	SO[556]	1185.5	128	17 × 110
842	SO[557]	1168.5	268	17 × 110
843	SO[558]	1151.5	408	17 × 110
844	SO[559]	1134.5	128	17 × 110
845	SO[560]	1117.5	268	17 × 110
846	SO[561]	1100.5	408	17 × 110
847	SO[562]	1083.5	128	17 × 110
848	SO[563]	1066.5	268	17 × 110
849	SO[564]	1049.5	408	17 × 110
850	SO[565]	1032.5	128	17 × 110
851	SO[566]	1015.5	268	17 × 110
852	SO[567]	998.5	408	17 × 110
853	SO[568]	981.5	128	17 × 110
854	SO[569]	964.5	268	17 × 110
855	SO[570]	947.5	408	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
856	SO[571]	930.5	128	17 × 110
857	SO[572]	913.5	268	17 × 110
858	SO[573]	896.5	408	17 × 110
859	SO[574]	879.5	128	17 × 110
860	SO[575]	862.5	268	17 × 110
861	SO[576]	845.5	408	17 × 110
862	SO[577]	828.5	128	17 × 110
863	SO[578]	811.5	268	17 × 110
864	SO[579]	794.5	408	17 × 110
865	SO[580]	777.5	128	17 × 110
866	SO[581]	760.5	268	17 × 110
867	SO[582]	743.5	408	17 × 110
868	SO[583]	726.5	128	17 × 110
869	SO[584]	709.5	268	17 × 110
870	SO[585]	692.5	408	17 × 110
871	SO[586]	675.5	128	17 × 110
872	SO[587]	658.5	268	17 × 110
873	SO[588]	641.5	408	17 × 110
874	SO[589]	624.5	128	17 × 110
875	SO[590]	607.5	268	17 × 110
876	SO[591]	590.5	408	17 × 110
877	SO[592]	573.5	128	17 × 110
878	SO[593]	556.5	268	17 × 110
879	SO[594]	539.5	408	17 × 110
880	SO[595]	522.5	128	17 × 110
881	SO[596]	505.5	268	17 × 110
882	SO[597]	488.5	408	17 × 110
883	SO[598]	471.5	128	17 × 110
884	SO[599]	454.5	268	17 × 110
885	SO[600]	437.5	408	17 × 110
886	SHIELDING	403.5	408	17 × 110
887	SHIELDING	369.5	408	17 × 110
888	SHIELDING	335.5	408	17 × 110
889	SHIELDING	301.5	408	17 × 110
890	SHIELDING	267.5	408	17 × 110
891	SHIELDING	233.5	408	17 × 110
892	SHIELDING	-233.5	408	17 × 110
893	SHIELDING	-267.5	408	17 × 110
894	SHIELDING	-301.5	408	17 × 110
895	SHIELDING	-335.5	408	17 × 110
896	SHIELDING	-369.5	408	17 × 110
897	SHIELDING	-403.5	408	17 × 110
898	SO[601]	-437.5	408	17 × 110
899	SO[602]	-454.5	268	17 × 110
900	SO[603]	-471.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
901	SO[604]	-488.5	408	17 × 110
902	SO[605]	-505.5	268	17 × 110
903	SO[606]	-522.5	128	17 × 110
904	SO[607]	-539.5	408	17 × 110
905	SO[608]	-556.5	268	17 × 110
906	SO[609]	-573.5	128	17 × 110
907	SO[610]	-590.5	408	17 × 110
908	SO[611]	-607.5	268	17 × 110
909	SO[612]	-624.5	128	17 × 110
910	SO[613]	-641.5	408	17 × 110
911	SO[614]	-658.5	268	17 × 110
912	SO[615]	-675.5	128	17 × 110
913	SO[616]	-692.5	408	17 × 110
914	SO[617]	-709.5	268	17 × 110
915	SO[618]	-726.5	128	17 × 110
916	SO[619]	-743.5	408	17 × 110
917	SO[620]	-760.5	268	17 × 110
918	SO[621]	-777.5	128	17 × 110
919	SO[622]	-794.5	408	17 × 110
920	SO[623]	-811.5	268	17 × 110
921	SO[624]	-828.5	128	17 × 110
922	SO[625]	-845.5	408	17 × 110
923	SO[626]	-862.5	268	17 × 110
924	SO[627]	-879.5	128	17 × 110
925	SO[628]	-896.5	408	17 × 110
926	SO[629]	-913.5	268	17 × 110
927	SO[630]	-930.5	128	17 × 110
928	SO[631]	-947.5	408	17 × 110
929	SO[632]	-964.5	268	17 × 110
930	SO[633]	-981.5	128	17 × 110
931	SO[634]	-998.5	408	17 × 110
932	SO[635]	-1015.5	268	17 × 110
933	SO[636]	-1032.5	128	17 × 110
934	SO[637]	-1049.5	408	17 × 110
935	SO[638]	-1066.5	268	17 × 110
936	SO[639]	-1083.5	128	17 × 110
937	SO[640]	-1100.5	408	17 × 110
938	SO[641]	-1117.5	268	17 × 110
939	SO[642]	-1134.5	128	17 × 110
940	SO[643]	-1151.5	408	17 × 110
941	SO[644]	-1168.5	268	17 × 110
942	SO[645]	-1185.5	128	17 × 110
943	SO[646]	-1202.5	408	17 × 110
944	SO[647]	-1219.5	268	17 × 110
945	SO[648]	-1236.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
946	SO[649]	-1253.5	408	17 × 110
947	SO[650]	-1270.5	268	17 × 110
948	SO[651]	-1287.5	128	17 × 110
949	SO[652]	-1304.5	408	17 × 110
950	SO[653]	-1321.5	268	17 × 110
951	SO[654]	-1338.5	128	17 × 110
952	SO[655]	-1355.5	408	17 × 110
953	SO[656]	-1372.5	268	17 × 110
954	SO[657]	-1389.5	128	17 × 110
955	SO[658]	-1406.5	408	17 × 110
956	SO[659]	-1423.5	268	17 × 110
957	SO[660]	-1440.5	128	17 × 110
958	SO[661]	-1457.5	408	17 × 110
959	SO[662]	-1474.5	268	17 × 110
960	SO[663]	-1491.5	128	17 × 110
961	SO[664]	-1508.5	408	17 × 110
962	SO[665]	-1525.5	268	17 × 110
963	SO[666]	-1542.5	128	17 × 110
964	SO[667]	-1559.5	408	17 × 110
965	SO[668]	-1576.5	268	17 × 110
966	SO[669]	-1593.5	128	17 × 110
967	SO[670]	-1610.5	408	17 × 110
968	SO[671]	-1627.5	268	17 × 110
969	SO[672]	-1644.5	128	17 × 110
970	SO[673]	-1661.5	408	17 × 110
971	SO[674]	-1678.5	268	17 × 110
972	SO[675]	-1695.5	128	17 × 110
973	SO[676]	-1712.5	408	17 × 110
974	SO[677]	-1729.5	268	17 × 110
975	SO[678]	-1746.5	128	17 × 110
976	SO[679]	-1763.5	408	17 × 110
977	SO[680]	-1780.5	268	17 × 110
978	SO[681]	-1797.5	128	17 × 110
979	SO[682]	-1814.5	408	17 × 110
980	SO[683]	-1831.5	268	17 × 110
981	SO[684]	-1848.5	128	17 × 110
982	SO[685]	-1865.5	408	17 × 110
983	SO[686]	-1882.5	268	17 × 110
984	SO[687]	-1899.5	128	17 × 110
985	SO[688]	-1916.5	408	17 × 110
986	SO[689]	-1933.5	268	17 × 110
987	SO[690]	-1950.5	128	17 × 110
988	SO[691]	-1967.5	408	17 × 110
989	SO[692]	-1984.5	268	17 × 110
990	SO[693]	-2001.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
991	SO[694]	-2018.5	408	17 × 110
992	SO[695]	-2035.5	268	17 × 110
993	SO[696]	-2052.5	128	17 × 110
994	SO[697]	-2069.5	408	17 × 110
995	SO[698]	-2086.5	268	17 × 110
996	SO[699]	-2103.5	128	17 × 110
997	SO[700]	-2120.5	408	17 × 110
998	SO[701]	-2137.5	268	17 × 110
999	SO[702]	-2154.5	128	17 × 110
1000	SO[703]	-2171.5	408	17 × 110
1001	SO[704]	-2188.5	268	17 × 110
1002	SO[705]	-2205.5	128	17 × 110
1003	SO[706]	-2222.5	408	17 × 110
1004	SO[707]	-2239.5	268	17 × 110
1005	SO[708]	-2256.5	128	17 × 110
1006	SO[709]	-2273.5	408	17 × 110
1007	SO[710]	-2290.5	268	17 × 110
1008	SO[711]	-2307.5	128	17 × 110
1009	SO[712]	-2324.5	408	17 × 110
1010	SO[713]	-2341.5	268	17 × 110
1011	SO[714]	-2358.5	128	17 × 110
1012	SO[715]	-2375.5	408	17 × 110
1013	SO[716]	-2392.5	268	17 × 110
1014	SO[717]	-2409.5	128	17 × 110
1015	SO[718]	-2426.5	408	17 × 110
1016	SO[719]	-2443.5	268	17 × 110
1017	SO[720]	-2460.5	128	17 × 110
1018	SO[721]	-2477.5	408	17 × 110
1019	SO[722]	-2494.5	268	17 × 110
1020	SO[723]	-2511.5	128	17 × 110
1021	SO[724]	-2528.5	408	17 × 110
1022	SO[725]	-2545.5	268	17 × 110
1023	SO[726]	-2562.5	128	17 × 110
1024	SO[727]	-2579.5	408	17 × 110
1025	SO[728]	-2596.5	268	17 × 110
1026	SO[729]	-2613.5	128	17 × 110
1027	SO[730]	-2630.5	408	17 × 110
1028	SO[731]	-2647.5	268	17 × 110
1029	SO[732]	-2664.5	128	17 × 110
1030	SO[733]	-2681.5	408	17 × 110
1031	SO[734]	-2698.5	268	17 × 110
1032	SO[735]	-2715.5	128	17 × 110
1033	SO[736]	-2732.5	408	17 × 110
1034	SO[737]	-2749.5	268	17 × 110
1035	SO[738]	-2766.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1036	SO[739]	-2783.5	408	17 × 110
1037	SO[740]	-2800.5	268	17 × 110
1038	SO[741]	-2817.5	128	17 × 110
1039	SO[742]	-2834.5	408	17 × 110
1040	SO[743]	-2851.5	268	17 × 110
1041	SO[744]	-2868.5	128	17 × 110
1042	SO[745]	-2885.5	408	17 × 110
1043	SO[746]	-2902.5	268	17 × 110
1044	SO[747]	-2919.5	128	17 × 110
1045	SO[748]	-2936.5	408	17 × 110
1046	SO[749]	-2953.5	268	17 × 110
1047	SO[750]	-2970.5	128	17 × 110
1048	SO[751]	-2987.5	408	17 × 110
1049	SO[752]	-3004.5	268	17 × 110
1050	SO[753]	-3021.5	128	17 × 110
1051	SO[754]	-3038.5	408	17 × 110
1052	SO[755]	-3055.5	268	17 × 110
1053	SO[756]	-3072.5	128	17 × 110
1054	SO[757]	-3089.5	408	17 × 110
1055	SO[758]	-3106.5	268	17 × 110
1056	SO[759]	-3123.5	128	17 × 110
1057	SO[760]	-3140.5	408	17 × 110
1058	SO[761]	-3157.5	268	17 × 110
1059	SO[762]	-3174.5	128	17 × 110
1060	SO[763]	-3191.5	408	17 × 110
1061	SO[764]	-3208.5	268	17 × 110
1062	SO[765]	-3225.5	128	17 × 110
1063	SO[766]	-3242.5	408	17 × 110
1064	SO[767]	-3259.5	268	17 × 110
1065	SO[768]	-3276.5	128	17 × 110
1066	SO[769]	-3293.5	408	17 × 110
1067	SO[770]	-3310.5	268	17 × 110
1068	SO[771]	-3327.5	128	17 × 110
1069	SO[772]	-3344.5	408	17 × 110
1070	SO[773]	-3361.5	268	17 × 110
1071	SO[774]	-3378.5	128	17 × 110
1072	SO[775]	-3395.5	408	17 × 110
1073	SO[776]	-3412.5	268	17 × 110
1074	SO[777]	-3429.5	128	17 × 110
1075	SO[778]	-3446.5	408	17 × 110
1076	SO[779]	-3463.5	268	17 × 110
1077	SO[780]	-3480.5	128	17 × 110
1078	SO[781]	-3497.5	408	17 × 110
1079	SO[782]	-3514.5	268	17 × 110
1080	SO[783]	-3531.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1081	SO[784]	-3548.5	408	17 × 110
1082	SO[785]	-3565.5	268	17 × 110
1083	SO[786]	-3582.5	128	17 × 110
1084	SO[787]	-3599.5	408	17 × 110
1085	SO[788]	-3616.5	268	17 × 110
1086	SO[789]	-3633.5	128	17 × 110
1087	SO[790]	-3650.5	408	17 × 110
1088	SO[791]	-3667.5	268	17 × 110
1089	SO[792]	-3684.5	128	17 × 110
1090	SO[793]	-3701.5	408	17 × 110
1091	SO[794]	-3718.5	268	17 × 110
1092	SO[795]	-3735.5	128	17 × 110
1093	SO[796]	-3752.5	408	17 × 110
1094	SO[797]	-3769.5	268	17 × 110
1095	SO[798]	-3786.5	128	17 × 110
1096	SO[799]	-3803.5	408	17 × 110
1097	SO[800]	-3820.5	268	17 × 110
1098	SO[801]	-3837.5	128	17 × 110
1099	SO[802]	-3854.5	408	17 × 110
1100	SO[803]	-3871.5	268	17 × 110
1101	SO[804]	-3888.5	128	17 × 110
1102	SO[805]	-3905.5	408	17 × 110
1103	SO[806]	-3922.5	268	17 × 110
1104	SO[807]	-3939.5	128	17 × 110
1105	SO[808]	-3956.5	408	17 × 110
1106	SO[809]	-3973.5	268	17 × 110
1107	SO[810]	-3990.5	128	17 × 110
1108	SO[811]	-4007.5	408	17 × 110
1109	SO[812]	-4024.5	268	17 × 110
1110	SO[813]	-4041.5	128	17 × 110
1111	SO[814]	-4058.5	408	17 × 110
1112	SO[815]	-4075.5	268	17 × 110
1113	SO[816]	-4092.5	128	17 × 110
1114	SO[817]	-4109.5	408	17 × 110
1115	SO[818]	-4126.5	268	17 × 110
1116	SO[819]	-4143.5	128	17 × 110
1117	SO[820]	-4160.5	408	17 × 110
1118	SO[821]	-4177.5	268	17 × 110
1119	SO[822]	-4194.5	128	17 × 110
1120	SO[823]	-4211.5	408	17 × 110
1121	SO[824]	-4228.5	268	17 × 110
1122	SO[825]	-4245.5	128	17 × 110
1123	SO[826]	-4262.5	408	17 × 110
1124	SO[827]	-4279.5	268	17 × 110
1125	SO[828]	-4296.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1126	SO[829]	-4313.5	408	17 × 110
1127	SO[830]	-4330.5	268	17 × 110
1128	SO[831]	-4347.5	128	17 × 110
1129	SO[832]	-4364.5	408	17 × 110
1130	SO[833]	-4381.5	268	17 × 110
1131	SO[834]	-4398.5	128	17 × 110
1132	SO[835]	-4415.5	408	17 × 110
1133	SO[836]	-4432.5	268	17 × 110
1134	SO[837]	-4449.5	128	17 × 110
1135	SO[838]	-4466.5	408	17 × 110
1136	SO[839]	-4483.5	268	17 × 110
1137	SO[840]	-4500.5	128	17 × 110
1138	SO[841]	-4517.5	408	17 × 110
1139	SO[842]	-4534.5	268	17 × 110
1140	SO[843]	-4551.5	128	17 × 110
1141	SO[844]	-4568.5	408	17 × 110
1142	SO[845]	-4585.5	268	17 × 110
1143	SO[846]	-4602.5	128	17 × 110
1144	SO[847]	-4619.5	408	17 × 110
1145	SO[848]	-4636.5	268	17 × 110
1146	SO[849]	-4653.5	128	17 × 110
1147	SO[850]	-4670.5	408	17 × 110
1148	SO[851]	-4687.5	268	17 × 110
1149	SO[852]	-4704.5	128	17 × 110
1150	SO[853]	-4721.5	408	17 × 110
1151	SO[854]	-4738.5	268	17 × 110
1152	SO[855]	-4755.5	128	17 × 110
1153	SO[856]	-4772.5	408	17 × 110
1154	SO[857]	-4789.5	268	17 × 110
1155	SO[858]	-4806.5	128	17 × 110
1156	SO[859]	-4823.5	408	17 × 110
1157	SO[860]	-4840.5	268	17 × 110
1158	SO[861]	-4857.5	128	17 × 110
1159	SO[862]	-4874.5	408	17 × 110
1160	SO[863]	-4891.5	268	17 × 110
1161	SO[864]	-4908.5	128	17 × 110
1162	SO[865]	-4925.5	408	17 × 110
1163	SO[866]	-4942.5	268	17 × 110
1164	SO[867]	-4959.5	128	17 × 110
1165	SO[868]	-4976.5	408	17 × 110
1166	SO[869]	-4993.5	268	17 × 110
1167	SO[870]	-5010.5	128	17 × 110
1168	SO[871]	-5027.5	408	17 × 110
1169	SO[872]	-5044.5	268	17 × 110
1170	SO[873]	-5061.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1171	SO[874]	-5078.5	408	17 × 110
1172	SO[875]	-5095.5	268	17 × 110
1173	SO[876]	-5112.5	128	17 × 110
1174	SO[877]	-5129.5	408	17 × 110
1175	SO[878]	-5146.5	268	17 × 110
1176	SO[879]	-5163.5	128	17 × 110
1177	SO[880]	-5180.5	408	17 × 110
1178	SO[881]	-5197.5	268	17 × 110
1179	SO[882]	-5214.5	128	17 × 110
1180	SO[883]	-5231.5	408	17 × 110
1181	SO[884]	-5248.5	268	17 × 110
1182	SO[885]	-5265.5	128	17 × 110
1183	SO[886]	-5282.5	408	17 × 110
1184	SO[887]	-5299.5	268	17 × 110
1185	SO[888]	-5316.5	128	17 × 110
1186	SO[889]	-5333.5	408	17 × 110
1187	SO[890]	-5350.5	268	17 × 110
1188	SO[891]	-5367.5	128	17 × 110
1189	SO[892]	-5384.5	408	17 × 110
1190	SO[893]	-5401.5	268	17 × 110
1191	SO[894]	-5418.5	128	17 × 110
1192	SO[895]	-5435.5	408	17 × 110
1193	SO[896]	-5452.5	268	17 × 110
1194	SO[897]	-5469.5	128	17 × 110
1195	SO[898]	-5486.5	408	17 × 110
1196	SO[899]	-5503.5	268	17 × 110
1197	SO[900]	-5520.5	128	17 × 110
1198	SO[901]	-5537.5	408	17 × 110
1199	SO[902]	-5554.5	268	17 × 110
1200	SO[903]	-5571.5	128	17 × 110
1201	SO[904]	-5588.5	408	17 × 110
1202	SO[905]	-5605.5	268	17 × 110
1203	SO[906]	-5622.5	128	17 × 110
1204	SO[907]	-5639.5	408	17 × 110
1205	SO[908]	-5656.5	268	17 × 110
1206	SO[909]	-5673.5	128	17 × 110
1207	SO[910]	-5690.5	408	17 × 110
1208	SO[911]	-5707.5	268	17 × 110
1209	SO[912]	-5724.5	128	17 × 110
1210	SO[913]	-5741.5	408	17 × 110
1211	SO[914]	-5758.5	268	17 × 110
1212	SO[915]	-5775.5	128	17 × 110
1213	SO[916]	-5792.5	408	17 × 110
1214	SO[917]	-5809.5	268	17 × 110
1215	SO[918]	-5826.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1216	SO[919]	-5843.5	408	17 × 110
1217	SO[920]	-5860.5	268	17 × 110
1218	SO[921]	-5877.5	128	17 × 110
1219	SO[922]	-5894.5	408	17 × 110
1220	SO[923]	-5911.5	268	17 × 110
1221	SO[924]	-5928.5	128	17 × 110
1222	SO[925]	-5945.5	408	17 × 110
1223	SO[926]	-5962.5	268	17 × 110
1224	SO[927]	-5979.5	128	17 × 110
1225	SO[928]	-5996.5	408	17 × 110
1226	SO[929]	-6013.5	268	17 × 110
1227	SO[930]	-6030.5	128	17 × 110
1228	SO[931]	-6047.5	408	17 × 110
1229	SO[932]	-6064.5	268	17 × 110
1230	SO[933]	-6081.5	128	17 × 110
1231	SO[934]	-6098.5	408	17 × 110
1232	SO[935]	-6115.5	268	17 × 110
1233	SO[936]	-6132.5	128	17 × 110
1234	SO[937]	-6149.5	408	17 × 110
1235	SO[938]	-6166.5	268	17 × 110
1236	SO[939]	-6183.5	128	17 × 110
1237	SO[940]	-6200.5	408	17 × 110
1238	SO[941]	-6217.5	268	17 × 110
1239	SO[942]	-6234.5	128	17 × 110
1240	SO[943]	-6251.5	408	17 × 110
1241	SO[944]	-6268.5	268	17 × 110
1242	SO[945]	-6285.5	128	17 × 110
1243	SO[946]	-6302.5	408	17 × 110
1244	SO[947]	-6319.5	268	17 × 110
1245	SO[948]	-6336.5	128	17 × 110
1246	SO[949]	-6353.5	408	17 × 110
1247	SO[950]	-6370.5	268	17 × 110
1248	SO[951]	-6387.5	128	17 × 110
1249	SO[952]	-6404.5	408	17 × 110
1250	SO[953]	-6421.5	268	17 × 110
1251	SO[954]	-6438.5	128	17 × 110
1252	SO[955]	-6455.5	408	17 × 110
1253	SO[956]	-6472.5	268	17 × 110
1254	SO[957]	-6489.5	128	17 × 110
1255	SO[958]	-6506.5	408	17 × 110
1256	SO[959]	-6523.5	268	17 × 110
1257	SO[960]	-6540.5	128	17 × 110
1258	SO[961]	-6557.5	408	17 × 110
1259	SO[962]	-6574.5	268	17 × 110
1260	SO[963]	-6591.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1261	SO[964]	-6608.5	408	17 × 110
1262	SO[965]	-6625.5	268	17 × 110
1263	SO[966]	-6642.5	128	17 × 110
1264	SO[967]	-6659.5	408	17 × 110
1265	SO[968]	-6676.5	268	17 × 110
1266	SO[969]	-6693.5	128	17 × 110
1267	SO[970]	-6710.5	408	17 × 110
1268	SO[971]	-6727.5	268	17 × 110
1269	SO[972]	-6744.5	128	17 × 110
1270	SO[973]	-6761.5	408	17 × 110
1271	SO[974]	-6778.5	268	17 × 110
1272	SO[975]	-6795.5	128	17 × 110
1273	SO[976]	-6812.5	408	17 × 110
1274	SO[977]	-6829.5	268	17 × 110
1275	SO[978]	-6846.5	128	17 × 110
1276	SO[979]	-6863.5	408	17 × 110
1277	SO[980]	-6880.5	268	17 × 110
1278	SO[981]	-6897.5	128	17 × 110
1279	SO[982]	-6914.5	408	17 × 110
1280	SO[983]	-6931.5	268	17 × 110
1281	SO[984]	-6948.5	128	17 × 110
1282	SO[985]	-6965.5	408	17 × 110
1283	SO[986]	-6982.5	268	17 × 110
1284	SO[987]	-6999.5	128	17 × 110
1285	SO[988]	-7016.5	408	17 × 110
1286	SO[989]	-7033.5	268	17 × 110
1287	SO[990]	-7050.5	128	17 × 110
1288	SO[991]	-7067.5	408	17 × 110
1289	SO[992]	-7084.5	268	17 × 110
1290	SO[993]	-7101.5	128	17 × 110
1291	SO[994]	-7118.5	408	17 × 110
1292	SO[995]	-7135.5	268	17 × 110
1293	SO[996]	-7152.5	128	17 × 110
1294	SO[997]	-7169.5	408	17 × 110
1295	SO[998]	-7186.5	268	17 × 110
1296	SO[999]	-7203.5	128	17 × 110
1297	SO[1000]	-7220.5	408	17 × 110
1298	SO[1001]	-7237.5	268	17 × 110
1299	SO[1002]	-7254.5	128	17 × 110
1300	SO[1003]	-7271.5	408	17 × 110
1301	SO[1004]	-7288.5	268	17 × 110
1302	SO[1005]	-7305.5	128	17 × 110
1303	SO[1006]	-7322.5	408	17 × 110
1304	SO[1007]	-7339.5	268	17 × 110
1305	SO[1008]	-7356.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1306	SO[1009]	-7373.5	408	17 × 110
1307	SO[1010]	-7390.5	268	17 × 110
1308	SO[1011]	-7407.5	128	17 × 110
1309	SO[1012]	-7424.5	408	17 × 110
1310	SO[1013]	-7441.5	268	17 × 110
1311	SO[1014]	-7458.5	128	17 × 110
1312	SO[1015]	-7475.5	408	17 × 110
1313	SO[1016]	-7492.5	268	17 × 110
1314	SO[1017]	-7509.5	128	17 × 110
1315	SO[1018]	-7526.5	408	17 × 110
1316	SO[1019]	-7543.5	268	17 × 110
1317	SO[1020]	-7560.5	128	17 × 110
1318	SO[1021]	-7577.5	408	17 × 110
1319	SO[1022]	-7594.5	268	17 × 110
1320	SO[1023]	-7611.5	128	17 × 110
1321	SO[1024]	-7628.5	408	17 × 110
1322	SO[1025]	-7645.5	268	17 × 110
1323	SO[1026]	-7662.5	128	17 × 110
1324	SO[1027]	-7679.5	408	17 × 110
1325	SO[1028]	-7696.5	268	17 × 110
1326	SO[1029]	-7713.5	128	17 × 110
1327	SO[1030]	-7730.5	408	17 × 110
1328	SO[1031]	-7747.5	268	17 × 110
1329	SO[1032]	-7764.5	128	17 × 110
1330	SO[1033]	-7781.5	408	17 × 110
1331	SO[1034]	-7798.5	268	17 × 110
1332	SO[1035]	-7815.5	128	17 × 110
1333	SO[1036]	-7832.5	408	17 × 110
1334	SO[1037]	-7849.5	268	17 × 110
1335	SO[1038]	-7866.5	128	17 × 110
1336	SO[1039]	-7883.5	408	17 × 110
1337	SO[1040]	-7900.5	268	17 × 110
1338	SO[1041]	-7917.5	128	17 × 110
1339	SO[1042]	-7934.5	408	17 × 110
1340	SO[1043]	-7951.5	268	17 × 110
1341	SO[1044]	-7968.5	128	17 × 110
1342	SO[1045]	-7985.5	408	17 × 110
1343	SO[1046]	-8002.5	268	17 × 110
1344	SO[1047]	-8019.5	128	17 × 110
1345	SO[1048]	-8036.5	408	17 × 110
1346	SO[1049]	-8053.5	268	17 × 110
1347	SO[1050]	-8070.5	128	17 × 110
1348	SO[1051]	-8087.5	408	17 × 110
1349	SO[1052]	-8104.5	268	17 × 110
1350	SO[1053]	-8121.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1351	SO[1054]	-8138.5	408	17 × 110
1352	SO[1055]	-8155.5	268	17 × 110
1353	SO[1056]	-8172.5	128	17 × 110
1354	SO[1057]	-8189.5	408	17 × 110
1355	SO[1058]	-8206.5	268	17 × 110
1356	SO[1059]	-8223.5	128	17 × 110
1357	SO[1060]	-8240.5	408	17 × 110
1358	SO[1061]	-8257.5	268	17 × 110
1359	SO[1062]	-8274.5	128	17 × 110
1360	SO[1063]	-8291.5	408	17 × 110
1361	SO[1064]	-8308.5	268	17 × 110
1362	SO[1065]	-8325.5	128	17 × 110
1363	SO[1066]	-8342.5	408	17 × 110
1364	SO[1067]	-8359.5	268	17 × 110
1365	SO[1068]	-8376.5	128	17 × 110
1366	SO[1069]	-8393.5	408	17 × 110
1367	SO[1070]	-8410.5	268	17 × 110
1368	SO[1071]	-8427.5	128	17 × 110
1369	SO[1072]	-8444.5	408	17 × 110
1370	SO[1073]	-8461.5	268	17 × 110
1371	SO[1074]	-8478.5	128	17 × 110
1372	SO[1075]	-8495.5	408	17 × 110
1373	SO[1076]	-8512.5	268	17 × 110
1374	SO[1077]	-8529.5	128	17 × 110
1375	SO[1078]	-8546.5	408	17 × 110
1376	SO[1079]	-8563.5	268	17 × 110
1377	SO[1080]	-8580.5	128	17 × 110
1378	SO[1081]	-8597.5	408	17 × 110
1379	SO[1082]	-8614.5	268	17 × 110
1380	SO[1083]	-8631.5	128	17 × 110
1381	SO[1084]	-8648.5	408	17 × 110
1382	SO[1085]	-8665.5	268	17 × 110
1383	SO[1086]	-8682.5	128	17 × 110
1384	SO[1087]	-8699.5	408	17 × 110
1385	SO[1088]	-8716.5	268	17 × 110
1386	SO[1089]	-8733.5	128	17 × 110
1387	SO[1090]	-8750.5	408	17 × 110
1388	SO[1091]	-8767.5	268	17 × 110
1389	SO[1092]	-8784.5	128	17 × 110
1390	SO[1093]	-8801.5	408	17 × 110
1391	SO[1094]	-8818.5	268	17 × 110
1392	SO[1095]	-8835.5	128	17 × 110
1393	SO[1096]	-8852.5	408	17 × 110
1394	SO[1097]	-8869.5	268	17 × 110
1395	SO[1098]	-8886.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1396	SO[1099]	-8903.5	408	17 × 110
1397	SO[1100]	-8920.5	268	17 × 110
1398	SO[1101]	-8937.5	128	17 × 110
1399	SO[1102]	-8954.5	408	17 × 110
1400	SO[1103]	-8971.5	268	17 × 110
1401	SO[1104]	-8988.5	128	17 × 110
1402	SO[1105]	-9005.5	408	17 × 110
1403	SO[1106]	-9022.5	268	17 × 110
1404	SO[1107]	-9039.5	128	17 × 110
1405	SO[1108]	-9056.5	408	17 × 110
1406	SO[1109]	-9073.5	268	17 × 110
1407	SO[1110]	-9090.5	128	17 × 110
1408	SO[1111]	-9107.5	408	17 × 110
1409	SO[1112]	-9124.5	268	17 × 110
1410	SO[1113]	-9141.5	128	17 × 110
1411	SO[1114]	-9158.5	408	17 × 110
1412	SO[1115]	-9175.5	268	17 × 110
1413	SO[1116]	-9192.5	128	17 × 110
1414	SO[1117]	-9209.5	408	17 × 110
1415	SO[1118]	-9226.5	268	17 × 110
1416	SO[1119]	-9243.5	128	17 × 110
1417	SO[1120]	-9260.5	408	17 × 110
1418	SO[1121]	-9277.5	268	17 × 110
1419	SO[1122]	-9294.5	128	17 × 110
1420	SO[1123]	-9311.5	408	17 × 110
1421	SO[1124]	-9328.5	268	17 × 110
1422	SO[1125]	-9345.5	128	17 × 110
1423	SO[1126]	-9362.5	408	17 × 110
1424	SO[1127]	-9379.5	268	17 × 110
1425	SO[1128]	-9396.5	128	17 × 110
1426	SO[1129]	-9413.5	408	17 × 110
1427	SO[1130]	-9430.5	268	17 × 110
1428	SO[1131]	-9447.5	128	17 × 110
1429	SO[1132]	-9464.5	408	17 × 110
1430	SO[1133]	-9481.5	268	17 × 110
1431	SO[1134]	-9498.5	128	17 × 110
1432	SO[1135]	-9515.5	408	17 × 110
1433	SO[1136]	-9532.5	268	17 × 110
1434	SO[1137]	-9549.5	128	17 × 110
1435	SO[1138]	-9566.5	408	17 × 110
1436	SO[1139]	-9583.5	268	17 × 110
1437	SO[1140]	-9600.5	128	17 × 110
1438	SO[1141]	-9617.5	408	17 × 110
1439	SO[1142]	-9634.5	268	17 × 110
1440	SO[1143]	-9651.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1441	SO[1144]	-9668.5	408	17 × 110
1442	SO[1145]	-9685.5	268	17 × 110
1443	SO[1146]	-9702.5	128	17 × 110
1444	SO[1147]	-9719.5	408	17 × 110
1445	SO[1148]	-9736.5	268	17 × 110
1446	SO[1149]	-9753.5	128	17 × 110
1447	SO[1150]	-9770.5	408	17 × 110
1448	SO[1151]	-9787.5	268	17 × 110
1449	SO[1152]	-9804.5	128	17 × 110
1450	SO[1153]	-9821.5	408	17 × 110
1451	SO[1154]	-9838.5	268	17 × 110
1452	SO[1155]	-9855.5	128	17 × 110
1453	SO[1156]	-9872.5	408	17 × 110
1454	SO[1157]	-9889.5	268	17 × 110
1455	SO[1158]	-9906.5	128	17 × 110
1456	SO[1159]	-9923.5	408	17 × 110
1457	SO[1160]	-9940.5	268	17 × 110
1458	SO[1161]	-9957.5	128	17 × 110
1459	SO[1162]	-9974.5	408	17 × 110
1460	SO[1163]	-9991.5	268	17 × 110
1461	SO[1164]	-10008.5	128	17 × 110
1462	SO[1165]	-10025.5	408	17 × 110
1463	SO[1166]	-10042.5	268	17 × 110
1464	SO[1167]	-10059.5	128	17 × 110
1465	SO[1168]	-10076.5	408	17 × 110
1466	SO[1169]	-10093.5	268	17 × 110
1467	SO[1170]	-10110.5	128	17 × 110
1468	SO[1171]	-10127.5	408	17 × 110
1469	SO[1172]	-10144.5	268	17 × 110
1470	SO[1173]	-10161.5	128	17 × 110
1471	SO[1174]	-10178.5	408	17 × 110
1472	SO[1175]	-10195.5	268	17 × 110
1473	SO[1176]	-10212.5	128	17 × 110
1474	SO[1177]	-10229.5	408	17 × 110
1475	SO[1178]	-10246.5	268	17 × 110
1476	SO[1179]	-10263.5	128	17 × 110
1477	SO[1180]	-10280.5	408	17 × 110
1478	SO[1181]	-10297.5	268	17 × 110
1479	SO[1182]	-10314.5	128	17 × 110
1480	SO[1183]	-10331.5	408	17 × 110
1481	SO[1184]	-10348.5	268	17 × 110
1482	SO[1185]	-10365.5	128	17 × 110
1483	SO[1186]	-10382.5	408	17 × 110
1484	SO[1187]	-10399.5	268	17 × 110
1485	SO[1188]	-10416.5	128	17 × 110

PAD No.	PAD Name	X	Y	BUMP SIZE (um x um)
1486	SO[1189]	-10433.5	408	17 × 110
1487	SO[1190]	-10450.5	268	17 × 110
1488	SO[1191]	-10467.5	128	17 × 110
1489	SO[1192]	-10484.5	408	17 × 110
1490	SO[1193]	-10501.5	268	17 × 110
1491	SO[1194]	-10518.5	128	17 × 110
1492	SO[1195]	-10535.5	408	17 × 110
1493	SO[1196]	-10552.5	268	17 × 110
1494	SO[1197]	-10569.5	128	17 × 110
1495	SO[1198]	-10586.5	408	17 × 110
1496	SO[1199]	-10603.5	268	17 × 110
1497	SO[1200]	-10620.5	128	17 × 110
1498	SHIELDING	-10664	428	30 × 70
1499	COM1_T	-10714	428	30 × 70
1500	COM1_T	-10764	428	30 × 70
1501	SHIELDING	-10814	428	30 × 70
1502	AVSS	-10864	428	30 × 70
1503	AVSS	-10914	428	30 × 70
1504	INVBRR	-11049	408	100 × 30
1505	INVBRR	-11179	408	100 × 30
1506	OEVR	-11049	328	100 × 30
1507	OEVR	-11179	328	100 × 30
1508	UDR	-11179	248	100 × 30
1509	UDR	-11049	248	100 × 30
1510	CKVR	-11179	168	100 × 30
1511	CKVR	-11049	168	100 × 30
1512	STV1R	-11179	88	100 × 30
1513	STV1R	-11049	88	100 × 30
1514	STV2R	-11179	8	100 × 30
1515	STV2R	-11049	8	100 × 30
1516	STV1R	-11179	-72	100 × 30
1517	STV1R	-11049	-72	100 × 30
1518	STBNR	-11179	-152	100 × 30
1519	STBNR	-11049	-152	100 × 30
1520	DUMR	-11179	-232	100 × 30
1521	DUMR	-11049	-232	100 × 30

8. DEFINITIONS

8.1. 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.

8.2. 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.

9. REVISION HISTORY

Revision	Content	Date
1.0	New Issue.	2012/08/22
1.1	Modify power on off sequence	2016/09/08
1.2	Modify IC chip size: 22572um x 1040um (Include Scribe Line)	2022/01/03
1.3	Modify power on/off sequence	2022/01/05
1.4	Correct bump height to 9um	2022/03/10