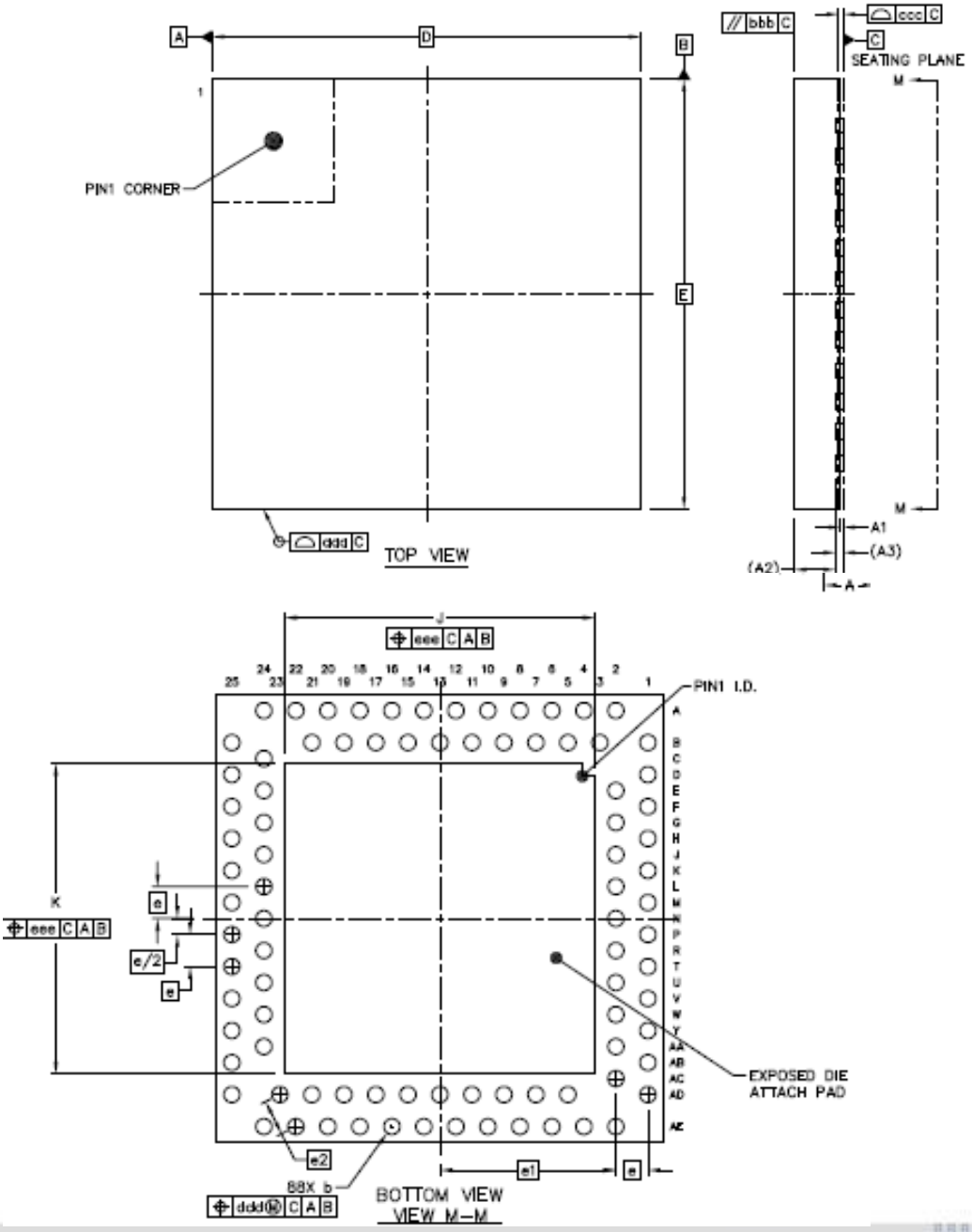
ASE GROUP

aQFN application note and aQFN/LGA process

CDE/CEI
ASECL
Jun. 10, 2016

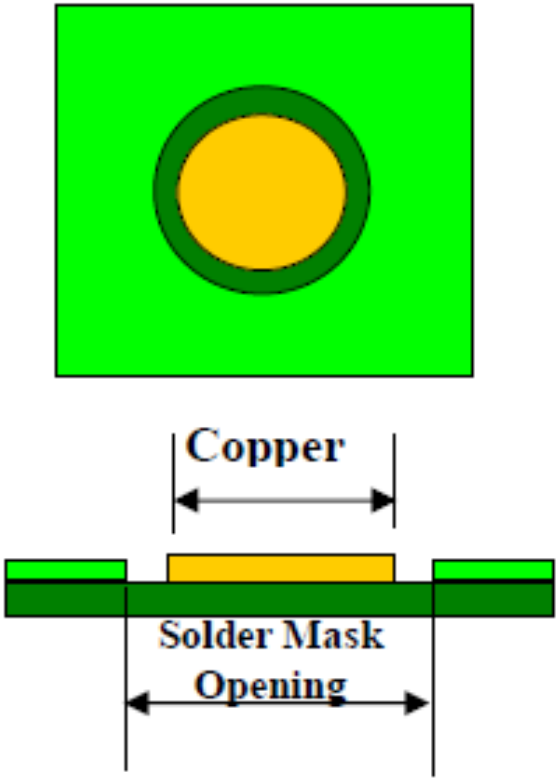
Package Outline (POD) Information



		SYMBOL	MIN	NOM	MAX
TOTAL THICKNESS		A	---	---	0.85
STAND OFF		A1	0.02	0.05	0.08
MOLD THICKNESS		A2		0.675 REF	
L/F THICKNESS		A3		0.13 REF	
LEAD WIDTH		b	0.2	0.25	0.3
BODY SIZE	X	D		7 BSC	
	Y	E		7 BSC	
LEAD PITCH		e		0.5 BSC	
		e1		2.75 BSC	
		e2		0.559 BSC	
EP SIZE	X	J	4.75	4.85	4.95
	Y	K	4.75	4.85	4.95
PACKAGE EDGE TOLERANCE		aaa		0.1	
MOLD FLATNESS		bbb		0.2	
COPLANARITY		ccc		0.08	
LEAD OFFSET		ddd		0.08	
EXPOSED PAD OFFSET		eee		0.1	

PCB Land Pattern Design

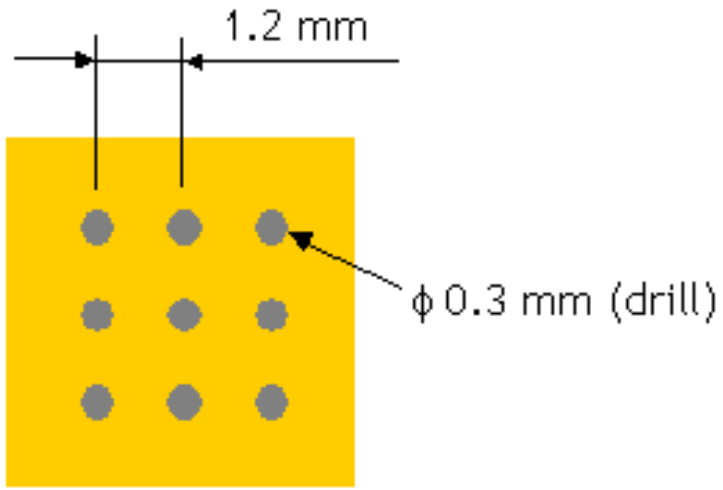
- **NSMD(Non-Solder Mask Defined)**



aQFN Package			PCB Land Pad Design			Stencil	
Terminal Size	Land Pitch	Land Shape	Land Shape	Copper Pad	Solder Mask	Thickness	Opening
0.35 mm	0.65 mm	Circle	Circle	0.35mm	0.45mm	0.12 mm	0.4 mm
0.3 mm	0.5 mm	Circle	Circle	0.3mm	0.4mm	0.1 mm	0.3 mm
0.25 mm	0.5 mm	Circle	Circle	0.275mm	0.375mm	0.1 mm	0.3 mm

PCB Thermal Pad Design

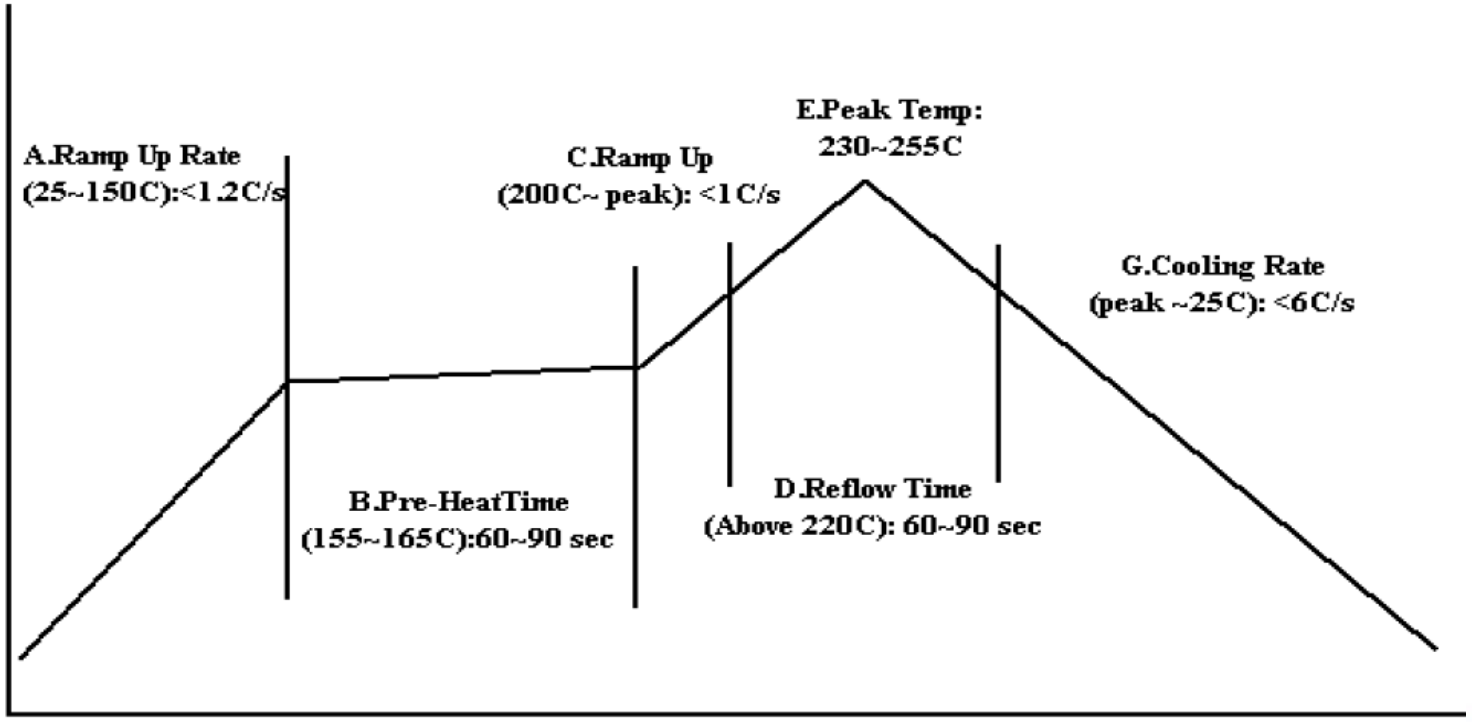
- **Thermal pad/via design**
  - **Thermal via dia: 0.3mm**
  - **Thermal via pitch: 1.2mm**



Reflow

- **Reflow Profile**
  - Below reflow-profile is base on using solder paste SAC305
  - Use Type 4 solder paste(25 to 45 micron particle size range) or finer for solder printing, and SAC305 is common used solder paste.
  - Senju M705-S101-S4 is recommended solder paste.

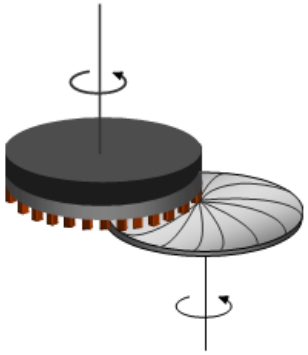
	A.Ram Up Rate (25~150C)	B.Pre-HeatTime (155~165C)	C.Ramp Up (200C~peak)	D.Reflow Time (Above 220C)	E.Peak Temp	G.Cooling Rate (peak~25C)
SPEC.	<1.2C/s	60~90 sec	<1C/s	60~90 sec	230~255C	<6C/s



aQFN Process Flow

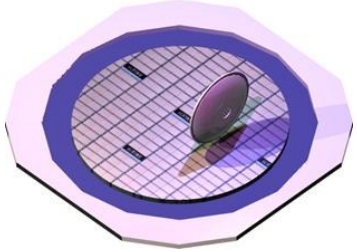
ASE GROUP

Grinding



Wafer saw

Wafer saw



Die (chip)

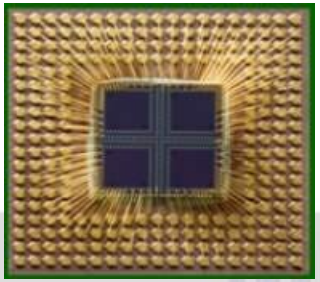
Die Bond

Die Bond

Wire Bond

Wire Bond

3rd optical gate



Molding

Molding

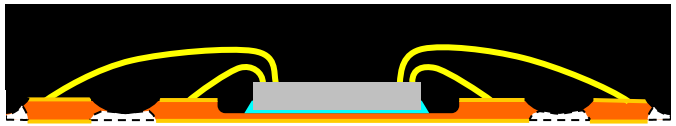
PMC

Marking

Etching

De-burr

Etching&De-burr



Singulation

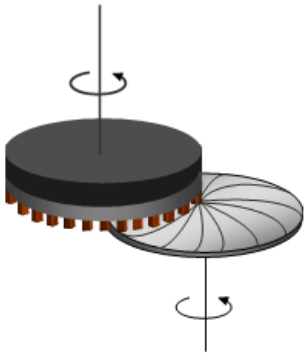
Singulation

FVI(UI)

4th optical gate

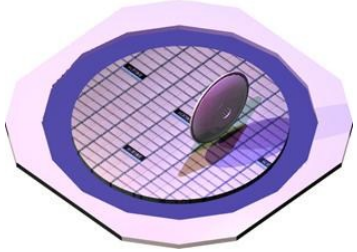
LGA Process Flow

Grinding



Wafer saw

Wafer saw



Die (chip)

Die Bond

Die Bond

Wire Bond

Wire Bond

3rd optical gate

Molding

Molding

PMC

Marking

Saw Singulation

Saw Singulation

FVI(UI)

4th optical gate

Thank You

www.aseglobal.com