

信賴性試驗成績書

90nm Process Technology Product and Package Legacy Fujitsu Reliability Engineering Test Report

Wafer Process : Mie Fujitsu
Assembly : ASE

Reliability Test 1

Device Type : MCU 1
Package Type : Plastic LQFP-100 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} =Maximum Rating	231 (77x3Lots)	(a)	1000h	0
Temperature Humidity Bias 高温連続動作試験	85 °C / 85% RH V _{DD} =Maximum Rating	138 (46x3Lots)	(a)	1000h	0
Low Temperature Operation Life 低温連続動作試験	-55°C V _{DD} =Maximum Rating	78 (26x3Lots)	(a)	1000h	0
High Temperature Storage 高温保存試験	150 °C	231 (77x3Lots)	(a)	1000h	0
Temperature Cycling 温度サイクル	-65°C~150°C	231 (77x3Lots)	(a)	500cyc	0
Pressure Cooker Test	130°C, 85%RH: 2.33E5 Pa	231 (77x3Lots)	(a)	96h	0
Pressure Cooker Test with Bias	130°C, 85%RH: 2.33E5 Pa V _{DD} =Maximum Rating	99 (33x3Lots)	(a)	96h	0

(a) Pre-condition:

Baking (125°C, 24h) +Moisture Absorption (30°C/70%RH, 192h) +Reflow 260°C Max x3

Reliability Test 2

Device Type : MCU 2
Package Type : Plastic QFN-64 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} =Maximum Rating	77	(b) 1000h	0
Temperature Humidity Bias 高温連続動作試験	85 °C / 85% RH V _{DD} =Maximum Rating	46	(b) 1000h	0
High Temperature Storage 高温保存試験	150 °C	77	(b) 1000h	0
Temperature Cycling 温度サイクル	-65°C~150°C	77	(b) 500cyc	0
Pressure Cooker Test	130°C, 85%RH: 2.33E5 Pa	77	(b) 96h	0
Pressure Cooker Test with Bias	130°C, 85%RH: 2.33E5 Pa V _{DD} =Maximum Rating	33	(b) 96h	0

(b) Pre-condition:

Baking (125°C, 24h) +Moisture Absorption (30°C/70%RH, 192h) +Reflow 260°C Max x3

Reliability Test 3

Device Type : MCU 3
Package Type : Plastic WLCSP-79 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} =Maximum Rating	77	(c)	504h	0
Temperature Humidity Bias 高温連続動作試験	85 °C / 85% RH V _{DD} =Maximum Rating	77	(c)	504h	0
High Temperature Storage 高温保存試験	150 °C	77	(c)	504h	0
Temperature Cycling 温度サイクル	-55°C~125°C	77	(c)	500cyc	0
Pressure Cooker Test	110°C, 85%RH: 2.33E5 Pa	77	(c)	264h	0

(c) Pre-condition:

Baking (125°C, 24h) +Moisture Absorption (85°C/85%RH, 168h) +Reflow 260°C Max. x3

Endurance + Data Retention Test

Device Type : MCU
Package Type : Plastic LQFP-100 Package

Test Condition (Ta)	Tested Number	Failed Number
10Kcyc (105°C) + Data Retention Bake : 672h (150°C)	117 (3Lots)	0
10Kcyc (105°C) + HTOL : 1000h (125°C)	114 (3Lots)	0

Document History Page

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Rev.	ECN No.	Orig. of Change	Description of Change
**	5769359	KUMI	Initial release.