QUARTERLY RELIABILITY MONITOR REPORT

Q1, Jan. ~ Mar. 2013

Prepared by MPSCD Reliability Engineering

The Future of Analog IC Technology®

INDEX

1.0 INTRODUCTION

This report summarizes the reliability testing results for MPS products as of Q1 2013.

1.1 SHORT TERM RELIBILITY MONITORING

The short term monitoring runs on a daily basis. It provides a fast alert in case of changes in term of product reliability performance.

Stress Test Name	Test Condition	Duration	JEDEC
EARLY LIFE	125°C, Vccmax	48 ~168 hrs	JESD22-A108
Convection Reflow	260°C	3 times	JESD22-A113
Temperature Cycle	Cond C:-65℃ ~ 150℃	100~200Cycles	JESD22-A104
Autoclave	121°C /100%RH	48~96 hrs	JESD22-A102

1.2 LONG TERM RELIBILITY MONITORING

The long term monitoring runs on a quarterly basis. It provides the life stresses for periods long enough to provide the data necessary to calculate the steady state failure rates of products.

Stress Test Name	Test Condition	Duration	JEDEC
HTOL	125°C, Vccmax	1000 hrs	JESD22-A108
HTSL	150°C	1000 hrs	JESD22-A103
Precondition	/	/	JESD22-A113
Autoclave	121°C /100%RH	168 hrs	JESD22-A102
Temperature Cycle	Cond C:-65°C ~ 150°C	1000 Cycles	JESD22-A104
Temperature Humidity Bias (THB)	85°C, 85% R.H., VDD	1000 hrs	JESD22-A101
High Accelerated Stress Test (HAST)	130°C, 85% R.H., VDD	96 hrs	JESD22-A110

2.0 FAILURE RATE CALCULATIONS AND PREDICTIONS

The long-term failure rate for a technology is gauged by a Failures In Time (FIT) calculation based upon accelerated stress data. The units for FIT are failures per Billion device hours.

$$FITRate = \frac{(\chi^2 / 2) * 10^9}{stress * device\ hours}$$

The stress that enables FIT is High Temperature Operating Life (HTOL), which is a product level test. HTOL is accelerated by temperature and by voltage. The total number of failures in stress determines the chi-squared factor (a dimensionless number representing a 60% confidence level of statistics). The number of product units times the stress period (in Hours) is the device-Hours number. The Arrhenius equation uses the Activation energy for the fail mode as well as the stress temperature and the reporting temperature (e.g. 55℃) to compute the HTOL temperature acceleration factor, AF(T). The accelerated stress device-Hours is AF(T) times the device-Hours number. AFv= Exp(β (Vtest- Vuse), Vtest = Stress Voltage (V).Vuse = Nominal Voltage (V). β = Voltage Acceleration Constant (usually, 0.5 < Z < 1.0).

3.0 PROCESS RELIABILITY MONITORING DATA

3.1 BCM12B Process Technology

The data in the tables that follow was generated as the result of an on-going Process Reliability Monitor.

The specific fab locations included in this process monitor are:

HHNEC, ASMC,SMIC

EARLY LIFE (HTOL Short Term Monitor)

Stress Duration: 48 ~168 hours

Test Condition: Vccmax @125°C

Device	LOT#	D/C	Close Date	Sample Size	# of hrs	# of Fail	FA No.
MP2303DN	C486631.9A	1232	02-06-13	50	168	0	
MP2303DN	C486631.9B	1234	02-06-13	50	168	0	
MP1412DH	C285403.7	1231	01-08-13	80	168	0	
MP1412DH	C285402.7R	1233	01-08-13	80	168	0	
MP1412DH	C285402.7	1234	01-08-13	80	168	0	
MP2603EJ	C888423.1AT	1243	01-25-13	80	168	0	
MP2603EJ	C888382.1AT	1243	01-25-13	80	168	0	
MP2603EJ	C988552.1	1247	02-27-13	79	168	0	
MP1484EN	C687360.7	1250	01-09-13	80	48	0	
MP3302DJ	C472636.7B	1248	02-04-13	80	48	0	
MP2451DT	C672847.7	1248	01-12-13	80	48	0	
MP1484EN	C787773.7	1251	01-15-13	80	48	0	
MPQ2451DT1	C872014.7	1248	02-27-13	80	48	0	
MPQ4460DQ	C972085.7	1247	02-06-13	80	48	0	
MP1484EN	C787781.7	1251	02-08-13	78	48	0	
MP4459DQT	C772903.7	1248	02-18-13	80	48	0	
MPQ2483DQ1	CA72108.9A	1249	02-27-13	80	48	0	
MP1412DH	C285299.7	1303	02-08-13	80	48	0	
MP1593DN-C218	C385905.7	1223	02-08-13	80	48	0	
MP3302DJ	C486455.7	1302	02-27-13	80	48	0	
MPQ7731DF	C572802.7A	1248	02-27-13	80	48	0	
MP9115DQT	CA89007.8A	1305	02-27-13	80	48	0	
MPQ4462DQ1	C472618.9A	1242	03-06-13	80	48	0	
MP2359DT	C687474.9	1303	02-22-13	80	48	0	
MP3217DJ	C888434.7	1303	03-06-13	80	48	0	
MP1484EN-C321	C787819.7	1302	02-27-13	80	48	0	
MP2307DN	C787835.7	1304	02-27-13	80	48	0	
MP3217DJ	CA88955.9	1304	03-13-13	77	96	0	
MP1412DH	C285398.7	1304	02-27-13	77	96	0	
MP1412DH	C285401.7A	1305	03-01-13	80	48	0	
MP1484EN	C787834.7	1304	02-27-13	80	48	0	

Device	LOT#	D/C	Close Date	Sample Size	# of hrs	# of Fail	FA No.
MP1482DN	C687441.7	1251	03-06-13	80	48	0	
MP1411DH	C285213.1A	1219	03-06-13	80	48	0	
MP1411DH	C285220.1A	1219	03-07-13	80	48	0	
MP1411DH	C285219.7	1219	03-13-13	80	48	0	
MP1482DS-C165	CA88796.7	1305	03-06-13	80	48	0	
MP1411DH	C285218.7	1219	03-13-13	80	48	0	
MPQ7731DF	CB72236.9A	1308	03-20-13	80	48	0	
MP1482DN	CA88794.7	1305	03-20-13	80	48	0	
MP1482DN	C687458.7	1308	03-13-13	80	48	0	
MP1484EN-C321	C787903.7	1305	03-20-13	80	48	0	
MP1482DN	C687456.7	1308	03-13-13	80	48	0	
MP2105DJ	C888428.7	1302	03-28-13	80	48	0	
MP1484EN-C321	C687656.7	1308	03-13-13	80	48	0	
MP1482DN	C687636.7	1308	03-13-13	80	48	0	
MP1482DN	C687315.7	1308	03-13-13	80	48	0	
MP1411DH	C285213.7	1219	03-20-13	80	48	0	
MP1411DH	C285501.7	1308	03-20-13	80	48	0	
NB600CQ	C372376.7	1302	03-22-13	80	48	0	
MP4460DQ	C972050.7	1303	03-28-13	80	48	0	
MP1484EN	C788077.7	1305	03-20-13	80	48	0	
MP1411DH	C285503.7	1308	03-22-13	80	48	0	
MP1482DN	C687644.7	1308	03-20-13	80	48	0	
MP2121DQ	C587008.7	1309	03-28-13	80	48	0	
MP1412DH	BC84887.1A	1310	03-25-13	80	48	0	
MP1482DN	C687459.7	1309	03-28-13	80	48	0	
MP1482DN	C687455.7	1309	03-28-13	80	48	0	
MP1482DS-C165	C787704.7	1302	03-28-13	80	48	0	
MP1484EN	C888216.7	1306	03-28-13	80	48	0	
MP2303ADN	C587166.7	1310	03-22-13	80	48	0	
MP2012DQ	C788042.1	1310	03-25-13	80	48	0	
MP1484EN	C888215.7	1306	03-28-13	80	48	0	
Total						0	

LONG TERM LIFE (HTOL Long Term Monitor)

Stress Duration: 1000 hours

Test Condition: Vccmax @125°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MPQ8039GN	EP177100	1224	01-30-13	80	0	
MPQ8039GN	EP177102	1224	01-30-13	80	0	
MP4000DS	EP275800	1242	01-23-13	80	0	
MP3900DK	EP275300	1245	01-18-13	80	0	
Total					0	

BCM12B	#fail	#device hours	Accel Factor	FIT Rate
	0	240000	348	11.5

HIGH TEMPERATURE STORAGE LIFE (HTSL)

Stress Duration: 1000 hours

Test Condition: 150°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP2303DN	C486631.9A	1232	02-06-13	46	0	
MP2303DN	C486631.9B	1234	02-06-13	45	0	
MP1412DH	C285403.7	1231	01-08-13	47	0	
MP1412DH	C285402.7	1233	01-08-13	50	0	
MP1412DH	C285402.7QB	1234	01-08-13	47	0	
Total					0	

3.2 BCM12S Process Technology

The data in the tables that follow was generated as the result of an on-going Process Reliability Monitor.

The specific fab locations included in this process monitor are:

HHNEC, ASMC,SMIC

EARLY LIFE (HTOL Short Term Monitor)

Stress Duration: 48 ~168 hours

Test Condition: Vccmax @ 125°C

Device	LOT#	D/C	Close Date	Sample Size	# of hrs	# of Fail	FA No.
MP28252EL	C346213.9AQ	1215	02-06-13	50	168	0	
MP28252EL	C346496.1E	1220	02-06-13	50	168	0	
MP28253EL	C486626.7	1247	02-06-13	79	168	0	
MP3388DR	C345910.1AL	1233	01-03-13	80	168	0	
MP3388DR	C345910.1AM	1233	01-03-13	80	168	0	
MP3388DR	C345910.1AH	1233	01-03-13	80	168	0	
MP3397EF	C772924.1A	1236	03-04-13	77	168	0	
MP1482DS-C165	C448499.8	1238	03-04-13	80	168	0	
MP38900DL	C988554.8	1246	02-20-13	78	168	0	
MPQ9361DJ	8390919.1BA	1247	02-07-13	80	48	0	
MPQ9361DJ	C586952.7	1252	02-06-13	80	48	0	
MP8736DL	CB89028.8	1302	03-27-13	80	48	0	
MP8736DL	C788102.8	1303	03-22-13	80	48	0	
MP8736DL	C988556.8	1302	03-29-13	80	48	0	
MP1482DS-C416	C64A284.8A	1250	02-27-13	80	48	0	
MP3389EF	CB89026.1	1303	02-27-13	80	48	0	
MPQ9361DJ	C586952.7BR	1252	02-27-13	80	48	0	

Device	LOT#	D/C	Close Date	Sample Size	# of hrs	# of Fail	FA No.
MP8736DL	CB89038.8	1303	03-28-13	80	48	0	
MP8705EN	CA4J877.9	1303	02-27-13	80	48	0	
MP3389EF	CB89064.1	1304	02-27-13	80	48	0	
MP8736DL	C888208.8	1302	03-20-13	80	48	0	
MP3389EF	CB4K681.1	1304	03-13-13	80	48	0	
MPQ28261DL	C285336.7Y	1228	03-22-13	80	48	0	
MP3389EF	CB4K688.1	1305	03-20-13	80	48	0	
MP28258DS	CC89253.8A	1308	03-13-13	80	48	0	
MP8125EF	C888406.7	1309	03-22-13	80	48	0	
MP28252EL	C64B393.9	1307	03-13-13	80	48	0	
MP3389EF	CB89138.1	1305	03-28-13	80	48	0	
MP8705EN	C74B817.9	1309	03-25-13	80	48	0	
MP3389EF-C355	CC4M105.9A	1310	03-28-13	80	48	0	
MP1495DJ	C872018.8	1302	02-27-13	80	48	0	
MP1495DJ	C872030.8	1305	02-27-13	80	48	0	
Total						0	

LONG TERM LIFE (HTOL Long Term Monitor) BCM12S

Stress Duration: 1000 hours

Test Condition: Vccmax @125°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP28258DS	H7G76302	1250	03-20-13	80	0	
MP8125EF	HP29007	1245	03-21-13	79	0	
Total					0	

BCM12S	#fail	#device hours	Accel Factor	FIT Rate
	0	159000	348	17

HIGH TEMPERATURE STORAGE LIFE (HTSL)

Stress Duration: 1000 hours

Test Condition: 150°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP28252EL	C346213.9AQ	1215	02-06-13	47	0	
MP28252EL	C346496.1E	1220	02-06-13	47	0	
MP3388DR	C345910.1AL	1233	01-03-13	45	0	
MP3388DR	C345910.1AM	1233	01-03-13	45	0	
MP3388DR	C345910.1AH	1233	01-03-13	45	0	
MP150GJ	EP252601	1238	01-23-13	50	0	
MP4700GS	C586922.1A	1247	02-06-13	50	0	
MP4700GS	C586922.1B	1246	02-06-13	50	0	

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP3397EF	C772924.1A	1236	03-04-13	50	0	
MP8125EF	HP29007	1245	03-21-13	50	0	
MP6922AGN	FA222077B	1217	03-20-13	45	0	
MP6922AGN	FA222077A-Q2A	1227	03-20-13	50	0	
MP6922AGN	FA222077A-Q2B	1229	03-20-13	50	0	
MP6910DZ	A998713.5	1240	03-08-13	50	0	
MP6920DN	A872708.9A	1242	03-20-13	49	0	
Total					0	

3.3 BCM35 Process Technology

The data in the tables that follow was generated as the result of an on-going Process Reliability Monitor.

The specific fab locations included in this process monitor are:

ASMC,SMIC

LONG TERM LIFE (HTOL Long Term Monitor) BCM35

Stress Duration: 1000 hours

Test Condition: Vccmax @125°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP7748SGF	HP274119	1244	01-11-13	78	0	
MP2635GR	HP2967	1229	01-25-13	95	0	
MP3398GS	HP306405	1238	01-25-13	86	0	
Total					0	

BCM35	#fail	#device hours	Accel Factor	FIT Rate
	0	259	348	10.6

HIGH TEMPERATURE STORAGE LIFE (HTSL) BCM35

Stress Duration: 1000 hours

Test Condition: 150°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP7748SGF	HP274119	1244	01-11-13	50	0	
MP2635GR	HP2967	1229	01-25-13	47	0	
MP2635GR	HP2967Q3	1237	01-25-13	47	0	
MP8845GC	HP272301	1212	01-25-13	50	0	
MPM3810GQB	HP300301-LOT1	1244	02-06-13	47	0	
MPM3810GQB	HP3003-LOT2	1248	02-06-13	50	0	
MP2122GJ	EP263102R1	1241	01-18-13	47	0	
MP3398GS	HP306405	1238	01-25-13	46	0	
MP7748SGF	HP274115	1236	03-04-13	50	0	

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP7748SGF	HP274113	1247	02-26-13	50	0	
Total					0	

3.4 BCM05 Process Technology

The data in the tables that follow was generated as the result of an on-going Process Reliability Monitor.

The specific fab locations included in this process monitor are:

ASMC,HHNEC

EARLY LIFE (HTOL Short Term Monitor) BCM05

Stress Duration: 48 ~168 hours

Test Condition: Vccmax @125°C

Device	LOT#	D/C	Close Date	Sample Size	# of hrs	# of Fail	FA No.
MP20043DGT	AC72657.1E	1304	03-01-13	80	48	0	
MP6400DJ-01	CB89119.1	1304	03-06-13	80	48	0	
Total						0	

LONG TERM LIFE (HTOL Long Term Monitor) BCM05

Stress Duration: 1000 hours

Test Condition: Vccmax @125°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP2130DG	EP272712	1244	01-25-13	80	0	
Total					0	

BCM05	#fail	#device hours	Accel Factor	FIT Rate
	0	80000	348	33

HIGH TEMPERATURE STORAGE LIFE (HTSL) BCM05

Stress Duration: 1000 hours

Test Condition: 150°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
MP20045DN	C482617.7	1225	02-06-13	47	0	
MP20045DN	B982447.7	1214	02-06-13	48	0	
MP2130DG	EP272712	1244	01-25-13	50	0	
Total					0	

3.5 BCM18 Process Technology

The data in the tables that follow was generated as the result of an on-going Process Reliability Monitor.

The specific fab locations included in this process monitor are:

SMIC

LONG TERM LIFE (HTOL Long Term Monitor) BCM18

Stress Duration: 1000 hours

Test Condition: Vccmax @125°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
NB669GQ	HP2884	1233	01-22-13	80	0	
Total					0	

BCM35	#fail	#device hours	Accel Factor	FIT Rate
	0	80000	348	33

HIGH TEMPERATURE STORAGE LIFE (HTSL) BCM18

Stress Duration: 1000 hours

Test Condition: 150°C

Device	LOT#	D/C	Close Date	Sample Size	# of Fail	FA No.
NB669GQ	HP2884	1233	01-22-13	47	0	
NB670LGQ	HP2992	1238	01-18-13	50	0	
NB669GQ	HP2884	1238	01-18-13	47	0	
NB675GL	HP302401	1241	02-27-13	50	0	
Total					0	

4.0 PACKAGE RELIABILITY MONITORING DATA

4.1 QFN

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor.

The specific assemblies included in this package monitor are:

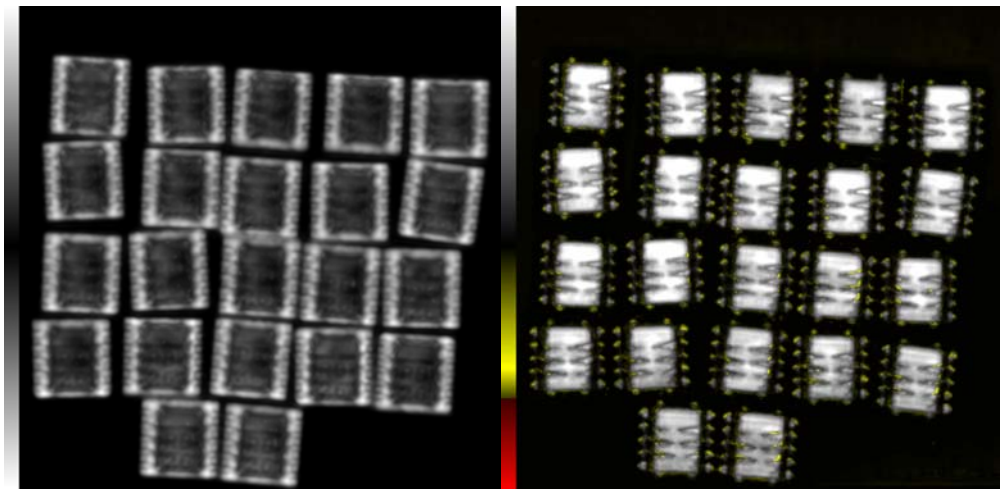
ASSY SITE	PACKAGE	ASSY SITE	PACKAGE
UCD	QFN2*2	ASAT	QFN2*2
UCD	QFN2*3	ASAT	QFN2*3
UCD	QFN3*3	ASAT	QFN3*3
UCD	QFN3*4	ASAT	QFN3*4
UCD	QFN4*4	ASAT	QFN4*4
UCD	QFN4*5	ASAT	QFN5*5
UCD	QFN5*5	ASAT	QFN7*7
UCD	QFN5*6	UTAC	QFN3*3
UCD	QFN6*6	JCET	QFN2*2
UCD	QFN7*7	JCET	QFN4*4

4.1.1 Preconditioning

MSL1: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/85%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MPQ28261DL	1217	01-03-13	45	0	
MPQ28261DL	1228	01-03-13	43	0	
MPQ28261DL	1228	01-03-13	45	0	
MPQ28261DL	1228	01-03-13	45	0	
MP6507GQ	1236	01-03-13	100	0	
MP2635GR	1227	01-09-13	100	0	
MP2635GR	1229	01-25-13	186	0	
MP2635GR	1237	01-25-13	180	0	
MP3388DR	1233	01-03-13	181	0	
MP3388DR	1233	01-03-13	181	0	
MP3388DR	1233	01-03-13	190	0	
MP3426DL	1235	01-18-13	95	0	
Total				0	

SAT picture of QFN



T-SCAN PICTURE C-SCAN PICTURE

4.1.2 Temperature Cycling

Stress Duration: 100~1000 cycles

Stress Conditions: Temperature cycling between -65°C to 150°C (Condition C)

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP28252EL	1215	02-06-13	47	0		1000
MP28252EL	1220	02-06-13	47	0		1000
MP6507GQ	1236	01-03-13	94	0		1000
MP2635GR	1227	01-09-13	48	0		1000
MP2635GR	1229	01-25-13	84	0		1000
MP2635GR	1237	01-25-13	84	0		1000
MP3388DR	1233	01-03-13	85	0		1000
MP3388DR	1233	01-03-13	85	0		1000
MP3388DR	1233	01-03-13	85	0		1000
MP1720DQ-216	1202	01-09-13	50	0		100
MP2611GL	1248	01-08-13	50	0		100
MP2611GL	1250	01-08-13	50	0		100
MP20045DQ-25	1251	01-10-13	50	0		100
MP2002DD	1251	01-11-13	50	0		100
MP2012DQ	1250	01-10-13	50	0		100
MP20046DN	1251	01-10-13	50	0		100
MP2303DQ	1252	01-14-13	50	0		100
MP2565DQ	1250	01-14-13	50	0		100
MP5000DQ	1238	01-15-13	50	0		100
MP5010DQ-C347	1250	01-15-13	50	0		100
MP38872DL	1251	01-18-13	50	0		100
MP2214DL	1248	01-18-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP2303DQ	1252	01-18-13	50	0		100
MP28127DQ	1301	01-18-13	50	0		100
MP2371DG	1252	01-18-13	50	0		100
MP4462DQ	1301	01-22-13	50	0		100
NB634EL	1238	01-22-13	50	0		100
MP28256EL	1246	01-22-13	50	0		100
NB600CQ	1249	01-22-13	50	0		100
MPQ4460DQ	1247	02-06-13	50	0		100
MP28114DG-1.8	1251	01-25-13	50	0		100
MP2360DG	1250	01-25-13	50	0		100
MP2361DQ	1250	01-25-13	50	0		100
MP2005DD	1251	01-29-13	50	0		100
MP20051DQ	1302	01-25-13	50	0		100
MPQ2483DQ1	1249	02-27-13	50	0		100
MP2012DQ	1241	01-29-13	50	0		100
MP38872DL	1302	01-29-13	50	0		100
NB600CQ	1249	01-29-13	50	0		100
MP2565DQ	1251	02-04-13	50	0		100
MP28127DQ	1251	01-31-13	50	0		100
MP2112DQ	1248	02-04-13	50	0		100
NB637EL	1238	01-31-13	50	0		100
MP2109DQ	1247	02-04-13	50	0		100
NB637EL	1238	02-04-13	50	0		100
MP38872DL	1303	02-04-13	50	0		100
MP9115DQT	1303	02-06-13	50	0		100
MP5000DQ-C266	1302	02-04-13	50	0		100
MP2209DL	1302	02-06-13	50	0		100
MP4560DQ	1250	02-06-13	50	0		100
MP2109DQ	1303	02-07-13	50	0		100
MP5000DQ	1304	02-27-13	50	0		100
MP5000DQ	1304	02-27-13	50	0		100
MP2303DQ	1303	02-27-13	50	0		100
MP3388DR	1302	02-27-13	50	0		100
MP2303DQ	1304	02-27-13	50	0		100
MP2303DQ	1303	02-27-13	50	0		100
MP8904DD	1252	02-27-13	50	0		100
MP3213DQ	1245	02-27-13	50	0		100
MP4460DQ	1303	02-27-13	50	0		100
MPQ4462DQ1	1242	03-06-13	50	0		100
MP2562DQ	1305	02-27-13	50	0		100
MP1720DQ	1306	03-01-13	50	0		100
MP2611GL	1301	03-01-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP2119DQ	1305	03-06-13	50	0		100
MP2452DD	1308	03-06-13	50	0		100
MPQ28261DL	1228	03-22-13	50	0		100
MP28256EL	1305	03-13-13	50	0		100
MP28254EL	1305	03-07-13	50	0		100
MP2121DQ-C236	1301	03-13-13	50	0		100
MP2209DL	1309	03-22-13	50	0		100
MP6900DQ	1309	03-20-13	50	0		100
MP2119DQ	1308	03-22-13	50	0		100
MP2108DQ	1306	03-20-13	50	0		100
MP4460DQ	1303	03-28-13	50	0		100
MP3388DR-C414	1309	03-25-13	50	0		100
MP2207DQ	1309	03-22-13	50	0		100
MP2120DQ	1305	03-22-13	50	0		100
MP2002DD	1304	03-22-13	50	0		100
NB634EL	1304	03-25-13	50	0		100
Total				0		

4.1.3 Autoclave test

Stress Duration: 48~168 hrs

Stress Conditions: 121℃,100%RH,29.7psia

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP28252EL	1215	02-06-13	47	0		168
MP28252EL	1220	02-06-13	47	0		168
MP2635GR	1227	01-09-13	49	0		168
MP2635GR	1229	01-25-13	90	0		168
MP2635GR	1237	01-25-13	90	0		168
MP3388DR	1233	01-03-13	90	0		168
MP3388DR	1233	01-03-13	90	0		168
MP3388DR	1233	01-03-13	90	0		168
MP1720DQ-216	1202	01-09-13	50	0		48
MP2611GL	1248	01-08-13	50	0		48
MP2611GL	1250	01-08-13	50	0		48
MP20045DQ-25	1251	01-10-13	50	0		48
MP2002DD	1251	01-11-13	50	0		48
MP2012DQ	1250	01-10-13	50	0		48
MP20046DN	1251	01-10-13	50	0		48
MP2303DQ	1252	01-14-13	50	0		48
MP2565DQ	1250	01-14-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP5000DQ	1238	01-15-13	50	0		48
MP5010DQ-C347	1250	01-15-13	50	0		48
MP38872DL	1251	01-18-13	50	0		48
MP2214DL	1248	01-18-13	50	0		48
MP2303DQ	1252	01-18-13	50	0		48
MP28127DQ	1301	01-18-13	50	0		48
MP2371DG	1252	01-18-13	50	0		48
MP4462DQ	1301	01-22-13	50	0		48
NB634EL	1238	01-22-13	50	0		48
MP28256EL	1246	01-22-13	50	0		48
NB600CQ	1249	01-22-13	50	0		48
MPQ4460DQ	1247	02-06-13	50	0		48
MP28114DG-1.8	1251	01-25-13	50	0		48
MP2360DG	1250	01-25-13	50	0		48
MP2361DQ	1250	01-25-13	50	0		48
MP2005DD	1251	01-29-13	50	0		48
MP20051DQ	1302	01-25-13	50	0		48
MPQ2483DQ1	1249	02-27-13	50	0		48
MP2012DQ	1241	01-29-13	50	0		48
MP38872DL	1302	01-29-13	50	0		48
NB600CQ	1249	01-29-13	50	0		48
MP2565DQ	1251	02-04-13	50	0		48
MP28127DQ	1251	01-31-13	50	0		48
MP2112DQ	1248	02-04-13	50	0		48
NB637EL	1238	01-31-13	50	0		48
MP2109DQ	1247	02-04-13	50	0		48
NB637EL	1238	02-04-13	50	0		48
MP38872DL	1303	02-04-13	50	0		48
MP9115DQT	1303	02-06-13	50	0		48
MP5000DQ-C266	1302	02-04-13	50	0		48
MP2209DL	1302	02-06-13	50	0		48
MP4560DQ	1250	02-06-13	50	0		48
MP2109DQ	1303	02-07-13	50	0		48
MP5000DQ	1304	02-27-13	50	0		48
MP5000DQ	1304	02-27-13	50	0		48
MP2303DQ	1303	02-27-13	50	0		48
MP3388DR	1302	02-27-13	50	0		48
MP2303DQ	1304	02-27-13	50	0		48
MP2303DQ	1303	02-27-13	50	0		48
MP8904DD	1252	02-27-13	50	0		48
MP3213DQ	1245	02-27-13	50	0		48
MP4460DQ	1303	02-27-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MPQ4462DQ1	1242	03-06-13	50	0		48
MP2562DQ	1305	02-27-13	50	0		48
MP1720DQ	1306	03-01-13	50	0		48
MP2611GL	1301	03-01-13	50	0		48
MP2119DQ	1305	03-06-13	50	0		48
MP2452DD	1308	03-06-13	50	0		48
MPQ28261DL	1228	03-22-13	50	0		48
MP28256EL	1305	03-13-13	50	0		48
MP28254EL	1305	03-07-13	50	0		48
MP2121DQ-C236	1301	03-13-13	50	0		48
MP2209DL	1309	03-22-13	50	0		48
MP6900DQ	1309	03-20-13	50	0		48
MP2119DQ	1308	03-22-13	50	0		48
MP2108DQ	1306	03-20-13	50	0		48
MP4460DQ	1303	03-28-13	50	0		48
MP3388DR-C414	1309	03-25-13	50	0		48
MP2207DQ	1309	03-22-13	50	0		48
MP2120DQ	1305	03-22-13	50	0		48
MP2002DD	1304	03-22-13	50	0		48
NB634EL	1304	03-25-13	50	0		48
Total				0		

4.1.4 HAST

Stress Duration: 96 hrs

Stress Conditions: 130℃,85%RH,33.3psia,96h,Vcc max;

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MPQ28261DL	1217	01-03-13	45	0	
MPQ28261DL	1228	01-03-13	43	0	
MPQ28261DL	1228	01-03-13	45	0	
MPQ28261DL	1228	01-03-13	45	0	
MP3426DL	1235	01-18-13	79	0	
MPQ28261DL	1228	03-22-13	45	0	
Total				0	

4.2 SOIC

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor.

The specific assemblies included in this package monitor are:

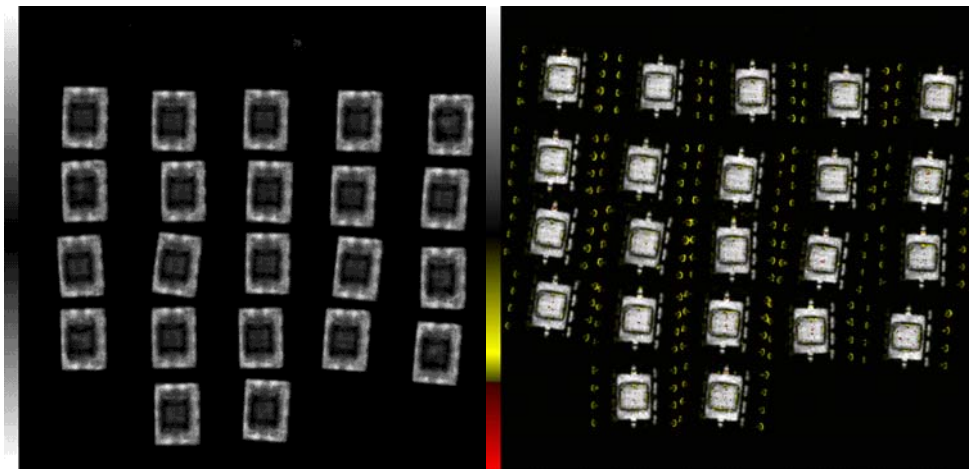
ASSY SITE	PACKAGE	ASSY SITE	PACKAGE
UCD	SOIC8	ANST	SOIC14
UCD	SOIC8-EP	ANST	SOIC16
ANST	SOIC8-7	ANST	SOIC20
ANST	SOIC8	ANST	SOIC28
ANST	SOIC8-EP	UTAC	SOIC8
UTAC	SOIC8-EP	JCET	SOIC8
JCET	SOIC8-EP	JCET	SOIC16
ASE-KS	SOIC8-EP	ASE-KS	SOIC8

4.2.1 Preconditioning

MSL2: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/60%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP3398GS	1238	01-25-13	360	0	
MP4700GS	1247	02-06-13	180	0	
MP4700GS	1246	02-06-13	180	0	
MP6922AGN	1217	03-20-13	180	0	
MP6922AGN	1227	03-20-13	180	0	
MP6922AGN	1229	03-20-13	180	0	
MP6922AGN	1217	03-20-13	100	0	
MP6922AGN	1227	03-20-13	100	0	
MP6922AGN	1229	03-20-13	100	0	
MP6920DN	1242	03-20-13	200	0	
Total				0	

SAT picture of SOIC



T-SCAN PICTURE C-SCAN PICTURE

4.2.2 Temperature Cycling

Stress Duration: 100~1000 cycles

Stress Conditions: Temperature cycling between -65°C to 150°C (Condition C)

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP20045DN	1225	02-06-13	52	0		1000
MP20045DN	1214	02-06-13	49	0		1000
MP2303DN	1232	02-06-13	57	0		1000
MP2303DN	1234	02-06-13	55	0		1000
MP4700GS	1247	02-06-13	87	0		1000
MP4700GS	1246	02-06-13	87	0		1000
MP6920DN	1242	03-20-13	94	0		1000
MP1484EN	1250	01-09-13	50	0		100
MP8718EN	1250	01-10-13	50	0		100
MP6001DN	1251	01-10-13	50	0		100
MP6205DN	1250	01-10-13	50	0		100
MP2307DN	1250	01-10-13	50	0		100
MP2482DN	1251	01-10-13	50	0		100
MP2482DN	1251	01-10-13	50	0		100
MP1482DS-C165	1251	01-10-13	50	0		100
MP1482DS-C165	1251	01-10-13	50	0		100
MP1482DS-C165	1251	01-10-13	50	0		100
MP1410ES-C019	1251	01-10-13	50	0		100
MP2305DS	1250	01-14-13	50	0		100
MP1482DS-C165	1250	01-11-13	50	0		100
CM3406DS	1252	01-14-13	50	0		100
MP1484EN	1251	01-14-13	50	0		100
MP1482DN	1250	01-14-13	50	0		100
MP2488DN	1251	01-14-13	50	0		100
MP9141ES	1251	01-15-13	50	0		100
MP8670DN	1251	01-15-13	50	0		100
MP1484EN	1251	01-15-13	50	0		100
MP2307DN	1252	01-15-13	50	0		100
MP2483DS	1226	02-07-13	50	0		100
MP2560DN-C413	1301	01-18-13	50	0		100
MP8709EN	1251	01-18-13	50	0		100
MP28313CS-C113	1251	01-18-13	50	0		100
MP8706EN	1246	01-18-13	50	0		100
MP8706EN-C247	1246	01-18-13	50	0		100
MP1482DS-C165	1250	01-18-13	50	0		100
MP3394ES	1250	01-22-13	50	0		100
MP1482DS-C165	1252	01-22-13	50	0		100
MP2207DN	1302	01-22-13	50	0		100
MP2307DN	1252	01-22-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP2307DN	1301	01-22-13	50	0		100
MP1484EN	1251	02-08-13	50	0		100
MP2372DN	1302	01-25-13	50	0		100
MP2301ENE	1302	01-25-13	50	0		100
MP1484EN-C166	1252	01-25-13	50	0		100
MP1484EN-C166	1250	01-25-13	50	0		100
MP44010HS	1302	01-29-13	50	0		100
MP1484EN-C166	1251	01-29-13	50	0		100
CM3406DS	1301	01-29-13	50	0		100
MP62061DN	1302	01-30-13	50	0		100
MP1593DN-C218	1224	01-30-13	50	0		100
MP1482DS-C165	1303	01-30-13	50	0		100
MP2467DN-C478	1303	01-29-13	50	0		100
MP1583DN	1302	01-31-13	50	0		100
MP1482DN	1302	01-31-13	50	0		100
MP62061DN	1303	01-31-13	50	0		100
MP2305DS	1301	02-04-13	50	0		100
MP2307DN	1302	01-31-13	50	0		100
MP1482DS-C165	1302	01-31-13	50	0		100
MP24830HS-C470L	1236	01-31-13	50	0		100
MP38894DN	1303	01-31-13	50	0		100
MP2488DN	1302	02-04-13	50	0		100
MP4560DN	1303	02-04-13	50	0		100
MP6212DN	1302	02-01-13	50	0		100
MP6231DN	1302	02-04-13	50	0		100
MP2307DN	1302	02-04-13	50	0		100
MP6205DN	1303	02-04-13	50	0		100
MP1482DN	1302	02-04-13	50	0		100
MP2307DN	1303	02-06-13	50	0		100
MP4051GS	1302	02-06-13	50	0		100
MP3394ES	1250	02-06-13	50	0		100
MP38892DN	1302	02-06-13	50	0		100
MP9141ES	1303	02-06-13	50	0		100
MP2480DN	1303	02-06-13	50	0		100
HF81GS	1303	02-06-13	50	0		100
MP4021GS-A	1303	02-06-13	50	0		100
MP4021GS-A	1303	02-07-13	50	0		100
MP1587EN	1304	02-07-13	50	0		100
MP2307DN	1304	02-07-13	50	0		100
MP6001DN	1303	02-07-13	50	0		100
MP8001DS	1251	02-07-13	50	0		100
MP2303ADN-C258	1303	02-07-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP4021GS	1303	02-27-13	50	0		100
MP8705EN	1302	02-27-13	50	0		100
MP200DS	1305	02-27-13	50	0		100
MP3394ES	1251	02-27-13	50	0		100
MP8705EN	1303	02-27-13	50	0		100
MP1484EN-C166	1304	02-27-13	50	0		100
MP1484EN-C166	1304	02-27-13	50	0		100
MP1484EN-C166	1304	02-27-13	50	0		100
MP8706EN	1303	02-27-13	50	0		100
MP2307DN	1303	02-27-13	50	0		100
MP1582EN	1306	03-13-13	50	0		100
MP2303ADN	1304	03-01-13	50	0		100
MP6001DN	1305	03-06-13	50	0		100
MP2358DS	1251	03-06-13	50	0		100
MP1583DN	1305	03-04-13	50	0		100
MP1482DN	1251	03-06-13	50	0		100
MP9141ES	1304	03-01-13	50	0		100
MP2303ADN	1304	03-01-13	50	0		100
MP1584ES	1305	03-06-13	50	0		100
MP8706EN	1305	03-01-13	50	0		100
MP1484EN-C321	1304	03-01-13	50	0		100
MP1484EN-C321	1304	03-01-13	50	0		100
MP20051DN	1304	03-06-13	50	0		100
MP1484EN	1305	03-01-13	50	0		100
MP1484EN	1305	03-06-13	50	0		100
MP3394ES-C462	1305	03-06-13	50	0		100
MP201DS	1305	03-06-13	50	0		100
MP1482DN	1305	03-13-13	50	0		100
MP8708EN	1304	03-13-13	50	0		100
MP1584EN-C461	1306	03-13-13	50	0		100
MP3394SGS	1304	03-13-13	50	0		100
MP1482DS-C165	1252	03-13-13	50	0		100
MP1482DS-C165	1304	03-13-13	50	0		100
MP1482DN	1308	03-13-13	50	0		100
MP8705EN	1304	03-07-13	50	0		100
MP1430DN	1305	03-13-13	50	0		100
MP8705EN	1309	03-07-13	50	0		100
MP1584EN	1308	03-13-13	50	0		100
MP28313DS	1210	03-07-13	50	0		100
MP1482DN	1306	03-13-13	50	0		100
MP1482DN	1308	03-13-13	50	0		100
MP8708EN-C353	1306	03-13-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1484EN	1305	03-07-13	50	0		100
MP1482DN	1308	03-13-13	50	0		100
MP1482DN	1308	03-07-13	50	0		100
MP2303ADN	1308	03-13-13	50	0		100
MP28313CS-C113	1309	03-13-13	50	0		100
MP1482DS-C165	1305	03-13-13	50	0		100
MP1484EN	1305	03-13-13	50	0		100
MP1482DN	1308	03-13-13	50	0		100
MP4034GS	1306	03-20-13	50	0		100
MP2372DN	1308	03-13-13	50	0		100
MP3394ES	1305	03-28-13	50	0		100
MP8705EN	1309	03-20-13	50	0		100
MP8706EN	1308	03-20-13	50	0		100
MP8709EN	1309	03-20-13	50	0		100
MP20045DN-C442	1250	03-22-13	50	0		100
MP1906DS	1308	03-20-13	50	0		100
MP6901DS	1249	03-20-13	50	0		100
MP2307DN	1303	03-28-13	50	0		100
MP1482DS-C165	1304	03-20-13	50	0		100
MP1482DN	1308	03-20-13	50	0		100
MP1484EN	1305	03-20-13	50	0		100
MP4462DN	1306	03-20-13	50	0		100
MP20045DN	1304	03-22-13	50	0		100
MP4462DN	1308	03-25-13	50	0		100
MP1484EN	1251	03-20-13	50	0		100
MP1482DN	1308	03-20-13	50	0		100
MP1484EN	1306	03-22-13	50	0		100
MP8705EN	1306	03-22-13	50	0		100
MP1587EN	1310	03-22-13	50	0		100
MP3394ES-C462	1307	03-25-13	50	0		100
MP1482DN	1309	03-28-13	50	0		100
MP1482DN	1309	03-28-13	50	0		100
MP9141ES	1308	03-25-13	50	0		100
MP1484EN-C166	1302	03-22-13	50	0		100
MP1484EN-C166	1302	03-28-13	50	0		100
MP1431DS-C106	1307	03-28-13	50	0		100
MP1484EN	1308	03-28-13	50	0		100
MP1584EN-C461	1310	03-28-13	50	0		100
MP1482DS-C165	1305	03-28-13	50	0		100
MP9141ES	1310	03-28-13	50	0		100
MP1484EN-C321	1311	03-28-13	50	0		100
MP1482DN	1309	03-28-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1482DN	1309	03-28-13	50	0		100
Total				0		

4.2.3 Autoclave test

Stress Duration: 48~168 hrs

Stress Conditions: 121℃,100%RH,29.7psia

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP20045DN	1225	02-06-13	47	0		168
MP20045DN	1214	02-06-13	47	0		168
MP2303DN	1232	02-06-13	47	0		168
MP2303DN	1234	02-06-13	47	0		168
MP3398GS	1238	01-25-13	89	0		168
MP4700GS	1247	02-06-13	87	0		168
MP4700GS	1246	02-06-13	87	0		168
MP6922AGN	1217	03-20-13	90	0		168
MP6922AGN	1227	03-20-13	90	0		168
MP6922AGN	1229	03-20-13	90	0		168
MP6920DN	1242	03-20-13	96	0		168
MP1484EN	1250	01-09-13	50	0		48
MP8718EN	1250	01-10-13	50	0		48
MP6001DN	1251	01-10-13	50	0		48
MP6205DN	1250	01-10-13	50	0		48
MP2307DN	1250	01-10-13	50	0		48
MP2482DN	1251	01-10-13	50	0		48
MP2482DN	1251	01-10-13	50	0		48
MP1482DS-C165	1251	01-10-13	50	0		48
MP1482DS-C165	1251	01-10-13	50	0		48
MP1482DS-C165	1251	01-10-13	50	0		48
MP1410ES-C019	1251	01-10-13	50	0		48
MP2305DS	1250	01-14-13	50	0		48
MP1482DS-C165	1250	01-11-13	50	0		48
CM3406DS	1252	01-14-13	50	0		48
MP1484EN	1251	01-14-13	50	0		48
MP1482DN	1250	01-14-13	50	0		48
MP2488DN	1251	01-14-13	50	0		48
MP9141ES	1251	01-15-13	50	0		48
MP8670DN	1251	01-15-13	50	0		48
MP1484EN	1251	01-15-13	50	0		48
MP2307DN	1252	01-15-13	50	0		48
MP2483DS	1226	02-07-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP2560DN-C413	1301	01-18-13	50	0		48
MP8709EN	1251	01-18-13	50	0		48
MP28313CS-C113	1251	01-18-13	50	0		48
MP8706EN	1246	01-18-13	50	0		48
MP8706EN-C247	1246	01-18-13	50	0		48
MP1482DS-C165	1250	01-18-13	50	0		48
MP3394ES	1250	01-22-13	50	0		48
MP1482DS-C165	1252	01-22-13	50	0		48
MP2207DN	1302	01-22-13	50	0		48
MP2307DN	1252	01-22-13	50	0		48
MP2307DN	1301	01-22-13	50	0		48
MP1484EN	1251	02-08-13	50	0		48
MP2372DN	1302	01-25-13	50	0		48
MP2301ENE	1302	01-25-13	50	0		48
MP1484EN-C166	1252	01-25-13	50	0		48
MP1484EN-C166	1250	01-25-13	50	0		48
MP44010HS	1302	01-29-13	50	0		48
MP1484EN-C166	1251	01-29-13	50	0		48
CM3406DS	1301	01-29-13	50	0		48
MP62061DN	1302	01-30-13	50	0		48
MP1593DN-C218	1224	01-30-13	50	0		48
MP1482DS-C165	1303	01-30-13	50	0		48
MP2467DN-C478	1303	01-29-13	50	0		48
MP1583DN	1302	01-31-13	50	0		48
MP1482DN	1302	01-31-13	50	0		48
MP62061DN	1303	01-31-13	50	0		48
MP2305DS	1301	02-04-13	50	0		48
MP2307DN	1302	01-31-13	50	0		48
MP1482DS-C165	1302	01-31-13	50	0		48
MP24830HS-C470L	1236	01-31-13	50	0		48
MP38894DN	1303	01-31-13	50	0		48
MP2488DN	1302	02-04-13	50	0		48
MP4560DN	1303	02-04-13	50	0		48
MP6212DN	1302	02-01-13	50	0		48
MP6231DN	1302	02-04-13	50	0		48
MP2307DN	1302	02-04-13	50	0		48
MP6205DN	1303	02-04-13	50	0		48
MP1482DN	1302	02-04-13	50	0		48
MP2307DN	1303	02-06-13	50	0		48
MP4051GS	1302	02-06-13	50	0		48
MP3394ES	1250	02-06-13	50	0		48
MP38892DN	1302	02-06-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP9141ES	1303	02-06-13	50	0		48
MP2480DN	1303	02-06-13	50	0		48
HF81GS	1303	02-06-13	50	0		48
MP4021GS-A	1303	02-06-13	50	0		48
MP4021GS-A	1303	02-07-13	50	0		48
MP1587EN	1304	02-07-13	50	0		48
MP2307DN	1304	02-07-13	50	0		48
MP6001DN	1303	02-07-13	50	0		48
MP8001DS	1251	02-07-13	50	0		48
MP2303ADN-C258	1303	02-07-13	50	0		48
MP4021GS	1303	02-27-13	50	0		48
MP8705EN	1302	02-27-13	50	0		48
MP200DS	1305	02-27-13	50	0		48
MP3394ES	1251	02-27-13	50	0		48
MP8705EN	1303	02-27-13	50	0		48
MP1484EN-C166	1304	02-27-13	50	0		48
MP1484EN-C166	1304	02-27-13	50	0		48
MP1484EN-C166	1304	02-27-13	50	0		48
MP8706EN	1303	02-27-13	50	0		48
MP2307DN	1303	02-27-13	50	0		48
MP1582EN	1306	03-13-13	50	0		48
MP2303ADN	1304	03-01-13	50	0		48
MP6001DN	1305	03-06-13	50	0		48
MP2358DS	1251	03-06-13	50	0		48
MP1583DN	1305	03-04-13	50	0		48
MP1482DN	1251	03-06-13	50	0		48
MP9141ES	1304	03-01-13	50	0		48
MP2303ADN	1304	03-01-13	50	0		48
MP1584ES	1305	03-06-13	50	0		48
MP8706EN	1305	03-01-13	50	0		48
MP1484EN-C321	1304	03-01-13	50	0		48
MP1484EN-C321	1304	03-01-13	50	0		48
MP20051DN	1304	03-06-13	50	0		48
MP1484EN	1305	03-01-13	50	0		48
MP1484EN	1305	03-06-13	50	0		48
MP3394ES-C462	1305	03-06-13	50	0		48
MP201DS	1305	03-06-13	50	0		48
MP1482DN	1305	03-13-13	50	0		48
MP8708EN	1304	03-13-13	50	0		48
MP1584EN-C461	1306	03-13-13	50	0		48
MP3394SGS	1304	03-13-13	50	0		48
MP1482DS-C165	1252	03-13-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP1482DS-C165	1304	03-13-13	50	0		48
MP1482DN	1308	03-13-13	50	0		48
MP8705EN	1304	03-07-13	50	0		48
MP1430DN	1305	03-13-13	50	0		48
MP8705EN	1309	03-07-13	50	0		48
MP1584EN	1308	03-13-13	50	0		48
MP28313DS	1210	03-07-13	50	0		48
MP1482DN	1306	03-13-13	50	0		48
MP1482DN	1308	03-13-13	50	0		48
MP8708EN-C353	1306	03-13-13	50	0		48
MP1484EN	1305	03-07-13	50	0		48
MP1482DN	1308	03-13-13	50	0		48
MP1482DN	1308	03-07-13	50	0		48
MP2303ADN	1308	03-13-13	50	0		48
MP28313CS-C113	1309	03-13-13	50	0		48
MP1482DS-C165	1305	03-13-13	50	0		48
MP1484EN	1305	03-13-13	50	0		48
MP1482DN	1308	03-13-13	50	0		48
MP4034GS	1306	03-20-13	50	0		48
MP2372DN	1308	03-13-13	50	0		48
MP3394ES	1305	03-28-13	50	0		48
MP8705EN	1309	03-20-13	50	0		48
MP8706EN	1308	03-20-13	50	0		48
MP8709EN	1309	03-20-13	50	0		48
MP20045DN-C442	1250	03-22-13	50	0		48
MP1906DS	1308	03-20-13	50	0		48
MP6901DS	1249	03-20-13	50	0		48
MP2307DN	1303	03-28-13	50	0		48
MP1482DS-C165	1304	03-20-13	50	0		48
MP1482DN	1308	03-20-13	50	0		48
MP1484EN	1305	03-20-13	50	0		48
MP4462DN	1306	03-20-13	50	0		48
MP20045DN	1304	03-22-13	50	0		48
MP4462DN	1308	03-25-13	50	0		48
MP1484EN	1251	03-20-13	50	0		48
MP1482DN	1308	03-20-13	50	0		48
MP1484EN	1306	03-22-13	50	0		48
MP8705EN	1306	03-22-13	50	0		48
MP1587EN	1310	03-22-13	50	0		48
MP3394ES-C462	1307	03-25-13	50	0		48
MP1482DN	1309	03-28-13	50	0		48
MP1482DN	1309	03-28-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP9141ES	1308	03-25-13	50	0		48
MP1484EN-C166	1302	03-22-13	50	0		48
MP1484EN-C166	1302	03-28-13	50	0		48
MP1431DS-C106	1307	03-28-13	50	0		48
MP1484EN	1308	03-28-13	50	0		48
MP1584EN-C461	1310	03-28-13	50	0		48
MP1482DS-C165	1305	03-28-13	50	0		48
MP9141ES	1310	03-28-13	50	0		48
MP1484EN-C321	1311	03-28-13	50	0		48
MP1482DN	1309	03-28-13	50	0		48
MP1482DN	1309	03-28-13	50	0		48
Total				0		

4.3 MSOP

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor.

The specific assemblies included in this package monitor are:

ASSY SITE	PACKAGE	ASSY SITE	PACKAGE
UCD	MSOP8	ANST	MSOP8-EP
UCD	MSOP10-EP	ANST	MSOP10
UCD	MSOP10	ANST	MSOP10-EP
ANST	MSOP8		

4.3.1 Preconditioning

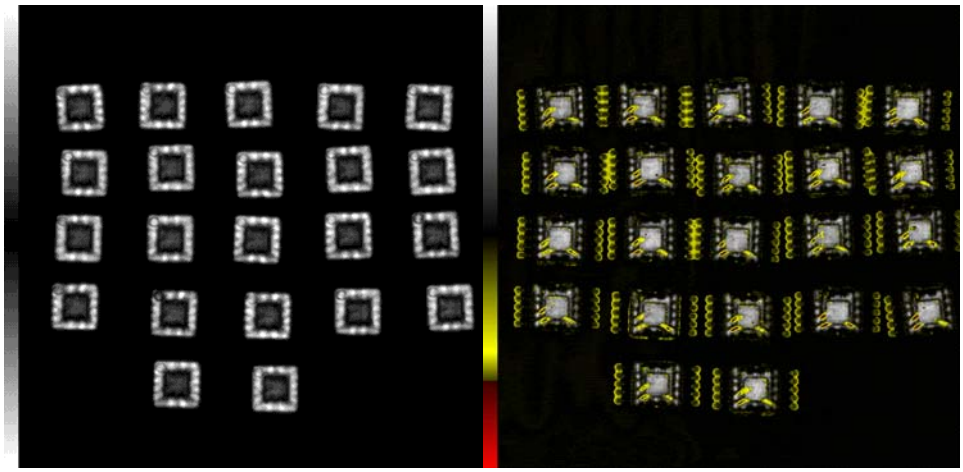
MSL1: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/85%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP3900DK	1245	01-18-13	168	0	
Total				0	

MSL2: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/60%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP1412DH	1231	01-08-13	260	0	
MP1412DH	1233	01-08-13	260	0	
MP1412DH	1234	01-08-13	260	0	
Total				0	

SAT picture of MSOP



T-SCAN PICTURE C-SCAN PICTURE

4.3.2 Temperature Cycling

Stress Duration: 100~1000 cycles

Stress Conditions: Temperature cycling between -65°C to 150°C (Condition C)

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1412DH	1231	01-08-13	84	0		1000
MP1412DH	1233	01-08-13	80	0		1000
MP1412DH	1234	01-08-13	84	0		1000
MP3900DK	1245	01-18-13	84	0		1000
MP1528DK	1251	01-08-13	50	0		100
MP1412DH	1250	01-09-13	50	0		100
MP2106DK	1250	01-10-13	50	0		100
MP1412DH	1250	01-10-13	50	0		100
MP2481DH	1249	01-10-13	50	0		100
MP6211DH	1250	01-14-13	50	0		100
MP2007DH	1250	01-14-13	50	0		100
MP2905EK	1239	01-18-13	50	0		100
MP1542DK-C472	1301	01-25-13	50	0		100
MP1412DH	1250	01-29-13	50	0		100
MP6232DH	1302	01-29-13	50	0		100
MP3213DH	1302	01-29-13	50	0		100
MP2106DK	1302	01-30-13	50	0		100
MP1412DH	1303	02-04-13	50	0		100
MP1412DH	1303	02-20-13	50	0		100
MP8110DK	1303	02-07-13	50	0		100
MP1412DH	1304	02-27-13	50	0		100
MP1412DH	1305	03-01-13	50	0		100
MP1412DH	1302	03-01-13	50	0		100
MP1411DH	1219	03-06-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1411DH	1219	03-07-13	50	0		100
MP6231DH	1306	03-01-13	50	0		100
MP1411DH	1219	03-13-13	50	0		100
MP2905EK-C402	1251	03-07-13	50	0		100
MP1411DH	1219	03-13-13	50	0		100
MP2361DK	1223	03-13-13	50	0		100
MP1542DK	1305	03-13-13	50	0		100
MP1411DH	1219	03-20-13	50	0		100
MP1542DK	1304	03-20-13	50	0		100
MP1411DH	1308	03-20-13	50	0		100
MP1411DH	1308	03-22-13	50	0		100
MP6211DH	1306	03-20-13	50	0		100
MP1542DK	1305	03-22-13	50	0		100
MP1567DK	1309	03-22-13	50	0		100
MP1412DH	1310	03-22-13	50	0		100
MP1412DH	1310	03-22-13	50	0		100
MP1412DH	1310	03-22-13	50	0		100
MP1412DH	1310	03-22-13	50	0		100
MP2106DK	1309	03-28-13	50	0		100
MP6215DH	1310	03-28-13	50	0		100
Total				0		

4.3.3 Autoclave test

Stress Duration: 48~168 hrs

Stress Conditions: 121℃,100%RH,29.7psia

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP1412DH	1231	01-08-13	90	0		168
MP1412DH	1233	01-08-13	90	0		168
MP1412DH	1234	01-08-13	87	0		168
MP3900DK	1245	01-18-13	87	0		168
MP1528DK	1251	01-08-13	50	0		48
MP1412DH	1250	01-09-13	50	0		48
MP2106DK	1250	01-10-13	50	0		48
MP1412DH	1250	01-10-13	50	0		48
MP2481DH	1249	01-10-13	50	0		48
MP6211DH	1250	01-14-13	50	0		48
MP2007DH	1250	01-14-13	50	0		48
MP2905EK	1239	01-18-13	50	0		48
MP1542DK-C472	1301	01-25-13	50	0		48
MP1412DH	1250	01-29-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP6232DH	1302	01-29-13	50	0		48
MP3213DH	1302	01-29-13	50	0		48
MP2106DK	1302	01-30-13	50	0		48
MP1412DH	1303	02-04-13	50	0		48
MP1412DH	1303	02-20-13	50	0		48
MP8110DK	1303	02-07-13	50	0		48
MP1412DH	1304	02-27-13	50	0		48
MP1412DH	1305	03-01-13	50	0		48
MP1412DH	1302	03-01-13	50	0		48
MP1411DH	1219	03-06-13	50	0		48
MP1411DH	1219	03-07-13	50	0		48
MP6231DH	1306	03-01-13	50	0		48
MP1411DH	1219	03-13-13	50	0		48
MP2905EK-C402	1251	03-07-13	50	0		48
MP1411DH	1219	03-13-13	50	0		48
MP2361DK	1223	03-13-13	50	0		48
MP1542DK	1305	03-13-13	50	0		48
MP1411DH	1219	03-20-13	50	0		48
MP1542DK	1304	03-20-13	50	0		48
MP1411DH	1308	03-20-13	50	0		48
MP1411DH	1308	03-22-13	50	0		48
MP6211DH	1306	03-20-13	50	0		48
MP1542DK	1305	03-22-13	50	0		48
MP1567DK	1309	03-22-13	50	0		48
MP1412DH	1310	03-22-13	50	0		48
MP1412DH	1310	03-22-13	50	0		48
MP1412DH	1310	03-22-13	50	0		48
MP1412DH	1310	03-22-13	50	0		48
MP2106DK	1309	03-28-13	50	0		48
MP6215DH	1310	03-28-13	50	0		48
Total				0		

4.3.4 HAST

Stress Duration: 96 hrs

Stress Conditions: 130℃,85%RH,33.3psia,96h,Vcc max;

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP1412DH	1231	01-08-13	80	0	
MP1412DH	1233	01-08-13	80	0	
Total				0	

4.4 TSOT

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor.

The specific assemblies included in this package monitor are:

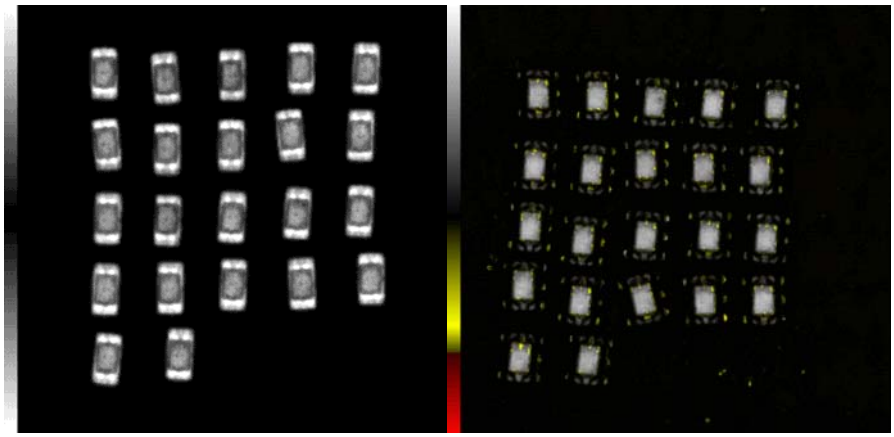
ASSY SITE	PACKAGE	ASSY SITE	PACKAGE
ANST	TSOT23-5	JCET	TSOT23-5
ASNT	TSOT23-6	JCET	TSOT23-6
ASNT	TSOT23-8	JCET	TSOT23-8

4.4.1 Preconditioning

MSL1: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/85%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MPQ9361DJ	1247	02-07-13	100	0	
MPQ9361DJ	1252	02-06-13	100	0	
MPQ9361DJ	1252	02-27-13	100	0	
Total				0	

SAT picture of TSOT



T-SCAN PICTURE C-SCAN PICTURE

4.4.2 Temperature Cycling

Stress Duration: 100~1000 cycles

Stress Conditions: Temperature cycling between -65°C to 150°C (Condition C)

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP3302DJ	1248	02-04-13	50	0		100
MP3410DJ	1248	01-09-13	50	0		100
MP1540DJ	1249	01-09-13	50	0		100
MP2359DJ	1248	01-08-13	50	0		100
MP1541DJ	1249	01-11-13	50	0		100
MP2105DJ	1246	01-10-13	50	0		100
MP3216DJ	1247	01-10-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP6400DJ-01	1249	01-11-13	50	0		100
MPQ9361DJ	1247	02-07-13	50	0		100
MP2359DJ	1252	01-18-13	50	0		100
MP1469GJ	1301	01-18-13	50	0		100
MP2016DJ	1233	01-25-13	50	0		100
MP2359DJ	1252	01-25-13	50	0		100
MP9361DJ	1252	01-25-13	50	0		100
MP3217DJ	1250	01-29-13	50	0		100
MP2104DJ	1252	01-29-13	50	0		100
MP3302DJ	1302	02-04-13	50	0		100
MPQ9361DJ	1252	02-06-13	50	0		100
MP3302DJ	1304	02-07-13	50	0		100
MP3302DJ	1302	02-27-13	50	0		100
MP20048DJ	1302	02-07-13	50	0		100
MP3217DJ	1303	03-06-13	50	0		100
MP6400DJ-01	1304	02-27-13	50	0		100
MP2259DJ	1249	02-27-13	50	0		100
MP2259DJ	1213	02-27-13	50	0		100
MP2370DJ	1303	02-27-13	50	0		100
MPQ9361DJ	1252	02-27-13	50	0		100
MP3217DJ	1304	03-13-13	50	0		100
MP3216DJ	1304	03-13-13	50	0		100
MP65151DJ	1306	03-13-13	50	0		100
MP3302DJ	1304	03-13-13	50	0		100
MP1518DJ	1308	03-13-13	50	0		100
MP6400DJ-01	1306	03-20-13	50	0		100
MP2370DJ	1309	03-25-13	50	0		100
MP3202DJ	1304	03-22-13	50	0		100
MP62551DJ	1310	03-28-13	50	0		100
Total				0		

4.4.3 Autoclave test

Stress Duration: 48~168 hrs

Stress Conditions: 121℃,100%RH,29.7psia

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP3302DJ	1248	02-04-13	50	0		48
MP3410DJ	1248	01-09-13	50	0		48
MP1540DJ	1249	01-09-13	50	0		48
MP2359DJ	1248	01-08-13	50	0		48
MP1541DJ	1249	01-11-13	50	0		48
MP2105DJ	1246	01-10-13	50	0		48
MP3216DJ	1247	01-10-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP6400DJ-01	1249	01-11-13	50	0		48
MPQ9361DJ	1247	02-07-13	50	0		48
MP2359DJ	1252	01-18-13	50	0		48
MP1469GJ	1301	01-18-13	50	0		48
MP2016DJ	1233	01-25-13	50	0		48
MP2359DJ	1252	01-25-13	50	0		48
MP9361DJ	1252	01-25-13	50	0		48
MP3217DJ	1250	01-29-13	50	0		48
MP2104DJ	1252	01-29-13	50	0		48
MP3302DJ	1302	02-04-13	50	0		48
MPQ9361DJ	1252	02-06-13	50	0		48
MP3302DJ	1304	02-07-13	50	0		48
MP3302DJ	1302	02-27-13	50	0		48
MP20048DJ	1302	02-07-13	50	0		48
MP3217DJ	1303	03-06-13	50	0		48
MP6400DJ-01	1304	02-27-13	50	0		48
MP2259DJ	1249	02-27-13	50	0		48
MP2259DJ	1213	02-27-13	50	0		48
MP2370DJ	1303	02-27-13	50	0		48
MPQ9361DJ	1252	02-27-13	50	0		48
MP3217DJ	1304	03-13-13	50	0		48
MP3216DJ	1304	03-13-13	50	0		48
MP65151DJ	1306	03-13-13	50	0		48
MP3302DJ	1304	03-13-13	50	0		48
MP1518DJ	1308	03-13-13	50	0		48
MP6400DJ-01	1306	03-20-13	50	0		48
MP2370DJ	1309	03-25-13	50	0		48
MP3202DJ	1304	03-22-13	50	0		48
MP62551DJ	1310	03-28-13	50	0		48
Total				0		

4.5 TSSOP

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor.

The specific assemblies included in this package monitor are:

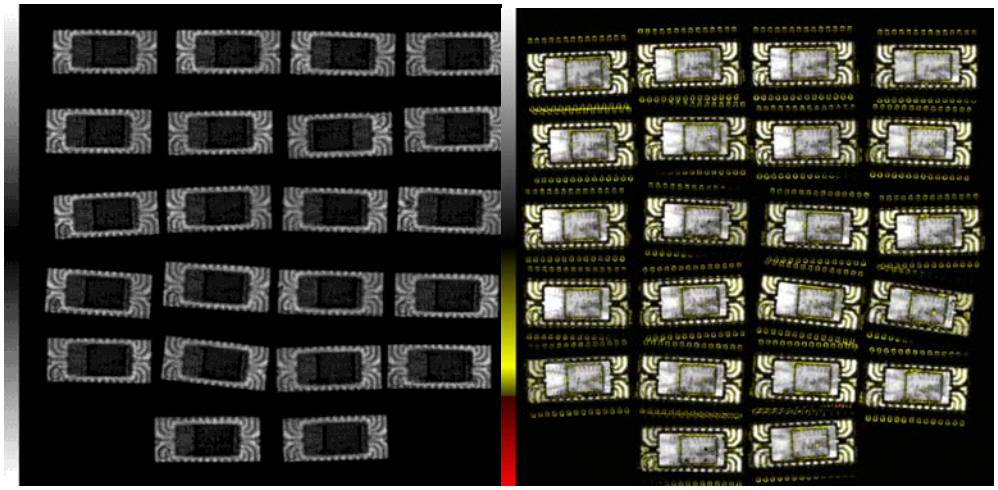
ASSY SITE	PACKAGE	ASSY SITE	PACKAGE
UCD	TSSOP20	ASNT	TSSOP16-EP
UCD	TSSOP20-EP	ASNT	TSSOP20
ASNT	TSSOP8	ASNT	TSSOP20-EP
ASNT	TSSOP14	ASNT	TSSOP24
ASNT	TSSOP16	ASNT	TSSOP28
ASNT	TSSOP28-EP	JCET	TSSOP8

4.5.1 Preconditioning

MSL2: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/60%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP7748SGF	1244	01-11-13	270	0	
MPQ2908GF	1237	03-04-13	90	0	
MP7748SGF	1236	03-04-13	160	0	
MP7748SGF	1247	02-26-13	359	0	
MP3397EF	1236	03-04-13	160	0	
MP8125EF	1245	03-21-13	360	0	
Total				0	

SAT picture of TSSOP



T-SCAN PICTURE C-SCAN PICTURE

4.5.2 Temperature Cycling

Stress Duration: 100~1000 cycles

Stress Conditions: Temperature cycling between -65°C to 150°C (Condition C)

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP7748SGF	1244	01-11-13	84	0		1000
MP7748SGF	1236	03-04-13	80	0		1000
MP7748SGF	1247	02-26-13	82	0		1000
MP3397EF	1236	03-04-13	80	0		1000
MP8125EF	1245	03-21-13	84	0		1000
MP8125EF	1248	01-08-13	50	0		100
MP3389EF	1242	01-10-13	50	0		100
MP3389EF	1247	01-10-13	50	0		100
MP3389EF	1247	01-10-13	50	0		100
MP1060EF	1250	01-18-13	50	0		100
MP3389EF	1250	01-18-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP3389EF	1250	01-18-13	50	0		100
MP3389EF	1252	01-18-13	50	0		100
MP8125EF	1249	01-30-13	50	0		100
MP3389EF	1302	01-31-13	50	0		100
MP1530DM	1251	02-04-13	50	0		100
MP3389EF	1302	02-07-13	50	0		100
MPQ7731DF	1248	02-27-13	50	0		100
MP1026EF	1247	02-27-13	50	0		100
MP3389EF	1304	02-27-13	50	0		100
MP2364DF	1305	03-07-13	50	0		100
MP8126DF	1251	03-06-13	50	0		100
MP3389EF	1304	03-01-13	50	0		100
MP3389EF	1304	03-01-13	50	0		100
MP3389EF	1305	03-13-13	50	0		100
MPQ7731DF	1308	03-20-13	50	0		100
MP3389EF	1242	03-20-13	50	0		100
MP3389EF	1305	03-20-13	50	0		100
MP3399EF	1308	03-20-13	50	0		100
Total				0		

4.5.3 Autoclave test

Stress Duration: 48~168 hrs

Stress Conditions: 121℃,100%RH,29.7psia

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP7748SGF	1244	01-11-13	87	0		168
MPQ2908GF	1237	03-04-13	87	0		168
MP7748SGF	1236	03-04-13	80	0		168
MP7748SGF	1247	02-26-13	87	0		168
MP3397EF	1236	03-04-13	80	0		168
MP8125EF	1245	03-21-13	87	0		168
MP8125EF	1248	01-08-13	50	0		48
MP3389EF	1242	01-10-13	50	0		48
MP3389EF	1247	01-10-13	50	0		48
MP3389EF	1247	01-10-13	50	0		48
MP1060EF	1250	01-18-13	50	0		48
MP3389EF	1250	01-18-13	50	0		48
MP3389EF	1250	01-18-13	50	0		48
MP3389EF	1252	01-18-13	50	0		48
MP8125EF	1249	01-30-13	50	0		48
MP3389EF	1302	01-31-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP1530DM	1251	02-04-13	50	0		48
MP3389EF	1302	02-07-13	50	0		48
MPQ7731DF	1248	02-27-13	50	0		48
MP1026EF	1247	02-27-13	50	0		48
MP3389EF	1304	02-27-13	50	0		48
MP2364DF	1305	03-07-13	50	0		48
MP8126DF	1251	03-06-13	50	0		48
MP3389EF	1304	03-01-13	50	0		48
MP3389EF	1304	03-01-13	50	0		48
MP3389EF	1305	03-13-13	50	0		48
MPQ7731DF	1308	03-20-13	50	0		48
MP3389EF	1242	03-20-13	50	0		48
MP3389EF	1305	03-20-13	50	0		48
MP3399EF	1308	03-20-13	50	0		48
Total				0		

4.3.4 HAST

Stress Duration: 96 hrs

Stress Conditions: 130℃,85%RH,33.3psia,96h,Vcc max;

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP8125EF	1245	03-21-13	81	0	
Total				0	

4.6 FLIP CHIP-QFN

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor.

The specific assemblies included in this package monitor are:

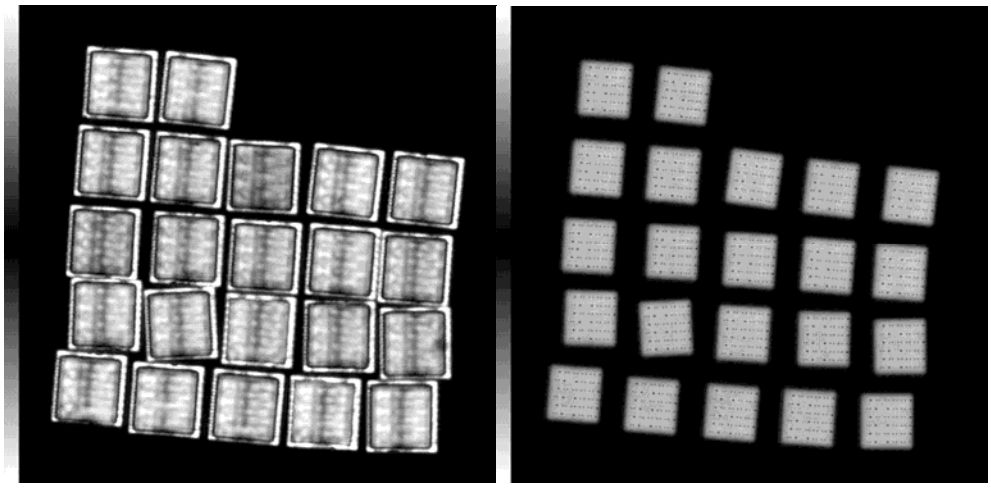
ASSY SITE	PACKAGE	ASSY SITE	PACKAGE
UCD	FCQFN1*1.5	UTAC	FCQFN2*2
UCD	FCQFN1.5*2	UTAC	FCQFN2*3
UCD	FCQFN2*2	UTAC	FCQFN3*3
UCD	FCQFN2*3	UTAC	FCQFN3*4
UCD	FCQFN3*3	UTAC	FCQFN4*4
UCD	FCQFN3*4	UTAC	FCQFN4*5
UCD	FCQFN3*5	UTAC	FCQFN4*6
UCD	FCQFN4*4	UTAC	FCQFN5*5
UCD	FCQFN4*5	UTAC	FCQFN5*6
UCD	FCQFN4*6	UTAC	FCQFN6*6

4.6.1 Preconditioning

MSL1: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/85%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP5021GQV	1202	01-03-13	80	0	
MP5021GQV	1242	01-03-13	204	0	
MP5505GL	1241	01-02-13	90	0	
MP5505GL	1246	01-25-13	180	0	
NB669GQ	1233	01-22-13	260	0	
NB669GQ	1233	01-22-13	96	0	
NB670GQ	1223	02-06-13	91	0	
MP2617GL	1243	01-18-13	180	0	
MPM3810GQB	1244	02-06-13	270	0	
MPM3810GQB	1248	02-06-13	280	0	
MPM3810GQB	1249	02-06-13	90	0	
MP2615GQ	1232	01-03-13	280	1	6225
NB670LGQ	1238	01-18-13	180	0	
NB669GQ	1238	01-18-13	180	0	
MP2130DG	1244	01-25-13	270	0	
NB675GL	1241	02-27-13	180	0	
MP86963DUT	1249	03-01-13	200	0	
MP86963DUT	1250	03-01-13	200	0	
MP86963DUT	1250	03-01-13	200	0	
MP9186GQ	1250	02-27-13	180	0	
MP1499GD	1303	03-06-13	183	0	
MP5505GL	1241	03-20-13	310	1	6508
MP8736DL	1234	03-20-13	100	0	
MP8736DL	1234	03-20-13	300	0	
MP8736DL	1234	03-20-13	100	0	
MP8736DL	1234	03-20-13	100	0	
Total				2	

SAT picture of FLIP CHIP-QFN



T-SCAN PICTURE C-SCAN PICTURE

4.6.2 Temperature Cycling

Stress Duration: 100~1000 cycles

Stress Conditions: Temperature cycling between -65°C to 150°C (Condition C)

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP8736DL	1245	01-09-13	94	0		1000
MP8736DL	1245	01-09-13	94	0		1000
MP8736DL	1245	01-09-13	94	0		1000
MP28258DD	1249	02-06-13	500	0		1000
MP28258DD	1249	02-06-13	500	0		1000
MP5021GQV	1242	01-03-13	90	0		1000
NB669GQ	1233	01-22-13	84	0		1000
MPM3810GQB	1244	02-06-13	84	0		1000
MPM3810GQB	1248	02-06-13	84	0		1000
MP2615GQ	1232	01-03-13	90	0		1000
NB670LGQ	1238	01-18-13	81	0		1000
NB669GQ	1238	01-18-13	84	0		1000
MP2130DG	1244	01-25-13	87	0		1000
MP8736DL	1248	01-23-13	94	0		1000
NB675GL	1241	02-27-13	84	0		1000
MP86963DUT	1249	03-01-13	94	0		1000
MP86963DUT	1250	03-01-13	94	0		1000
MP86963DUT	1250	03-01-13	94	0		1000
MP9186GQ	1250	02-27-13	80	0		1000
MP5505GL	1241	03-20-13	84	0		1000
MP8736DL	1234	03-20-13	90	0		1000
MP8736DL	1234	03-20-13	90	0		1000

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP8736DL	1234	03-20-13	90	0		1000
MP8736DL	1234	03-20-13	90	0		1000
MP8736DL	1242	01-08-13	100	0		100
MP8736DL	1248	01-08-13	100	0		100
MP8736DL	1245	01-08-13	100	0		100
MP8736DL	1250	01-08-13	100	0		100
MP8736DL	1249	01-08-13	100	0		100
MP2334DD	1251	01-08-13	50	0		100
MP28258DD	1250	01-08-13	100	0		100
MP28258DD	1251	01-08-13	100	0		100
MP28258DD-C471	1250	01-08-13	100	0		100
MP28258DD	1249	01-10-13	100	0		100
MP1499GD	1252	01-10-13	50	0		100
MP8736DL	1244	01-11-13	100	0		100
MP8736DL	1250	01-14-13	100	0		100
MP8736DL	1251	01-11-13	100	0		100
MP8736DL	1250	01-14-13	100	0		100
MP8736DL	1250	01-10-13	100	0		100
MP8606DL	1251	01-11-13	50	0		100
MP9180DG	1251	01-14-13	50	0		100
MP8761GL	1251	02-18-13	50	0		100
MP28258DD	1251	01-14-13	100	0		100
MP8736DL	1251	01-11-13	100	0		100
MP8736DL	1251	01-14-13	100	0		100
MP8736DL	1252	02-07-13	100	0		100
MP8736DL	1249	01-14-13	100	0		100
MP28251GD	1244	01-18-13	50	0		100
MP28258DD-A	1247	01-15-13	100	0		100
MP8736DL	1252	01-18-13	100	0		100
MP8736DL	1251	01-15-13	100	0		100
MP28251GD	1251	01-14-13	50	0		100
MP28251GD	1301	01-18-13	50	0		100
MP8736DL	1251	01-18-13	100	0		100
MP8736DL	1248	01-18-13	100	0		100
MP8736DL	1250	01-18-13	100	0		100
MP8736DL	1251	01-18-13	100	0		100
MP8736DL	1248	01-22-13	100	0		100
MP8736DL	1251	01-18-13	100	0		100
MP8736DL	1251	01-18-13	100	0		100
MP8736DL	1252	01-18-13	100	0		100
MP8736DL	1252	01-18-13	100	0		100
MP28258DD	1252	01-18-13	100	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP8736DL	1251	01-18-13	100	0		100
MP8736DL	1301	01-18-13	100	0		100
MP8736DL	1252	02-07-13	100	0		100
MP8736DL	1252	01-22-13	100	0		100
MP2130DG	1252	01-22-13	50	0		100
MP2130DG	1251	01-23-13	50	0		100
MP28258DD	1251	01-22-13	100	0		100
MP8736DL	1252	01-22-13	100	0		100
MP8736DL	1248	01-22-13	100	0		100
MP28258DD-C471	1301	01-22-13	100	0		100
MP8736DL	1251	01-22-13	100	0		100
MP8736DL	1252	01-22-13	100	0		100
MP8736DL	1250	01-22-13	100	0		100
MP2130DG	1250	01-22-13	50	0		100
MP28258DD	1252	01-22-13	100	0		100
MP8736DL	1301	01-25-13	100	0		100
MP8736DL	1250	01-25-13	100	0		100
MP8736DL	1301	01-25-13	100	0		100
MP8736DL	1248	01-25-13	100	0		100
MP8736DL	1301	01-25-13	100	0		100
MP28251GD	1301	01-25-13	50	0		100
MP8736DL	1250	01-25-13	100	0		100
MP8736DL	1250	01-25-13	100	0		100
MP8736DL	1250	01-25-13	100	0		100
MP28258DD-C471	1302	02-06-13	100	0		100
MP28251GD	1301	01-29-13	50	0		100
MP2162GQH	1302	01-30-13	50	0		100
MP8736DL	1301	01-29-13	100	0		100
MP8736DL	1301	01-29-13	100	0		100
MP8736DL	1250	01-29-13	100	0		100
MP8736DL	1250	01-29-13	100	0		100
MP5505GL	1303	01-30-13	50	0		100
MP2130DG	1303	01-29-13	50	0		100
MP28258DD-C471	1302	02-06-13	100	0		100
MP8620DQK	1250	01-29-13	100	0		100
MP8620DQK	1245	02-19-13	100	0		100
MP8620DQK	1245	01-30-13	100	0		100
MP28258DD-C471	1302	02-06-13	100	0		100
MP8736DL	1301	01-30-13	100	0		100
MP8736DL	1301	01-30-13	100	0		100
MP8736DL	1250	01-30-13	100	0		100
MP8736DL	1250	01-31-13	100	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP8736DL	1250	01-31-13	100	0		100
NB670GQ	1303	01-31-13	50	0		100
MP28258DD-C471	1302	02-04-13	50	0		100
MP2130DG	1303	02-04-13	50	0		100
MP8736DL	1250	01-31-13	100	0		100
MP8761GL	1302	01-31-13	50	0		100
MP8736DL	1303	02-04-13	100	0		100
MP28251GD	1303	01-31-13	50	0		100
MP8736DL	1303	02-04-13	100	0		100
MP8736DL	1301	01-31-13	100	0		100
MP28258DD	1302	02-04-13	100	0		100
MP8620DQK	1247	02-06-13	100	0		100
MP2334DD	1303	02-04-13	50	0		100
MP28258DD-C471	1302	02-04-13	100	0		100
MP8736DL	1250	02-04-13	50	0		100
MP8736DL	1250	02-06-13	50	0		100
NB6381DL	1221	02-04-13	50	0		100
MP2130DG	1303	02-06-13	50	0		100
MP28258DD-C471	1302	02-06-13	50	0		100
MP8736DL	1302	02-06-13	50	0		100
MP8736DL	1302	02-07-13	50	0		100
MP8736DL	1304	02-07-13	50	0		100
MP8736DL	1303	02-07-13	50	0		100
MP8736DL	1303	02-21-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1304	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1250	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1302	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP8736DL	1303	02-27-13	50	0		100
MP28258DD	1302	02-27-13	50	0		100
MP28258DD	1303	02-27-13	50	0		100
MP28258DD	1303	02-27-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP28258DD-C471	1303	02-22-13	50	0		100
MP28258DD-C471	1303	02-22-13	50	0		100
MP28258DD-C471	1302	02-27-13	50	0		100
MP8736DL	1302	02-27-13	50	0		100
MP8736DL	1304	02-27-13	50	0		100
MP28258DD-C471	1303	02-27-13	50	0		100
MP28258DD	1305	03-13-13	50	0		100
MP8736DL	1303	03-13-13	50	0		100
MP8736DL	1303	03-13-13	50	0		100
MP8736DL	1302	03-01-13	50	0		100
MP8736DL	1302	03-01-13	50	0		100
MP8736DL	1303	03-01-13	50	0		100
MP8736DL	1302	03-01-13	50	0		100
MP8736DL	1303	03-01-13	50	0		100
MP9152GD	1306	03-01-13	50	0		100
MP28258DD	1303	03-01-13	50	0		100
MP8736DL	1303	03-01-13	50	0		100
MP8736DL	1302	03-06-13	50	0		100
MP8736DL	1303	03-13-13	50	0		100
MP8736DL	1304	03-13-13	50	0		100
MP8736DL	1304	03-06-13	50	0		100
MP28258DD	1302	03-06-13	50	0		100
MP8736DL	1304	03-07-13	50	0		100
MP8736DL	1304	03-07-13	50	0		100
MP8736DL	1304	03-07-13	50	0		100
MP8736DL	1304	03-07-13	50	0		100
MP8736DL	1302	03-07-13	50	0		100
MP8736DL	1301	03-07-13	50	0		100
MP8736DL	1304	03-07-13	50	0		100
MP28258DD-A	1308	03-07-13	50	0		100
MP28258DD	1302	03-07-13	50	0		100
MP8736DL	1304	03-13-13	50	0		100
MP8736DL	1305	03-13-13	50	0		100
MP8736DL	1305	03-13-13	50	0		100
MP8736DL	1304	03-13-13	50	0		100
MP28258DD-C471	1303	03-13-13	50	0		100
MP2130DG	1303	03-19-13	50	0		100
MP8736DL	1305	03-13-13	50	0		100
MP8736DL	1305	03-20-13	50	0		100
MP8736DL	1305	03-20-13	50	0		100
MP8736DL	1305	03-20-13	50	0		100
MP8736DL	1304	03-20-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP8736DL	1305	03-20-13	50	0		100
MP8736DL	1303	03-20-13	50	0		100
MP9180DG	1307	03-19-13	50	0		100
MP9180DG	1305	03-19-13	50	0		100
NB6381DL	1222	03-29-13	50	0		100
MP1499GD	1308	03-20-13	50	0		100
MP8736DL	1306	03-20-13	50	0		100
MP8736DL	1306	03-20-13	50	0		100
MP2130DG	1304	03-22-13	50	0		100
MP8736DL	1306	03-22-13	50	0		100
MP8736DL	1306	03-22-13	50	0		100
MP8736DL	1306	03-22-13	50	0		100
MP28258DD-C471	1310	03-22-13	50	0		100
MP8736DL	1306	03-25-13	50	0		100
MP8736DL	1305	03-25-13	50	0		100
MP8736DL	1305	03-25-13	50	0		100
MP2130DG	1304	03-25-13	50	0		100
MP9152GD	1310	03-28-13	50	0		100
MP28258DD-C471	1310	03-22-13	50	0		100
MP8736DL	1307	03-25-13	50	0		100
MP8736DL	1306	03-25-13	50	0		100
MP8736DL	1305	03-25-13	50	0		100
MP28258DD	1303	03-28-13	50	0		100
MP8736DL	1306	03-28-13	50	0		100
MP8736DL	1309	03-28-13	50	0		100
MP8736DL	1305	03-28-13	50	0		100
MP8736DL	1309	03-28-13	50	0		100
MP8736DL	1307	03-28-13	50	0		100
MP8736DL	1307	03-28-13	50	0		100
MP28258DD	1303	03-28-13	50	0		100
Total				0		

4.6.3 Autoclave test

Stress Duration: 48~168 hrs

Stress Conditions: 121℃,100%RH,29.7psia

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP8736DL	1245	01-09-13	97	0		168
MP8736DL	1245	01-09-13	97	0		168
MP8736DL	1245	01-09-13	95	0		168
NB669GQ	1233	01-22-13	80	0		168
MPM3810GQB	1244	02-06-13	89	0		168

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MPM3810GQB	1248	02-06-13	87	0		168
MPM3810GQB	1249	02-06-13	80	0		168
MP2615GQ	1232	01-03-13	79	0		168
NB670LGQ	1238	01-18-13	90	0		168
NB669GQ	1238	01-18-13	90	0		168
MP2130DG	1244	01-25-13	90	0		168
MP8736DL	1248	01-23-13	97	0		168
NB675GL	1241	02-27-13	90	0		168
MP86963DUT	1249	03-01-13	95	0		168
MP86963DUT	1250	03-01-13	95	0		168
MP86963DUT	1250	03-01-13	95	0		168
MP9186GQ	1250	02-27-13	85	0		168
MP1499GD	1303	03-06-13	87	0		168
MP5505GL	1241	03-20-13	87	0		168
MP8736DL	1234	03-20-13	100	0		168
MP2334DD	1251	01-08-13	50	0		48
MP1499GD	1252	01-10-13	50	0		48
MP8606DL	1251	01-11-13	50	0		48
MP9180DG	1251	01-14-13	50	0		48
MP8761GL	1251	02-18-13	50	0		48
MP28251GD	1244	01-18-13	50	0		48
MP28251GD	1251	01-14-13	50	0		48
MP28251GD	1301	01-18-13	50	0		48
MP2130DG	1252	01-22-13	50	0		48
MP2130DG	1251	01-23-13	50	0		48
MP2130DG	1250	01-22-13	50	0		48
MP5505GL	1246	01-25-13	100	0		48
MP5505GL	1241	01-25-13	100	0		48
MP28251GD	1301	01-25-13	50	0		48
MP28258DD-C471	1302	02-06-13	50	0		48
MP28251GD	1301	01-29-13	50	0		48
MP2162GQH	1302	01-30-13	50	0		48
MP5505GL	1303	01-30-13	50	0		48
MP2130DG	1303	01-29-13	50	0		48
MP28258DD-C471	1302	02-06-13	50	0		48
NB670GQ	1303	01-31-13	50	0		48
MP28258DD-C471	1302	02-04-13	50	0		48
MP2130DG	1303	02-04-13	50	0		48
MP8761GL	1302	01-31-13	50	0		48
MP28251GD	1303	01-31-13	50	0		48
MP2334DD	1303	02-04-13	50	0		48
MP8736DL	1250	02-04-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP8736DL	1250	02-06-13	50	0		48
NB6381DL	1221	02-04-13	50	0		48
MP2130DG	1303	02-06-13	50	0		48
MP28258DD-C471	1302	02-06-13	50	0		48
MP8736DL	1302	02-06-13	50	0		48
MP8736DL	1302	02-07-13	50	0		48
MP8736DL	1304	02-07-13	50	0		48
MP8736DL	1303	02-07-13	50	0		48
MP8736DL	1303	02-21-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1304	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1250	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1302	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP8736DL	1303	02-27-13	50	0		48
MP28258DD	1302	02-27-13	50	0		48
MP28258DD	1303	02-27-13	50	0		48
MP28258DD	1303	02-27-13	50	0		48
MP28258DD-C471	1303	02-22-13	50	0		48
MP28258DD-C471	1303	02-22-13	50	0		48
MP28258DD-C471	1302	02-27-13	50	0		48
MP8736DL	1302	02-27-13	50	0		48
MP8736DL	1304	02-27-13	50	0		48
MP28258DD-C471	1303	02-27-13	50	0		48
MP28258DD	1305	03-13-13	50	0		48
MP8736DL	1303	03-13-13	50	0		48
MP8736DL	1303	03-13-13	50	0		48
MP8736DL	1302	03-01-13	50	0		48
MP8736DL	1302	03-01-13	50	0		48
MP8736DL	1303	03-01-13	50	0		48
MP8736DL	1302	03-01-13	50	0		48
MP8736DL	1303	03-01-13	50	0		48
MP9152GD	1306	03-01-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP28258DD	1303	03-01-13	50	0		48
MP8736DL	1303	03-01-13	50	0		48
MP8736DL	1302	03-06-13	50	0		48
MP8620DQK	1250	03-06-13	50	0		48
MP8736DL	1303	03-13-13	50	0		48
MP8736DL	1304	03-13-13	50	0		48
MP8736DL	1304	03-06-13	50	0		48
MP28258DD	1302	03-06-13	50	0		48
MP8620DQK	1247	03-13-13	50	0		48
MP8736DL	1304	03-07-13	50	0		48
MP8736DL	1304	03-07-13	50	0		48
MP8736DL	1304	03-07-13	50	0		48
MP8736DL	1304	03-07-13	50	0		48
MP8736DL	1302	03-07-13	50	0		48
MP8736DL	1301	03-07-13	50	0		48
MP8736DL	1304	03-07-13	50	0		48
MP28258DD-A	1308	03-07-13	50	0		48
MP28258DD	1302	03-07-13	50	0		48
MP8736DL	1304	03-13-13	50	0		48
MP8736DL	1305	03-13-13	50	0		48
MP8736DL	1305	03-13-13	50	0		48
MP8736DL	1304	03-13-13	50	0		48
MP28258DD-C471	1303	03-13-13	50	0		48
MP2130DG	1303	03-19-13	50	0		48
MP8736DL	1305	03-13-13	50	0		48
MP8736DL	1305	03-20-13	50	0		48
MP8736DL	1305	03-20-13	50	0		48
MP8736DL	1305	03-20-13	50	0		48
MP8736DL	1304	03-20-13	50	0		48
MP8736DL	1305	03-20-13	50	0		48
MP8736DL	1303	03-20-13	50	0		48
MP9180DG	1307	03-19-13	50	0		48
MP9180DG	1305	03-19-13	50	0		48
NB6381DL	1222	03-29-13	50	0		48
MP1499GD	1308	03-20-13	50	0		48
MP8736DL	1306	03-20-13	50	0		48
MP8736DL	1306	03-20-13	50	0		48
MP2130DG	1304	03-22-13	50	0		48
MP8736DL	1306	03-22-13	50	0		48
MP8736DL	1306	03-22-13	50	0		48
MP8736DL	1306	03-22-13	50	0		48
MP28258DD-C471	1310	03-22-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP8736DL	1306	03-25-13	50	0		48
MP8736DL	1305	03-25-13	50	0		48
MP8736DL	1305	03-25-13	50	0		48
MP2130DG	1304	03-25-13	50	0		48
MP9152GD	1310	03-28-13	50	0		48
MP28258DD-C471	1310	03-22-13	50	0		48
MP8736DL	1307	03-25-13	50	0		48
MP8736DL	1306	03-25-13	50	0		48
MP8736DL	1305	03-25-13	50	0		48
MP28258DD	1303	03-28-13	50	0		48
MP8736DL	1306	03-28-13	50	0		48
MP8736DL	1309	03-28-13	50	0		48
MP8736DL	1305	03-28-13	50	0		48
MP8736DL	1309	03-28-13	50	0		48
MP8736DL	1307	03-28-13	50	0		48
MP8736DL	1307	03-28-13	50	0		48
MP28258DD	1303	03-28-13	50	0		48
Total				0		

4.6.4 HAST

Stress Duration: 96 hrs

Stress Conditions: 130℃,85%RH,33.3psia,96h,Vcc max;

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP8736DL	1234	03-20-13	80	0	
Total				0	

4.7 FLIP CHIP-SOIC

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor.

The specific assemblies included in this package monitor are:

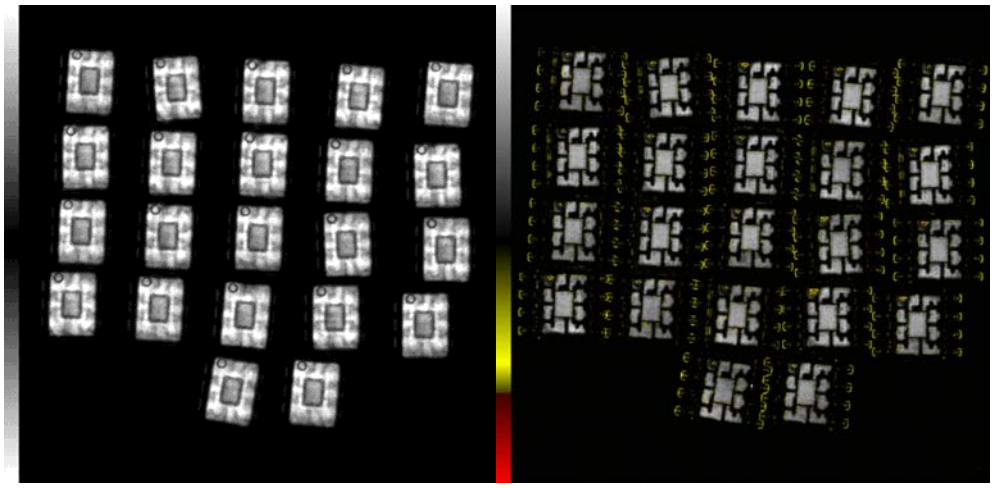
ASSY SITE	PACKAGE	ASSY SITE	PACKAGE
UCD	FCSOIC8	ANST	FCSOIC8
JCET	FCSOIC8	ANST	FCSOIC16
JCAP	FCSOIC8		

4.7.1 Preconditioning

MSL1: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/85%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP1482DS-C165	1238	03-04-13	915	0	

SAT picture of FLIP CHIP-SOIC



T-SCAN PICTURE C-SCAN PICTURE

4.7.2 Temperature Cycling

Stress Duration: 100~1000 cycles

Stress Conditions: Temperature cycling between -65°C to 150°C (Condition C)

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1482DS	1242	01-25-13	500	0		1000
MP1482DS	1242	01-25-13	500	0		1000
MP1482DS	1242	02-07-13	500	0		1000
MP1482DS-C165	1247	02-06-13	500	0		1000
MP1482DS-C165	1247	02-06-13	500	0		1000
MP1482DS-C165	1247	02-06-13	500	0		1000
MP1482DS-C165	1247	02-19-13	500	0		1000
MP1482DS-C165	1247	02-19-13	500	0		1000
MP1482DS-C165	1238	03-04-13	400	0		1000
MP1482DS	1252	03-20-13	500	0		1000
MP1482DS	1252	03-20-13	500	0		1000
MP1482DS	1252	03-20-13	500	0		1000
MP1482DS	1248	01-09-13	50	0		100
MP1482DS	1249	01-15-13	50	0		100
MP1482DS	1252	01-22-13	50	0		100
MP1482DS	1218	01-18-13	50	0		100
MP1482DS	1251	01-22-13	50	0		100
MP1482DS	1218	01-22-13	50	0		100
MP1493DS-C456	1252	01-22-13	50	0		100
MP1482DS	1252	01-22-13	50	0		100
MP1482DS	1252	01-22-13	50	0		100
MP1482DS	1301	01-25-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1482DS	1252	02-27-13	50	0		100
MP1482DS	1301	01-25-13	50	0		100
MP1482DS	1301	01-29-13	50	0		100
MP1482DS	1302	03-13-13	50	0		100
MP1482DS	1302	03-13-13	50	0		100
MP1482DS	1304	03-20-13	50	0		100
MP1482DS	1301	02-27-13	50	0		100
MP1482DS	1302	03-13-13	50	0		100
MP1482DS	1301	03-22-13	50	0		100
MP1493DS-C493	1252	03-06-13	50	0		100
MP1482DS	1306	03-01-13	50	0		100
MP28258DS	1305	03-06-13	50	0		100
MP1482DS	1302	03-28-13	50	0		100
MP1493DS	1306	03-13-13	50	0		100
MP1493DS	1306	03-13-13	50	0		100
MP1493DS	1250	03-20-13	50	0		100
MP1493DS	1308	03-20-13	50	0		100
MP1492DS	1308	03-20-13	50	0		100
MP1493DS-A	1251	03-22-13	50	0		100
MP1492DS	1306	03-22-13	50	0		100
MP1482DS	1226	03-28-13	50	0		100
MP1482DS	1309	03-28-13	50	0		100
MP1482DS	1224	03-28-13	50	0		100
MP1482DS	1310	03-28-13	50	0		100
MP1482DS	1305	03-28-13	50	0		100
Total				0		

4.7.3 Autoclave test

Stress Duration: 48~168 hrs

Stress Conditions: 121℃,100%RH,29.7psia

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP1482DS	1242	01-25-13	500	0		168
MP1482DS	1242	01-25-13	500	0		168
MP1482DS	1242	02-07-13	500	0		168
MP1482DS-C165	1247	02-06-13	500	0		168
MP1482DS-C165	1247	02-06-13	500	0		168
MP1482DS-C165	1247	02-06-13	500	0		168
MP1482DS-C165	1247	02-19-13	500	0		168
MP1482DS-C165	1247	02-19-13	500	0		168
MP1482DS-C165	1238	03-04-13	400	0		168
MP1482DS	1252	03-20-13	500	0		168

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP1482DS	1252	03-20-13	500	0		168
MP1482DS	1252	03-20-13	500	0		168
MP1482DS	1248	01-09-13	50	0		48
MP1482DS	1249	01-15-13	50	0		48
MP1482DS	1252	01-22-13	50	0		48
MP1482DS	1218	01-18-13	50	0		48
MP1482DS	1251	01-22-13	50	0		48
MP1482DS	1218	01-22-13	50	0		48
MP1493DS-C456	1252	01-22-13	50	0		48
MP1482DS	1252	01-22-13	50	0		48
MP1482DS	1252	01-22-13	50	0		48
MP1482DS	1301	01-25-13	50	0		48
MP1482DS	1252	02-27-13	50	0		48
MP1482DS	1301	01-25-13	50	0		48
MP1482DS	1301	01-29-13	50	0		48
MP1482DS	1302	03-13-13	50	0		48
MP1482DS	1302	03-13-13	50	0		48
MP1482DS	1304	03-20-13	50	0		48
MP1482DS	1301	02-27-13	50	0		48
MP1482DS	1302	03-13-13	50	0		48
MP1482DS	1301	03-22-13	50	0		48
MP1493DS-C493	1252	03-06-13	50	0		48
MP1482DS	1306	03-01-13	50	0		48
MP28258DS	1305	03-06-13	50	0		48
MP1482DS	1302	03-28-13	50	0		48
MP1493DS	1306	03-13-13	50	0		48
MP1493DS	1306	03-13-13	50	0		48
MP1493DS	1250	03-20-13	50	0		48
MP1493DS	1308	03-20-13	50	0		48
MP1492DS	1308	03-20-13	50	0		48
MP1493DS-A	1251	03-22-13	50	0		48
MP1492DS	1306	03-22-13	50	0		48
MP1482DS	1226	03-28-13	50	0		48
MP1482DS	1309	03-28-13	50	0		48
MP1482DS	1224	03-28-13	50	0		48
MP1482DS	1310	03-28-13	50	0		48
MP1482DS	1305	03-28-13	50	0		48
Total				0		

4.8 FLIP CHIP-TSOT

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor.

The specific assemblies included in this package monitor are:

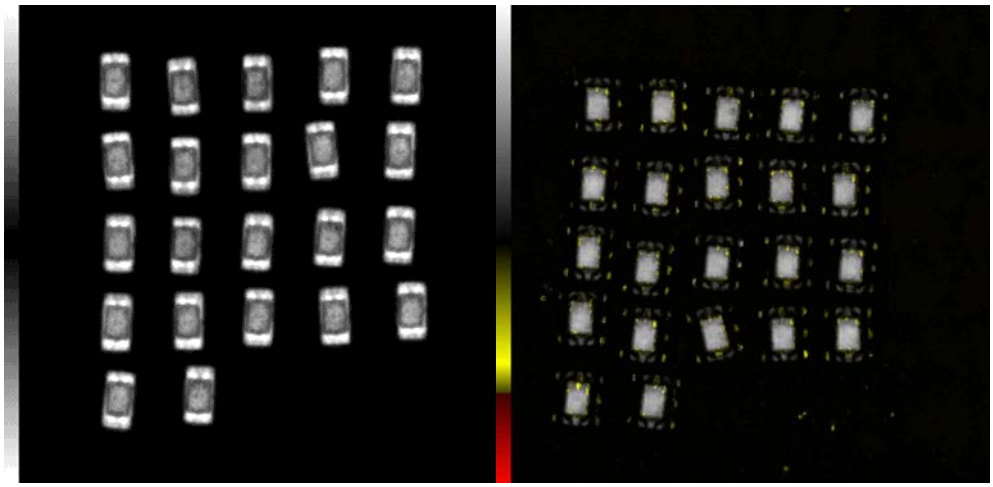
ASSY SITE	PACKAGE	ASSY SITE	PACKAGE
ANST	FCTSOT-5	JCET	FCTSOT-6
ANST	FCTSOT-6	JCET	FCTSOT-8
ANST	FCTSOT-8		

4.8.1 Preconditioning

MSL1: Including t0 test, SAT check, 24 hours bake @ 125°C, Moisture Soak (85°C/85%RH,168hours), @260°C Reflow Simulation(3 times), SAT check and Final test

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.
MP150GJ	1238	01-23-13	180	0	
MP3221GJ	1241	01-02-13	260	0	
MP1470GJ	1251	03-04-13	209	0	
Total				0	

SAT picture of FLIP CHIP-TSOT



T-SCAN PICTURE C-SCAN PICTURE

4.8.2 Temperature Cycling

Stress Duration: 100~1000 cycles

Stress Conditions: Temperature cycling between -65°C to 150°C (Condition C)

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP150GJ	1238	01-23-13	84	0		1000
MP3221GJ	1241	01-02-13	84	0		1000
MP1470GJ	1251	03-04-13	84	0		1000
MP1497DJ	1250	01-08-13	100	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1497DJ	1250	01-08-13	100	0		100
MP1472GJ-C452	1248	01-08-13	100	0		100
MP1472GJ-C452	1248	01-08-13	100	0		100
MP1495DJ	1250	01-11-13	50	0		100
MP1472GJ-C452	1249	01-14-13	100	0		100
MP1472GJ-C452	1248	01-10-13	100	0		100
MP1496DJ	1251	01-14-13	50	0		100
MP1470GJ	1248	01-14-13	50	0		100
MP1472GJ-C452	1249	01-14-13	100	0		100
MP1472GJ-C452	1249	01-14-13	100	0		100
MP1494DJ	1250	01-15-13	50	0		100
MP1494DJ	1252	01-18-13	50	0		100
MP2143GJ	1251	01-18-13	50	0		100
MP1497DJ	1301	01-18-13	100	0		100
MP1494DJ	1252	01-22-13	50	0		100
MP155GJ	1302	02-07-13	50	0		100
MP2161GJ	1302	01-25-13	50	0		100
MP2161GJ-C499	1302	01-29-13	50	0		100
MP2161GJ	1302	01-29-13	50	0		100
MP1470GJ	1302	01-30-13	50	0		100
MP1471GJ	1303	02-04-13	50	0		100
MP1497DJ	1252	01-31-13	100	0		100
MP1472GJ	1234	02-04-13	100	0		100
MP1472GJ	1236	01-31-13	100	0		100
MP1472GJ	1229	01-31-13	100	0		100
MP1472GJ-C452	1249	01-31-13	100	0		100
MP1472GJ	1230	02-04-13	100	0		100
MP1472GJ-C452	1250	02-06-13	50	0		100
MP1472GJ-C452	1249	02-06-13	50	0		100
MP1497DJ	1304	02-06-13	50	0		100
MP1472GJ-C452	1252	02-06-13	50	0		100
MP1494DJ	1302	02-07-13	50	0		100
MP1494DJ	1252	02-07-13	50	0		100
MP1470GJ	1302	02-07-13	50	0		100
MP1472GJ	1234	02-07-13	50	0		100
MP1472GJ-C452	1249	02-07-13	50	0		100
MP1472GJ-C452	1249	02-07-13	50	0		100
MP1472GJ-C452	1249	02-07-13	50	0		100
MP1495DJ	1302	02-27-13	50	0		100
MP1496DJ	1304	02-07-13	50	0		100
MP1497DJ	1304	02-07-13	50	0		100
MP3414DJ	1301	02-27-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1472GJ	1249	02-27-13	50	0		100
MP1472GJ	1302	02-27-13	50	0		100
MP1472GJ	1302	02-27-13	50	0		100
MP1472GJ	1247	02-27-13	50	0		100
MP1472GJ	1248	02-27-13	50	0		100
MP1472GJ	1302	02-27-13	50	0		100
MP1472GJ	1302	02-27-13	50	0		100
MP1472GJ-C452	1249	02-27-13	50	0		100
MP1472GJ-C452	1249	02-27-13	50	0		100
MP1472GJ-C452	1249	02-27-13	50	0		100
MP1494DJ	1302	02-27-13	50	0		100
MP1497DJ	1252	02-27-13	50	0		100
MP1497DJ	1304	02-27-13	50	0		100
MP1497DJ	1304	02-27-13	50	0		100
MP1472GJ	1302	02-27-13	50	0		100
MP1496DJ	1305	02-27-13	50	0		100
MP1497DJ	1305	02-27-13	50	0		100
MP1472GJ	1302	03-13-13	50	0		100
MP1472GJ-C452	1249	03-28-13	50	0		100
MP1472GJ-C452	1249	03-13-13	50	0		100
MP1497DJ	1305	03-20-13	50	0		100
MP2489DJ	1305	03-06-13	50	0		100
MP1472GJ	1248	03-01-13	50	0		100
MP1472GJ	1302	03-01-13	50	0		100
MP1494DJ	1306	03-01-13	50	0		100
MP1494DJ	1252	03-01-13	50	0		100
MP1472GJ	1249	03-01-13	50	0		100
MP1497DJ	1305	03-01-13	50	0		100
MP1472GJ	1302	03-06-13	50	0		100
MP1497DJ	1306	03-20-13	50	0		100
MP150GJ	1305	03-22-13	50	0		100
MP1494DJ	1306	03-07-13	50	0		100
MP1471GJ	1306	03-13-13	50	0		100
MP1472GJ	1302	03-13-13	50	0		100
MP1472GJ-C452	1303	03-13-13	50	0		100
MP1472GJ-C452	1251	03-13-13	50	0		100
MP2143DJ	1304	03-13-13	50	0		100
MP1494DJ	1305	03-13-13	50	0		100
MP1472GJ-C452	1251	03-13-13	50	0		100
MP1497DJ	1306	03-13-13	50	0		100
MP1472GJ-C452	1252	03-13-13	50	0		100
MP1494DJ	1302	03-13-13	50	0		100

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of cycle
MP1472GJ-C452	1303	03-20-13	50	0		100
MP1497DJ	1308	03-20-13	50	0		100
MP1494DJ	1252	03-20-13	50	0		100
MP1497DJ	1309	03-20-13	50	0		100
MP1472GJ-C452	1306	03-20-13	50	0		100
MP1472GJ-C452	1307	03-20-13	50	0		100
MP1472GJ	1248	03-20-13	50	0		100
MP1497DJ	1306	03-20-13	50	0		100
MP1494DJ	1309	03-20-13	50	0		100
MP1495DJ	1306	03-20-13	50	0		100
MP1472GJ-C452	1307	03-20-13	50	0		100
MP1472GJ-C452	1307	03-20-13	50	0		100
MP1472GJ	1248	03-22-13	50	0		100
MP1472GJ	1249	03-22-13	50	0		100
MP1472GJ	1247	03-28-13	50	0		100
MP1472GJ-C452	1309	03-28-13	50	0		100
MP1472GJ-C452	1307	03-28-13	50	0		100
MP1494DJ	1309	03-28-13	50	0		100
MP1495DJ	1309	03-28-13	50	0		100
MP1496DJ	1310	03-28-13	50	0		100
MP1497DJ	1309	03-28-13	50	0		100
MP1497DJ	1309	03-25-13	50	0		100
MP2159GJ	1307	03-28-13	50	0		100
MP1472GJ	1252	03-28-13	50	0		100
MP1472GJ-C452	1306	03-28-13	50	0		100
MP1472GJ-C452	1307	03-28-13	50	0		100
MP2489DJ	1251	03-28-13	50	0		100
MP1498DJ	1307	03-28-13	250	0		100
MP1472GJ-C452	1309	03-28-13	50	0		100
MP1472GJ-C452	1307	03-28-13	50	0		100
MP1472GJ-C452	1307	03-28-13	50	0		100
Total				0		

4.8.3 Autoclave test

Stress Duration: 48~168 hrs

Stress Conditions: 121℃,100%RH,29.7psia

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP150GJ	1238	01-23-13	89	0		168
MP3221GJ	1241	01-02-13	80	0		168
MP1470GJ	1251	03-04-13	87	0		168
MP1495DJ	1250	01-11-13	50	0		48
MP1496DJ	1251	01-14-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP1470GJ	1248	01-14-13	50	0		48
MP1494DJ	1250	01-15-13	50	0		48
MP1494DJ	1252	01-18-13	50	0		48
MP2143GJ	1251	01-18-13	50	0		48
MP1494DJ	1252	01-22-13	50	0		48
MP155GJ	1302	02-07-13	50	1	6514	48
MP2161GJ	1302	01-25-13	50	0		48
MP2161GJ-C499	1302	01-29-13	50	0		48
MP2161GJ	1302	01-29-13	50	0		48
MP1470GJ	1302	01-30-13	50	0		48
MP1471GJ	1303	02-04-13	50	0		48
MP1472GJ-C452	1250	02-06-13	50	0		48
MP1472GJ-C452	1249	02-06-13	50	0		48
MP1497DJ	1304	02-06-13	50	0		48
MP1472GJ-C452	1252	02-06-13	50	0		48
MP1494DJ	1302	02-07-13	50	0		48
MP1494DJ	1252	02-07-13	50	0		48
MP1470GJ	1302	02-07-13	50	0		48
MP1472GJ	1234	02-07-13	50	0		48
MP1472GJ-C452	1249	02-07-13	50	0		48
MP1472GJ-C452	1249	02-07-13	50	0		48
MP1472GJ-C452	1249	02-07-13	50	0		48
MP1495DJ	1302	02-27-13	50	0		48
MP1496DJ	1304	02-07-13	50	0		48
MP1497DJ	1304	02-07-13	50	0		48
MP3414DJ	1301	02-27-13	50	0		48
MP1472GJ	1249	02-27-13	50	0		48
MP1472GJ	1302	02-27-13	50	0		48
MP1472GJ	1302	02-27-13	50	0		48
MP1472GJ	1247	02-27-13	50	0		48
MP1472GJ	1248	02-27-13	50	0		48
MP1472GJ	1302	02-27-13	50	0		48
MP1472GJ	1302	02-27-13	50	0		48
MP1472GJ-C452	1249	02-27-13	50	0		48
MP1472GJ-C452	1249	02-27-13	50	0		48
MP1472GJ-C452	1249	02-27-13	50	0		48
MP1494DJ	1302	02-27-13	50	0		48
MP1497DJ	1252	02-27-13	50	0		48
MP1497DJ	1304	02-27-13	50	0		48
MP1497DJ	1304	02-27-13	50	0		48
MP1472GJ	1302	02-27-13	50	0		48
MP1496DJ	1305	02-27-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP1497DJ	1305	02-27-13	50	0		48
MP1472GJ	1302	03-13-13	50	0		48
MP1472GJ-C452	1249	03-28-13	50	0		48
MP1472GJ-C452	1249	03-13-13	50	0		48
MP1497DJ	1305	03-20-13	50	0		48
MP2489DJ	1305	03-06-13	50	0		48
MP1472GJ	1248	03-01-13	50	0		48
MP1472GJ	1302	03-01-13	50	0		48
MP1494DJ	1306	03-01-13	50	0		48
MP1494DJ	1252	03-01-13	50	0		48
MP1472GJ	1249	03-01-13	50	0		48
MP1497DJ	1305	03-01-13	50	0		48
MP1472GJ	1302	03-06-13	50	0		48
MP1497DJ	1306	03-20-13	50	0		48
MP150GJ	1305	03-22-13	50	0		48
MP1494DJ	1306	03-07-13	50	0		48
MP1471GJ	1306	03-13-13	50	0		48
MP1472GJ	1302	03-13-13	50	0		48
MP1472GJ-C452	1303	03-13-13	50	0		48
MP1472GJ-C452	1251	03-13-13	50	0		48
MP2143DJ	1304	03-13-13	50	0		48
MP1494DJ	1305	03-13-13	50	0		48
MP1472GJ-C452	1251	03-13-13	50	0		48
MP1497DJ	1306	03-13-13	50	0		48
MP1472GJ-C452	1252	03-13-13	50	0		48
MP1494DJ	1302	03-13-13	50	0		48
MP1472GJ-C452	1303	03-20-13	50	0		48
MP1497DJ	1308	03-20-13	50	0		48
MP1494DJ	1252	03-20-13	50	0		48
MP1497DJ	1309	03-20-13	50	0		48
MP1472GJ-C452	1306	03-20-13	50	0		48
MP1472GJ-C452	1307	03-20-13	50	0		48
MP1472GJ	1248	03-20-13	50	0		48
MP1497DJ	1306	03-20-13	50	0		48
MP1494DJ	1309	03-20-13	50	0		48
MP1495DJ	1306	03-20-13	50	0		48
MP1472GJ-C452	1307	03-20-13	50	0		48
MP1472GJ-C452	1307	03-20-13	50	0		48
MP1472GJ	1248	03-22-13	50	0		48
MP1472GJ	1249	03-22-13	50	0		48
MP1472GJ	1247	03-28-13	50	0		48
MP1472GJ-C452	1309	03-28-13	50	0		48

Device	D/C	Close Date	Sample Size	# of Fail	FA NO.	# of hrs
MP1472GJ-C452	1307	03-28-13	50	0		48
MP1494DJ	1309	03-28-13	50	0		48
MP1495DJ	1309	03-28-13	50	0		48
MP1496DJ	1310	03-28-13	50	0		48
MP1497DJ	1309	03-28-13	50	0		48
MP1497DJ	1309	03-25-13	50	0		48
MP2159GJ	1307	03-28-13	50	0		48
MP1472GJ	1252	03-28-13	50	0		48
MP1472GJ-C452	1306	03-28-13	50	0		48
MP1472GJ-C452	1307	03-28-13	50	0		48
MP2489DJ	1251	03-28-13	50	0		48
MP1498DJ	1307	03-28-13	50	0		48
MP1472GJ-C452	1309	03-28-13	50	0		48
MP1472GJ-C452	1307	03-28-13	50	0		48
MP1472GJ-C452	1307	03-28-13	50	0		48
Total				1		

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