

EIA Standard Layout of Solder Pad for BGA Devices

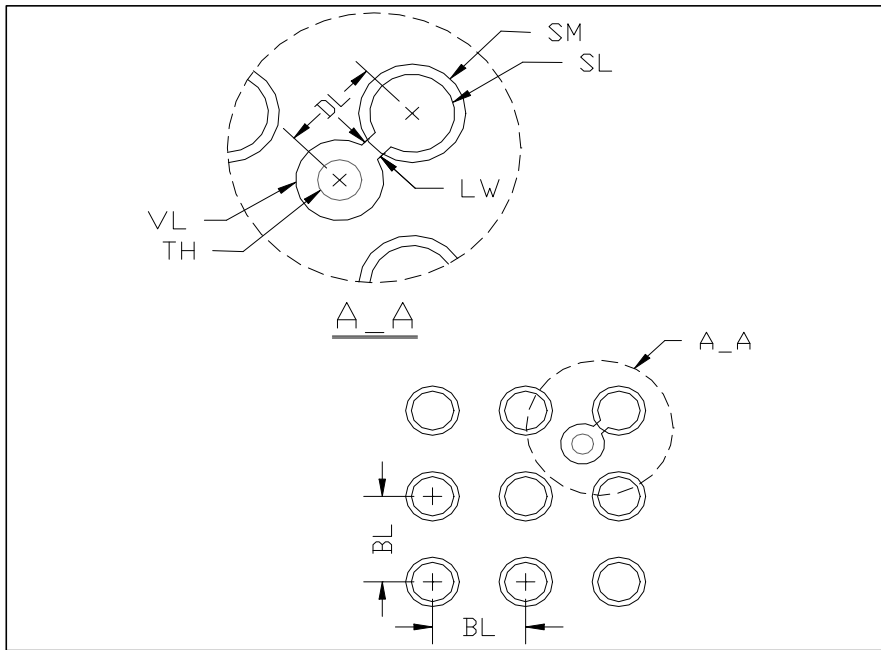


Figure 1: Suggested Board Layout of Soldered pads for BGA Packages

Table 1 contains the recommended board layout soldered pad dimension for Actel CS and GA BGA packages only.

Table 1: Recommended PCB Design Guidelines

Dim.	CS49	CS128	CS180	BG272	BG313	BG329	BG456	BG729
Component Land Pad Diameter (SMD)	0.40	0.40	0.40	0.63	0.63	0.63	0.63	0.63
Solder Land Diameter (SL)	0.37	0.37	0.37	0.58	0.58	0.58	0,58	0,58
Solder Mask Opening Diameter (SM)	0.50	0.50	0.50	0.73	0.73	0.73	0.73	0.73
Solder Ball Land Pitch (BL)	0.80	0.80	0.80	1.27	1.27	1.27	1.27	1.27
Line Width Between Via and Solder Land (LW)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Distance Between Via and Solder Land (DL)	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Via Land Diameter (VL)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Through Hole Diameter (TH)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Pad Array	Full	Perimeter	Perimeter	Perimeter	Staggered	Perimeter	Perimeter	Full
Pad Matrix	7x7	12x12	14x14	20x20	25x25	23x23	26x26	27x27
Periphery Rows	-	4	5	4 + 4x4	-	4 + 5x5	5 + 6x6	-

Suggested Board Layout of Soldered pads for BGA Packages

Table 2 contains the recommended board layout soldered pad dimension for Actel FG BGA packages only.

Table 2: Recommended PCB Design Guidelines

Dim.	FG144	FG256	FG484	FG676	FG896	FG1152
Component Land Pad Diameter (SMD)	0.40	0.45	0.45	0.45	0.45	0.45
Solder Land Diameter (SL)	0.37	0.42	0.42	0.42	0.42	0.42
Solder Mask Opening Diameter (SM)	0.50	0.55	0.55	0.55	0.55	0.55
Solder Ball Land Pitch (BL)	1.00	1.00	1.00	1.00	1.00	1.00
Line Width Between Via and Solder Land (LW)	0.15	0.15	0.15	0.15	0.15	0.15
Distance Between Via and Solder Land (DL)	0.70	0.70	0.70	0.70	0.70	0.70
Via Land Diameter (VL)	0.60	0.60	0.60	0.60	0.60	0.60
Through Hole Diameter (TH)	0.30	0.30	0.30	0.30	0.30	0.30
Pad Array	Full	Full	Perimeter	Full	Full	Full
Pad Matrix	12x12	16x16	26x26	26x26	30x30	34x34
Periphery Rows	-	-	5 + 8x8	-	-	-

Suggested Board Layout of Soldered pads for BGA Packages