

**Qualification Results Summary of 7x7, 10x10, 12x12 TQFP\_EP Using G700L/3230 at Amkor Philippines**

QUALIFICATION PLAN / STATUS			
TEST	SPECIFICATION	SAMPLE SIZE	RESULTS
Temperature Cycle (TC)*	JEDEC <i>JESD22-A104</i>	3 x 32	Pass
Unbiased HAST (uHAST)*	JEDEC <i>JESD22-A118</i>	3 x 32	Pass
Highly Accelerated Stress Test (HAST)*	JEDEC <i>JESD22-A110</i>	3 x 32	Pass
Solder Heat Resistance (SHR)*	JEDEC/IPC <i>J-STD-020</i>	3 x 11	Pass
High Temperature Storage Life (HTSL)	JEDEC <i>JESD22-A103</i>	1 x 32	Pass
Electrostatic Discharge <i>Field-Induced Charged Device Model</i>	JEDEC <i>JESD22-C101</i>	3/voltage	Pass 500 V

\*Preconditioned per JEDEC/IPC J-STD-020

**Qualification Results Summary of 10x10, 12x12 TQFP\_EP Using G700L/8361J at Amkor Philippines**

QUALIFICATION PLAN / STATUS			
TEST	SPECIFICATION	SAMPLE SIZE	RESULTS
Temperature Cycle (TC)*	JEDEC <i>JESD22-A104</i>	3 x 32	Pass
Unbiased HAST (uHAST)*	JEDEC <i>JESD22-A118</i>	3 x 32	Pass
Highly Accelerated Stress Test (HAST)*	JEDEC <i>JESD22-A110</i>	3 x 32	Pass
Solder Heat Resistance (SHR)*	JEDEC/IPC <i>J-STD-020</i>	3 x 11	Pass
High Temperature Storage Life (HTSL)	JEDEC <i>JESD22-A103</i>	1 x 32	Pass
Electrostatic Discharge <i>Field-Induced Charged Device Model</i>	JEDEC <i>JESD22-C101</i>	3/voltage	Pass 1250 V

\*Preconditioned per JEDEC/IPC J-STD-020

Assembly Transfer of Selected 14x14 LQFP, 14x14 LQFP\_EP and 7x7,10x10,12x12,14x14 TQFP\_EP Products to Amkor Philippines

**14x14 LQFP Using G631HQ/3230 at Amkor Philippines**

QUALIFICATION PLAN / STATUS			
TEST	SPECIFICATION	SAMPLE SIZE	EXPECTED COMPLETION DATE
Temperature Cycle (TC)*	JEDEC <i>JESD22-A104</i>	3 x 45	Dec. 2015
Autoclave (AC)*	JEDEC <i>JESD22-A102</i>	3 x 45	Dec. 2015
Highly Accelerated Stress Test (HAST)*	JEDEC <i>JESD22-A110</i>	3 x 45	Dec. 2015
Solder Heat Resistance (SHR)*	JEDEC/IPC <i>J-STD-020</i>	3 x 11	Dec. 2015
High Temperature Storage Life (HTSL)	JEDEC <i>JESD22-A103</i>	1 x 45	Dec. 2015

\*Preconditioned per JEDEC/IPC J-STD-020

**Qualification Results Summary of 14x14 LQFP Using G631HQ/3230/QMI536 at Amkor Philippines**

QUALIFICATION PLAN / STATUS			
TEST	SPECIFICATION	SAMPLE SIZE	EXPECTED COMPLETION DATE
Temperature Cycle (TC)*	JEDEC <i>JESD22-A104</i>	3 x 45	Pass
Unbiased HAST (uHAST)*	JEDEC <i>JESD22-A118</i>	3 x 45	Pass
Highly Accelerated Stress Test (HAST)*	JEDEC <i>JESD22-A110</i>	3 x 45	Pass
Solder Heat Resistance (SHR)*	JEDEC/IPC <i>J-STD-020</i>	3 x 11	Pass
High Temperature Storage Life (HTSL)	JEDEC <i>JESD22-A103</i>	1 x 45	Pass
Electrostatic Discharge <i>Field-Induced Charged Device Model</i>	JEDEC <i>JESD22-C101</i>	3/Voltage	Pass 1250 V

\*Preconditioned per JEDEC/IPC J-STD-020

Assembly Transfer of Selected 14x14 LQFP, 14x14 LQFP\_EP and 7x7,10x10,12x12,14x14 TQFP\_EP Products to Amkor Philippines

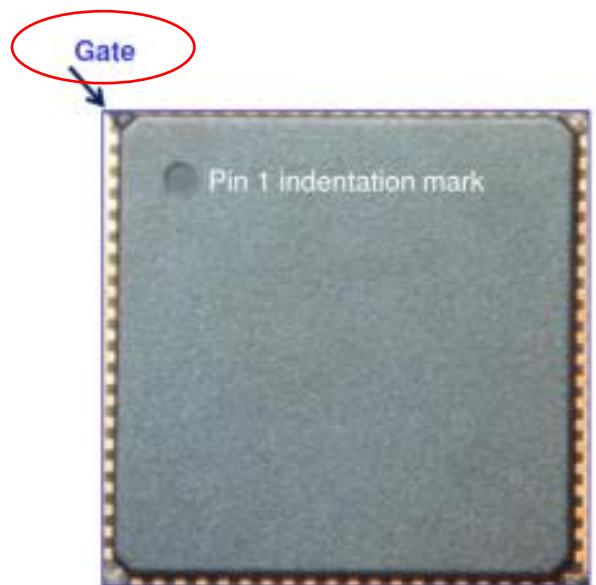
**14x14 LQFP\_EP Using G631HQ/3230 at Amkor Philippines**

QUALIFICATION PLAN / STATUS			
TEST	SPECIFICATION	SAMPLE SIZE	EXPECTED COMPLETION DATE
Temperature Cycle (TC)*	JEDEC <i>JESD22-A104</i>	3 x 45	Dec. 2015
Autoclave (AC)*	JEDEC <i>JESD22-A102</i>	3 x 45	Dec. 2015
Highly Accelerated Stress Test (HAST)*	JEDEC <i>JESD22-A110</i>	3 x 45	Dec. 2015
Solder Heat Resistance (SHR)*	JEDEC/IPC <i>J-STD-020</i>	3 x 11	Dec. 2015
High Temperature Storage Life (HTSL)	JEDEC <i>JESD22-A103</i>	1 x 45	Dec. 2015

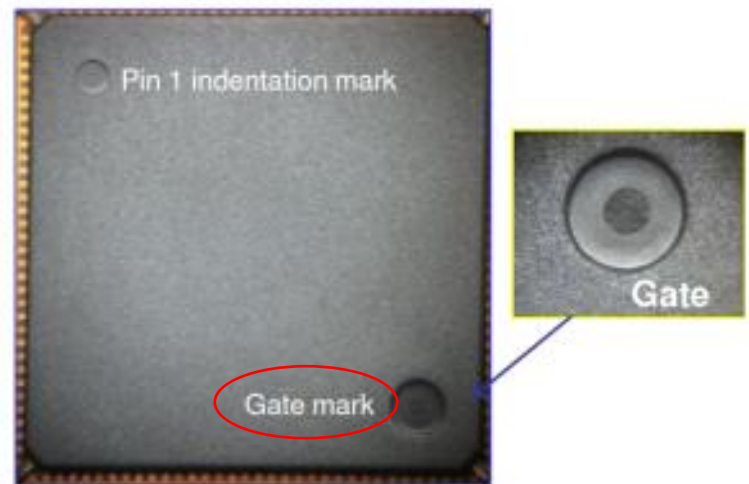
\*Preconditioned per JEDEC/IPC J-STD-020

# 14x14 Mold Compound & Mold Gate Position Change

Change Item	AK1	AP1	Reason for Change
14BD Mold Compound	Sumitomo G700L	Sumitomo G631HQ	AP1 standard
14x14 Mold Gate Position	Package corner	Package top side, opposite corner of Pin 1 mark	AP1 standard



**AK1 Example**



**AP1 Example**

**Qualification Results Summary of 14x14 TQFP\_EP Using G631HQ/3230 at Amkor Philippines**

QUALIFICATION PLAN / STATUS			
TEST	SPECIFICATION	SAMPLE SIZE	RESULTS
Temperature Cycle (TC)*	JEDEC <i>JESD22-A104</i>	3 x 45	<b>Pass</b>
Unbiased HAST (uHAST)*	JEDEC <i>JESD22-A118</i>	3 x 45	<b>Pass</b>
Highly Accelerated Stress Test (HAST)*	JEDEC <i>JESD22-A110</i>	3 x 45	<b>Pass</b>
Solder Heat Resistance (SHR)*	JEDEC/IPC <i>J-STD-020</i>	3 x 11	<b>Pass</b>
High Temperature Storage Life (HTSL)	JEDEC <i>JESD22-A103</i>	1 x 45	<b>Pass</b>
Electrostatic Discharge <i>Field-Induced Charged Device Model</i>	JEDEC <i>JESD22-C101</i>	3/voltage	<b>Pass 750 V</b>

\*Preconditioned per JEDEC/IPC J-STD-020