

Guidelines for Die Information Exchange between End user and Packaging/Testing team at Semi-Conductor Laboratory

1. Designer to provide following data/information required for bonding/packaging activities through email.

- 1.1. **GDS file** having 6 different layers, each representing following information:

- (1) Padnames
 - (2) Seal Ring
 - (3) Silicon No. block
 - (4) IO pads
 - (5) Dummy pads (if any)
 - (6) Die-outline

- 1.2. **Layermap file** with comments stating the data represented by each layer.

Keywords for comments: “Padnames”, “Seal Ring”, “Silicon No. Block”, “Die outline”, “IO pads”, “Dummy Pads”

- 1.3. Subject field of email should be “**DIE GDS: (Silicon Number)**” for easy tracking by recipients.
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2. After processing of GDS file, a 'BONDING TABLE' in EXCEL format containing PAD NAMES and PAD NUMBERS will be sent to designer with following fields:

PAD NAME	BONDING SCHEME	PAD TYPE	PAD MODEL	PAD NUMBER	BOND FINGER NUMBER	PIN NUMBER	PAD_X	PAD_Y	REMARKS

Figure - 1: Bonding table view

- a. Based on pad bonding requirements, designer to fill one out of following keywords in 'Bonding Scheme' column of the table for respective pads.

- i. SB (single bond)
- ii. MB (multiple bond)
- iii. BMB (backward multiple bond)
- iv. NB (no bond)

Note:

- Any special bond requirement like substrate bond, die pad- die pad bond etc. to be stated in remarks column of the bonding table.
- For multiple bonds and backward multiple bond, MB and BMB are to be augmented with numbers to separately represent each set. Example: MB1, MB2, MB3 etc.

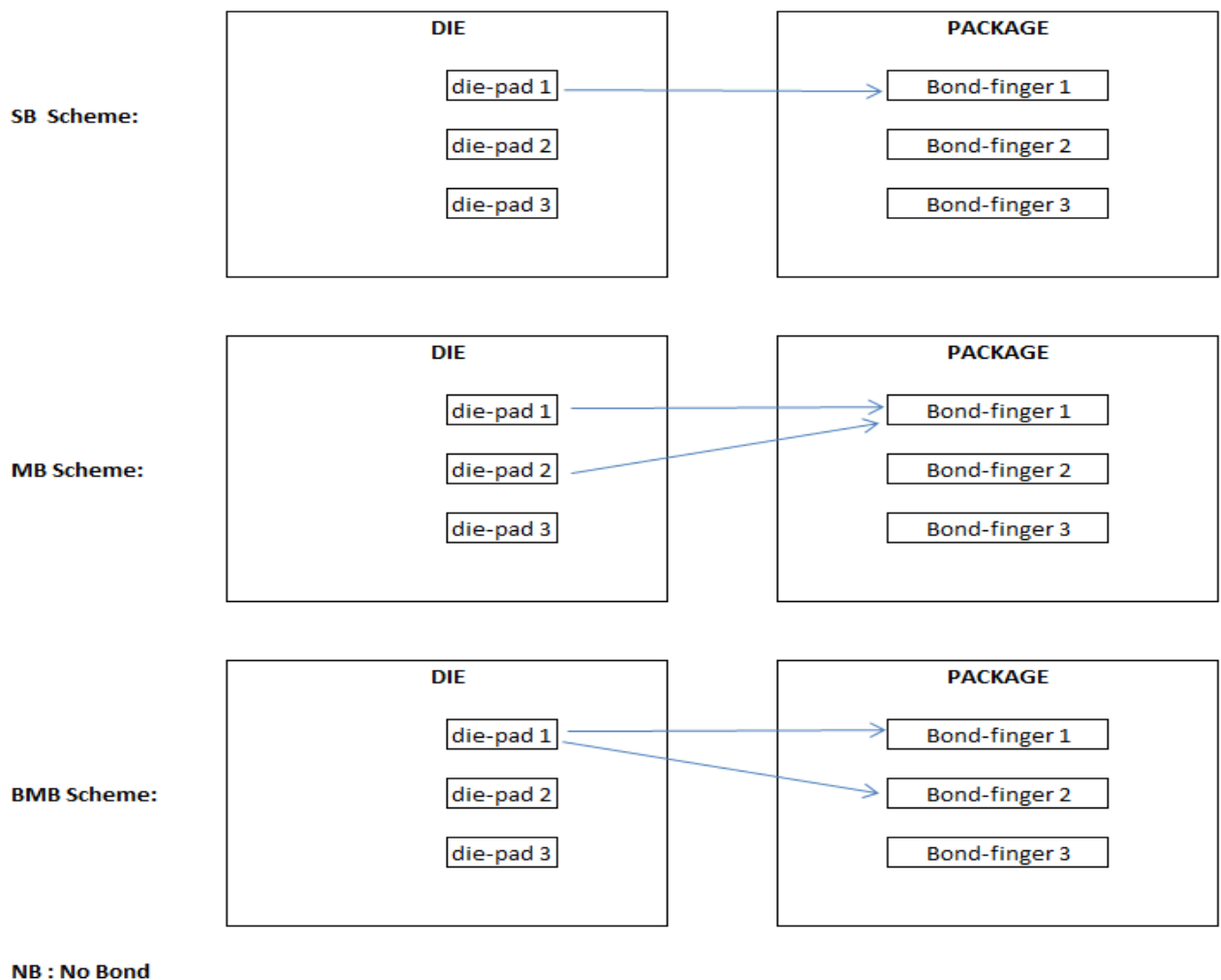


Figure - 2: Bonding scheme

b. For 'Pin Number' Column:

Case 1: If no constraint on hand, packaging team at SCL to fill pin numbering.

Case 2: If Constraint, design engineer to fill pin numbering and put remarks (if any) in designated column of the bonding table.

- c. In '*Pad Type*' column, designer to provide following keywords for signal and power type:

AVDD	(Analog VDD)
DVDD	(Digital VDD)
AVDDO	(Analog VDDO)
DVDDO	(Digital VDDO)
AVSS	(Analog VSS)
DVSS	(Digital VSS)
AVSSO	(Analog VSSO)
DVSSO	(Digital VSSO)
D-IN	(Digital – input)
A-IN	(Analog –input)
D-OUT	(Digital – output)
A-OUT	(Analog –output)
BI	(Bi-directional)
Tri	(Tristate)
OD	(Open Drain)
TEST	(Test pad)
TRIM	(Trim pad)

- d. Filled '*Bonding Table*' to be sent back to SCL.