





## PRODUCT/PROCESS CHANGE NOTICE (PCN)

### ATTACHMENT I - PCN # : A1706-01 (R2)

**PCN Type:** Manufacturing Site - Transfer Bumping Location

**Data Sheet Change:** None

**Detail Of Change:**

This notification to advise our customers that Amkor, Taiwan is transferring the wafer bumping process for 300mm wafer size at Amkor, Taiwan T5 (ATT T5) to Amkor, Taiwan T1 (ATT T1) as ATT T5 will discontinue the bumping process by January 5, 2018.

There is no change in form, fit and function of the products including RoHS compliance and MSL rating. In addition, materials, process and equipments are the same at both sites. Refer to details in this notice.

**Qualification Information and Qualification Data:**

**Affected Packages:** FCCSP and FCBGA

**Qual Plan & Results:** Tests are in accordance with JEDEC47 recommended tests.

**Qualification Vehicle:** FCCSP-253

Test Description	Test Method	Test Results (Rej / SS)		
		Lot 1	Lot 2	Lot 3
* Temperature Cycling (-55°C to 125°C, 700 cycles)	JESD22-A104	0/25	0/25	0/25
* HAST - biased (130 °C/85% RH, 96 Hrs)	JESD22-A110	0/25	0/25	0/25
* HAST - unbiased (130 °C/85% RH, 96 Hrs)	JESD22-A118	0/25	0/25	0/25
High Temperature Storage Bake (150°C, 1000 Hrs)	JESD22-A103	0/25	0/25	0/25
Moisture Sensitivity Level, MSL	J-STD-20 / MSL 3, 260 °C	0/25	0/25	-

\* Tests were subjected to Preconditioning per JESD22-A113 prior to stress test



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### Affected Part Numbers

Part Number	Part Number	Part Number	Part Number
4RCD0124KC0ATG	89H24NT24G2ZCHLGI	89H32NT8AG2ZBHLG8	89H64H16G2ZCBLG
4RCD0124KC0ATG8	89H24NT24G2ZCHLG8	89H32NT8AG2ZBHLGI	89H64H16G3YCBLG
4RCD0124KC0ATG8/M	89H24NT6AG2ZAHLG	89H32NT8AG2ZCHLG	89HAL808G2ZCHLGI
80HCPS1432CRM/AL	89H24NT6AG2ZAHLG8	89H32NT8AG2ZCHLG8	89HAL808G2ZCHLG8
80HCPS1616CHRI	89H24NT6AG2ZAHLGI	89H32NT8AG2ZCHLGI	89HI0524G2PSZCALG
80HCPS1616RM	89H24NT6AG2ZAHLG8	89H32NT8BG2ZBHLGI	89HPES16T4AG2ALGI
80HCPS1616RMI	89H24NT6AG2ZBHLG	89H32NT8BG2ZCHLG	89HPES16T4AG2ZCALG
80HCPS1848CBRI-5	89H24NT6AG2ZBHLG8	89H32NT8BG2ZCHLGI	89HPES24T3G2ZCALG
80HCPS1848CBRI-L	89H24NT6AG2ZCHLG	89H32NT8BG2ZCHLG15	89HPES24T3G2ZCALGI
80HCPS1848CRM/AL	89H24NT6AG2ZCHLG8	89H32T8G2ZCBLG	89HPES24T6G2ZCALG
80HCPS1848CRMI-5	89H24NT6AG2ZCHLGI	89H32T8G2ZCBLG8	89HPES24T6G2ZCALG8
89H12NT12G2ZCHLG	89H32H8G2ZCBLG	89H32T8G2ZCBLGI	89HPES24T6G2ZCALGI
89H12NT12G2ZCHLGI	89H32H8G2ZCBLG8	89H34H16G2ZCBLG	89HPES4T4G2ZCALG
89H12NT12G2ZCHLG8	89H32H8G2ZCBLGI	89H48H12AG2ZCBLG	89HPES4T4G2ZCALGI
89H16NT16G2ZCHLG	89H32H8G2ZCBLG8	89H48H12AG2ZCBLGI	89HPES6T6G2ZCALG
89H16NT16G2ZCHLG8	89H32NT24AG2ZBHLG	89H48H12G2ZCBLG	89HPES6T6G2ZCALGI
89H16NT16G2ZCHLGI	89H32NT24AG2ZBHLGI	89H48H12G2ZCBLGI	TSI721-16GCLY
89H16NT16G2ZCHLG8	89H32NT24AG2ZCHLG	89H48H12G2ZDBLG	TSI721-16GILY
89H16T16AG2ZCHLG	89H32NT24AG2ZCHLGI	89H48T12G2ZCBLG	
89H24NT24G2ZBHLG	89H32NT24BG2ZCHLG	89H48T12G2ZCBLGI	
89H24NT24G2ZCHLG	89H32NT24BG2ZCHLGI	89H64H16AG2ZCBLG	
89H24NT24G2ZCHLG8	89H32NT8AG2ZBHLG	89H64H16AG2ZCBLGI	



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Comparison between ATT T5 (Existing Site) vs ATT T1 (New Site)

### (i) Equipment/Tools Comparison

Process Step	Comparison of T5 and T1 Equipment/Tool
Coating	ATT5 and ATT1 have the same equipment, same vendor and model
Exposure	ATT5 and ATT1 have the same equipment, same vendor and model
Develop	ATT5 and ATT1 have the same equipment, same vendor and model
Cure	ATT5 and ATT1 have the same equipment, same vendor and model
Descum	ATT5 and ATT1 have the same equipment, same vendor and model
Sputter	ATT5 and ATT1 have the same equipment, same vendor and model
Plating	ATT5 and ATT1 have the same equipment, same vendor and model
Etch	ATT5 and ATT1 have the same equipment, same vendor and model
Strip	ATT5 and ATT1 have the same equipment, same vendor and model
Reflow	ATT5 and ATT1 have the same equipment, same vendor and model

### (ii) Process Comparison

Loop	Operation	Parameter Settings Comparison
IQC	T1_BP_SP_IQC_BDESCUM	T1 and T5 settings are the same
	T1_BP_SP_BINC_CLN	T1 and T5 settings are the same
PI photo	T1_BP_BCOAT_PI	T1 and T5 settings are the same
	T1_BP_SP_BEXPOSURE_25	T1 and T5 settings are the same
	T1_BP_BDEVELOP_PI	T1 and T5 settings are the same
UBM sputter	T1_BP_SP_BCURE_PI	T1 and T5 settings are the same
	T1_BP_SP_BUBM_DEP	T1 and T5 settings are the same
PR photo	T1_BP_SP_BCOAT_4620	T1 and T5 settings are the same
	T1_BP_SP_BEXPOSURE_30	T1 and T5 settings are the same
	T1_BP_SP_BDEVELOP_4620	T1 and T5 settings are the same
Plating & Strip	T1_BP_SP_4620_BDESCUM	T1 and T5 settings are the same
	T1_BP_SP_BNI_PLT	T1 and T5 settings are the same
	T1_BP_SP_BLFC4_PLT	T1 and T5 settings are the same
UBM etch	T1_BP_SP_BPR_STRIP	T1 and T5 settings are the same
	T1_BP_SP_BLFTICU_ETCH	T1 and T5 settings are the same
Reflow & Flux clean	T1_BP_SP_ETCH_BDESCUM	T1 and T5 settings are the same
	T1_BP_SP_BFLX_RF	T1 and T5 settings are the same
	T1_BP_SP_BFLX_CLN	T1 and T5 settings are the same



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**Comparison of ATT T5 (Existing Site) vs ATT T1 (New Site)**

**(iii) Materials Comparison**

Process Step	Material	Same type as T5	
	ATT5	ATT1	Comment
Re-Passivation	HD4100	HD4100	T1 uses the same materials as T5
Photo resist	AZ4620	AZ4620	T1 uses the same materials as T5
Sputter	Ti target	Ti target	T1 uses the same materials as T5
	Cu target	Cu target	T1 uses the same materials as T5
Plating material	Ni	Ni	T1 uses the same materials as T5
	LF	LF	T1 uses the same materials as T5
Etch	BOE (HF base) (Ti)	BOE (HF base) (Ti)	T1 uses the same materials as T5
	Cu etching (Typical)	Cu etching (Typical)	T1 uses the same materials as T5
Strip	Acetone	Acetone	T1 uses the same materials as T5
	Solvent	Solvent	T1 uses the same materials as T5
Reflow	5R (non-soluble)	5R (non-soluble)	T1 uses the same materials as T5
Flux clean	mestylene, IPA	mestylene, IPA	T1 uses the same materials as T5