1. Introduction

This document contains detailed drawing and pad coordinate information for AM18X5BW wafers for wire bonding and AM18X5CW gold bumped wafers. This document covers AM1805BW (I^2C version), AM1815BW (SPI version), AM1805CW (I^2C version), and AM1815CW (SPI version) wafers. The default thickness for all wafers is 150 µm with a diameter of 200 mm. Bad die are marked by electronic wafer mapping. Additional wafer and die details are found in the sections that follow.

2. AM18X5BW Wafers for Wire Bonding

The wafer drawing and bond pad numbers from a small section (showing 4 die) of AM1805BW and AM1815BW wafers is shown in Figure 1 below. The bottom left corner of the die (0,0) is also indicated in the drawing.

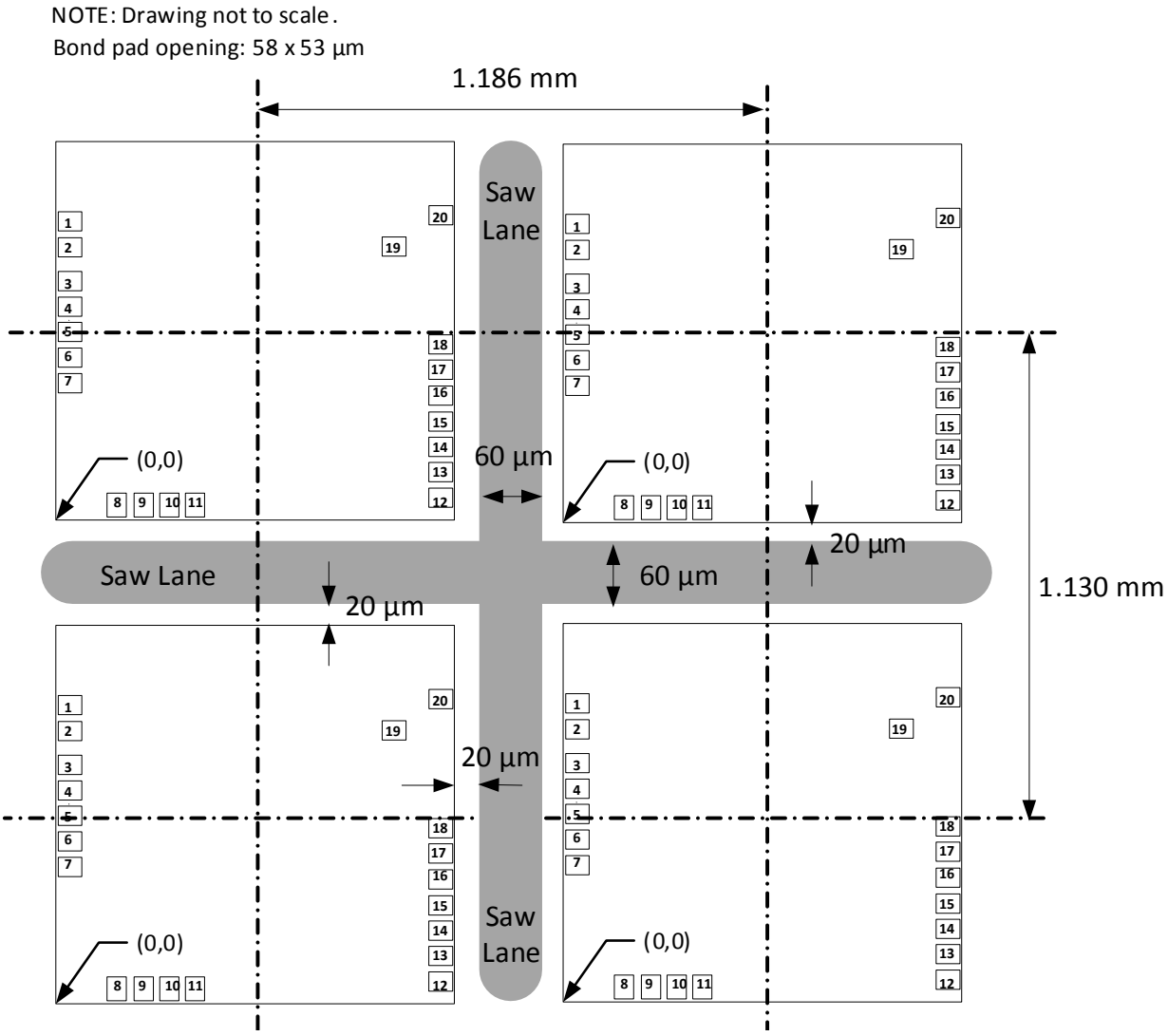

Figure 1. AM18X5BW Bonding Diagram

The coordinate of each AM18X5BW bond pad number is shown in Table 1 below. The pad coordinates represent the center of the pad relative to the bottom left corner of the die (0,0). The dimension of each bond pad opening is 58 µm x 53 µm.

Table 1: AM18X5BW Pad Coordinates

Pad Number	X Coordinate (µm)	Y Coordinate (µm)
1	70	812
2	70	741
3	70	650
4	70	580
5	70	510
6	70	440
7	70	370
8	165	70
9	239	70
10	309	70
11	379	70
12	1015	57
13	1015	127
14	1015	197
15	1015	267
16	1015	337
17	1015	407
18	1015	477
19	895	745
20	1015	828

3. AM18X5CW Gold Bumped Wafers

A small section of the AM1805CW and AM1815CW wafers, with 4 die, is shown in Figure 2 below. The bottom left corner of the die (0,0) is indicated in the drawing as well as the gold bump pad location numbers. The larger, unnumbered pads on the die in Figure 2 are no connect (NC) pads. Please refer to Table 3 for any additional NC pads.

NOTE: Drawing not to scale.
AU bump size: 50 x 50 x 18 µm

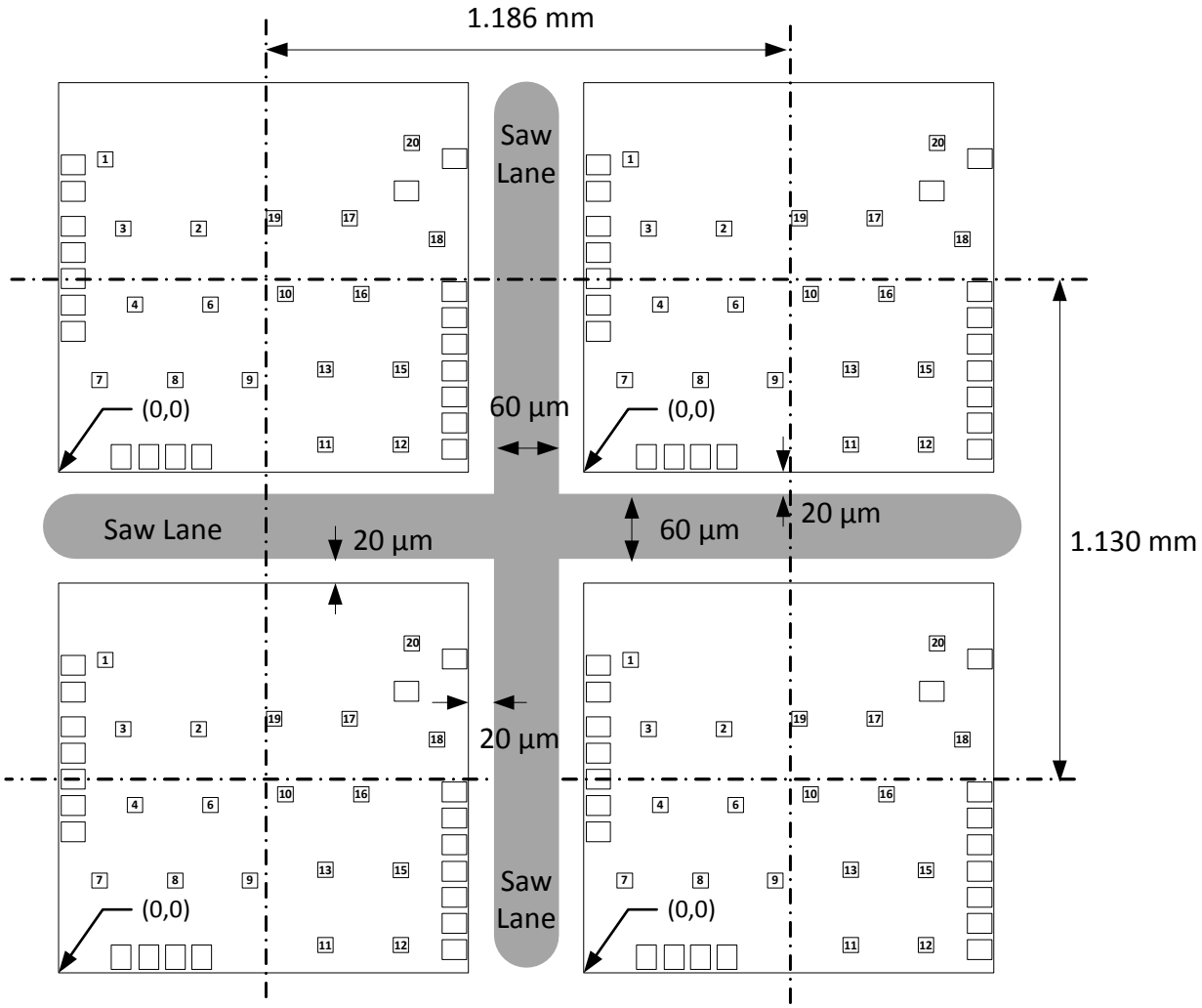

Figure 2. AM18X5CW Bonding Diagram

The coordinate of each AM18X5CW die pad number is shown in Table 2 below. The pad coordinates represent the center of the pad relative to the bottom left corner of the die (0,0). The dimension of each bond pad opening is 50 µm x 50 µm x 18 µm. Note that there are no 5 and 14 pad numbers.

Table 2: AM18X5CW Pad Coordinates

Pad Number	X Coordinate (µm)	Y Coordinate (µm)
1	123	826
2	370	642
3	170	642
4	202	442
6	402	442
7	107	242
8	307	242
9	507	242
10	602	470
11	707	70
12	907	70
13	707	270
15	907	270
16	802	470
17	770	670
18	1002	615
19	570	670
20	936	870

4. AM18X5BW and AM18X5CW Wafer Frame

Wafers are sawn and mounted onto tape into a KNS Frame, part number 350-104. The wafer frame drawing is shown below.

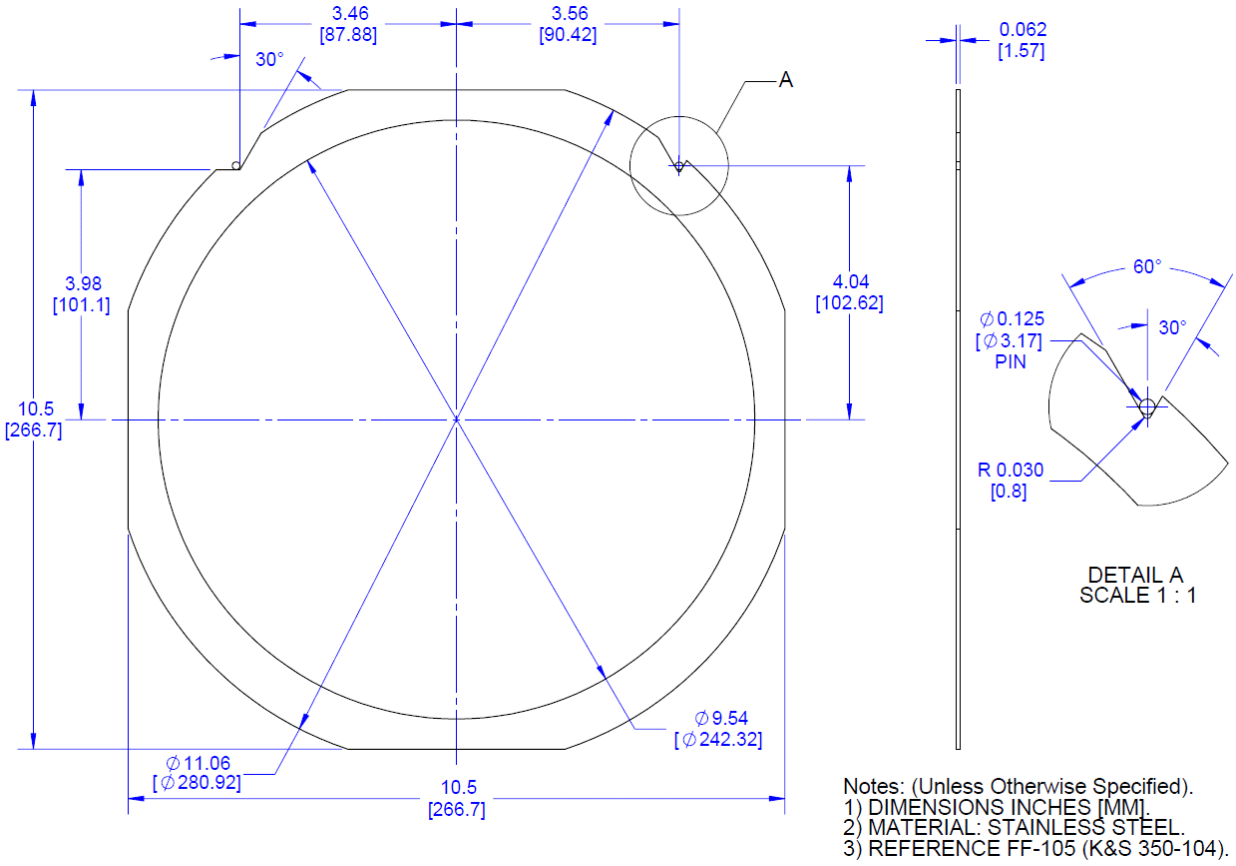

Figure 3. KNS Frame Drawing

5. Die Pad Connections

The pad names and connections for the AM1805BW, AM1815BW, AM1805CW, AM1815CW die are shown in Table 3 below. Please refer to the AM18X5 product datasheet for additional information concerning pad functionality.

Table 3: Die Pad Connections

Pad Name	Pad Type	Function	Pad Number			
			AM1805BW	AM1815BW	AM1805CW	AM1815CW
VSS	Power	Ground	9	9,10	9	9,10
VCC	Power	System power supply	20	20	20	20
XI	Xtal	Crystal input	1	1	1	1
XO	Xtal	Crystal output	2	2	2	2
VBAT(1)	Power	Battery power supply	8	8	8	8
SCL	Input	I^2C or SPI interface clock input	12	12	12	12
SDO	Output	SPI data output	-	11	-	11
SDI	Input	SPI data input	-	15	-	15
nCE	Input	SPI chip select input	-	18	-	18
SDA	Input	I^2C data input/output	11	-	11	-
EXTI(2)	Input	External interrupt input	16	16	16	16
WDI(2)	Input	Watchdog reset input	4	4	4	4
nEXTR(2)	Input	External reset input	6	6	6	6
FOUT/nIRQ	Output	Interrupt 1 / function output	17	17	17	17
PSW/nIRQ2	Output	Interrupt 2 / power switch output	7	7	7	7
CLKOUT/nIRQ3	Output	Interrupt 3 / clock output	13	13	13	13
nTIRQ	Output	Timer interrupt output	18	-	18	-
nRST	Output	Reset output	3	3	3	3
AF	Output	Autocalibration filter	19	19	19	19
NC	-	No connect	5,10,14, 15	5, 14	10,15	-

(1) The VBAT pin must be connected to VSS if not used.
(2) Input pins that are not used by the application cannot be left floating and must be connected to either VCC or VSS.

6. Ordering Information

Table 4: Ordering Information

Device	Serial Interface	Orderable Part Numbers		Temperature Range
		Wafer for Wire Bonding	Gold Bumped Wafer	
AM1805	I^2C	AM1805BW	AM1805CW	-40 to +85 ^oC
AM1815	SPI	AM1815BW	AM1815CW	
Note: All devices are compliant and certified with current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in raw homogeneous materials.				

7. Document Revision History

Table 5: Document Revision History

Rev #	Description
0.00	Initial version
0.10	Updated part numbers to AM1805CW and AM1815CW
1.0	Added AM1805BW and AM1815BW part number information

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