

## BILL OF MATERIALS

Generic	Material List	Wire Size	DIE ATTACH EPOXY	MOLD COMPOUND	
				FROM	TO
AD5544	AD5544ACPZ-1-RL7 AD5544BCPZ-RL7	1.0 mil	ABLESTIK 8290	SUMITOMO G770	SUMITOMO G700
AD5628	AD5628ACPZ-1-RL7 AD5628ACPZ-2-RL7 AD5628BCPZ-2-RL7 AD5628BCPZ-2-U1				
AD5629R	AD5629RACPZ-2-RL7 AD5629RACPZ-3-RL7 AD5629RBCPZ-1-RL7 AD5629RBCPZ-2-RL7				
AD5668	AD5668ACPZ-2-RL7 AD5668ACPZ-3-RL7 AD5668BCPZ-1500RL7 AD5668BCPZ-1-RL7 AD5668BCPZ-2500RL7 AD5668BCPZ-2-RL7				
AD5669R	AD5669RACPZ-2-RL7 AD5669RACPZ-3-RL7 AD5669RBCPZ-1500R7 AD5669RBCPZ-1-RL7 AD5669RBCPZ-2500R7 AD5669RBCPZ-2-RL7				

## Qualification Data for LFCSP Devices at Amkor Philippines

QUALIFICATION RESULTS 20-LFCSP			
TEST	SPECIFICATION	SAMPLE SIZE (LOT/QTY)	RESULTS
High Temperature Storage (HTS)	JESD22-A103 150°C, 1000 hours	<b>1 x 77</b>	<b>Pass</b>
Temperature Cycle*	JES22-A104, -65°C to +150°C, 2 cycle per hour, 500 cycles	<b>3 x 77</b>	<b>Pass</b>
Biased HAST *	JESD22-A110, 130°C, 85% RH, 96hrs	<b>3 x 77</b>	<b>Pass</b>
Autoclave *	JESD22-A102, 121°C, 100% RH, 96hrs	<b>3 x 77</b>	<b>Pass</b>
Solder Heat Resistance (SHR)*	JEDEC/IPC J-STD-020	<b>3 x 11</b>	<b>Pass</b>
Electrostatic Discharge (ESD) Field Induced Charged Device Model (FICDM)	JESD22-C101, >500V	<b>1 x 3</b>	<b>Pass</b>

## QUALIFICATION RESULTS 48-LFCSP

TEST	SPECIFICATION	SAMPLE SIZE (LOT/QTY)	RESULTS
High Temperature Storage (HTS)	JESD22-A103 150°C, 1000 hours	<b>1 x 45</b>	<b>Pass</b>
Temperature Cycle*	JES22-A104, -65°C to +150°C, 2 cycle per hour, 500 cycles	<b>3 x 45</b>	<b>Pass</b>
Biased HAST *	JESD22-A110, 130°C, 85% RH, 96hrs	<b>3 x 45</b>	<b>Pass</b>
Autoclave *	JESD22-A102, 121°C, 100% RH, 96hrs	<b>3 x 45</b>	<b>Pass</b>
Solder Heat Resistance (SHR)*	JEDEC/IPC J-STD-020	<b>3 x 11</b>	<b>Pass</b>
Electrostatic Discharge (ESD) Field Induced Charged Device Model (FICDM)	JESD22-C101, >500V	<b>1 x 3</b>	<b>Pass</b>

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

# Test Qualification Plan

## 1. SCM Correlation Data Gathering

- Loop 4 bin1 units x30
- Run 100 bin1 units on handler
- Serialize and test 10 bin1 units
- Serialize and test 5 reject units

## 2. Ship correlation package from SCM to SCC

## 3. SCC Correlation Data Gathering

- Loop 4 bin1 units x30
- Run 100 bin1 units on handler
- Test 10 already serialized bin1
- Test 5 already serialized rejects

## 4. SCM/SCC send data to ADGT for Data Crunching and Analysis

## 5. CorL8 Analysis of x30 loop /100 units handler data

- X30 loop must pass Mean Shift, Sigma Spread and CPK criteria
- 100 Bin1 Correlation units must pass Mean Shift, Sigma Spread and CPK criteria
- 10 serialized units must pass bin1 both in SCC and in SCM
- 5 serialized rejects must fail the same parameter for both SCC and SCM

## 6. Correlation Data Approval

- For TRB movement to Available with Condition

## 7. Validation lot run handled by SCC

Note: CorL8 is ADI data analysis tool.

Reject Correlation		
Unit	SCM	SCC
1	TnumX: XXXXX	TnumX: XXXXX
...	TnumX: XXXXX	TnumX: XXXXX
5	TnumX: XXXXX	TnumX: XXXXX

Bin1 Correlation		
Unit	SCM	SCC
1	Pass	Pass
...	Pass	Pass
10	Pass	Pass

Correlation Test Criteria(TST00137 )	
<b>% Mean Shift Criteria</b>	$(( SCM\_mean - SCC\_Mean ) / ( Upper\_Limit - Lower\_Limit ) ) \times 100 \leq 5$
<b>Sigma Spread Criteria</b>	$( SCC\_Sigma / SCM\_Sigma ) \leq 1.300000$
<b>Cpk Criteria</b>	If Cpk to the test limits is >10, then test given automatically PASS

# Test Qualification estimated Timeline

Devices	Oct, 2013 to Nov, 2013	Dec, 2013 to Apr, 2014	May, 2014
SCM Correlation Data Gathering & Shipment	PLANNED	PLANNED	
SCC Correlation Data Gathering		PLANNED	
Data Review and Approved by ADGT		PLANNED	
Validation Run/TRB Closure		PLANNED	PLANNED

 PLANNED  
 ACTUAL/ADJUSTED