

# R1113Zxx1X Series Reliability Test Report

301113Z10F-Ver.A

FUNCTION : Voltage Regulator ICs

PACKAGE : WLCSP-4-P1 ... Lead free-solder ball (Sn-3.0Ag-0.5Cu), Halogen free resin

No.	TEST ITEM	TEST CONDITION	(*)PRE-CONDITION	TIME	r/n
1	High Temp. Operating Life	Ta=125°C VDD=Vopt max. Static	Non	1000h	0/32
2	Temp. Humidity Bias	Ta=85°C RH=85% VDD=Vopt max. Static	(1)+(2)	1000h	0/22
3	High Temp. Storage	Ta=150°C	Non	1000h	0/22
4	Low Temp. Storage	Ta=-65°C	Non	1000h	0/22
5	Temp. Humidity	Ta=85°C RH=85%	(1)+(2)	1000h	0/22
6	Temp. Cycle	Ta=-65 to 150°C (30-5-30min)	(1)+(2)	100cycles	0/11
7	Thermal Shock	Ta=-65 to 150°C (5min-10s-5min)	(1)+(2)	100cycles	0/11
8	USPCBT	Ta=125°C RH=85% 2X10 <sup>5</sup> Pa VDD=Vopt max. Static	(1)+(2)	100h	0/11
9	USPCT	Ta=125°C RH=85% 2X10 <sup>5</sup> Pa	(1)+(2)	100h	0/11
10	Resistance To Soldering Heat	IR Reflow (See Fig.1)	(1)	3times	0/88
11	ESD(1)	MM C=200pF R=0 ohm ±200V	Non	5times	0/11
12	ESD(2)	HBM C=100pF R=1.5k ohm ±2.0kV	Non	3times	0/11
13	ESD(3)	CDM ±1.0kV	Non	Once	0/11
14	Latch-up	Pulse Current Injecting Method ±100mA	Non	Once	0/11

Criteria : The electrical characteristics prescribed in the individual specifications shall be satisfied.

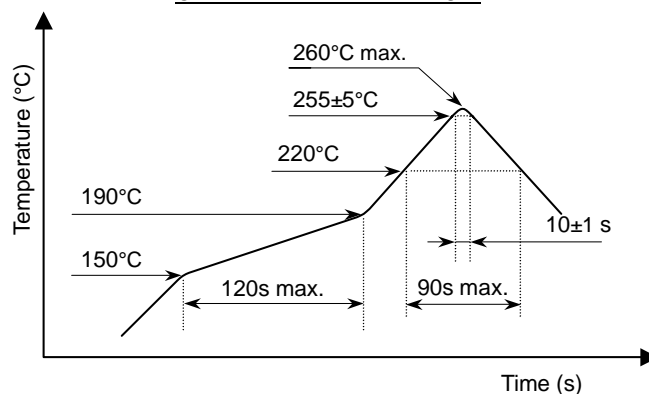
**\*) Pre-Condition**

The test shall be performed this pre-condition before testing.

- (1) Ta=85°C, RH=85%, T=168h
- (2) IR Reflow soldering heat stress (3times)

[Moisture Sensitivity Level]  
MSL Level = 1 (J-STD-020)

**HEATING TREATMENT CONDITION  
OF INFRARED-RAY REFLOW**



Conclusion :The reliability result was good.