

信賴性試驗成績書

0.18um Process Technology Product and Package Legacy Fujitsu Reliability Engineering Test Report

Wafer Process : Aizu Fujitsu
Assembly : Tong Fu

Reliability Test 1

Device Type : MCU 1
Package Type : Plastic LQFP-120 Package

Test Item	Test Condition	Tested Number	Tested Time	Failed Number
High Temperature Operation Life 高温連続動作試験	125 °C $V_{DD} = \text{Maximum Rating}$	231 (a) (77x3Lots)	1000h	0
Temperature Humidity Bias 高湿連続動作試験	85 °C / 85% RH $V_{DD} = \text{Maximum Rating}$	138 (a) (46x3Lots)	1000h	0
High Temperature Storage 高温保存試験	150 °C	231 (a) (77x3Lots)	1000h	0
Temperature Cycling 温度サイクル	-65°C ~ 150°C	231 (a) (77x3Lots)	500cyc	0
Pressure Cooker Test	121°C, 100%RH: 2.03E5 Pa	231 (a) (77x3Lots)	168h	0
Pressure Cooker Test with Bias	130°C, 85%RH: 2.33E5 Pa $V_{DD} = \text{Maximum Rating}$	99 (a) (33x3Lots)	96h	0

(a) Pre-condition: Baking (125°C, 24h) +Moisture Absorption (30°C/80%RH, 120h) +IR 260°C Max.
 +Moisture Absorption (30°C/80%RH, 96h) +IR 260°C Max.

Reliability Test 2

Device Type : MCU 2
 Package Type : Plastic LQFP-48 Package

Test Item	Test Condition	Tested Number	Tested Time	Failed Number
High Temperature Operation Life 高温連続動作試験	150 °C V _{DD} =Maximum Rating	93 (31x3Lots)	(b) 1000h	0
Temperature Humidity Bias 高湿連続動作試験	85 °C / 85% RH V _{DD} =Maximum Rating	54 (18x3Lots)	(b) 1000h	0
High Temperature Storage 高温保存試験	150 °C	33 (11x3Lots)	(b) 1000h	0
Temperature Cycling 温度サイクル	-65°C~150°C	54 (18x3Lots)	(b) 500cyc	0
Pressure Cooker Test	121°C, 100%RH: 2.03E5 Pa	54 (18x3Lots)	(b) 168h	0
Pressure Cooker Test with Bias	121°C, 100%RH: 2.03E5 Pa V _{DD} =Maximum Rating	33 (11x3Lots)	(b) 96h	0

(b) Pre-condition: Baking (125°C, 24h) +Moisture Absorption (85°C/85%RH, 12h) +IR 260°C Max.
 +Moisture Absorption (85°C/85%RH, 12h) +IR 260°C Max.

Reliability Test 3

Device Type : MCU 3
 Package Type : Plastic QFP-100 Package

Test Item	Test Condition	Tested Number	Tested Time	Failed Number
High Temperature Storage 高温保存試験	150 °C	78	(c) 1000h	0
Temperature Cycling 温度サイクル	-65°C~150°C	78	(c) 500cyc	0
Pressure Cooker Test	121°C, 100%RH: 2.03E5 Pa	78	(c) 168h	0

(c) Pre-condition: Baking (125°C, 24h) +Moisture Absorption (30°C/80%RH, 168h) +IR 260°C Max.
 +Moisture Absorption (30°C/80%RH, 144h) +IR 260°C Max.

Data Retention Test

Device Type : MCU 4

Test Condition	Tested Number	Failed Number
250°C (Wafer Level Bake x168h) (Data pattern all '0')	231 (77x3Lots)	0

Endurance Test

Device Type : MCU 4

Test Condition	Tested Number	Failed Number
105°C (10,000 times) (V _{DD} =Maximum Rating)	231 (77x3Lots)	0



Document History Page

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Rev.	ECN No.	Orig. of Change	Description of Change
**	5769767	KUMI	Initial release.