

# R2045D Series Reliability Test Report

302045D0-Ver.B

FUNCTION : Real Time Clock Module  
 PACKAGE : SON-22 ... Lead free, Halogen free resin

No.	TEST ITEM	TEST CONDITION	(*)PRE-CONDITION	TIME	r/n
1	High Temp. Operating Life	Ta=85°C VDD=Vopt max. Dynamic	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=125°C	Non	1000h	0/22
4	Low Temp. Storage	Ta=-55°C	Non	1000h	0/22
5	Temp. Humidity	Ta=85°C RH=85%	(1)+(2)	1000h	0/22
6	Temp. Cycle	Ta=-55 to 125°C(30-5-30min)	(1)+(2)	100cycles	0/11
7	Thermal Shock	Ta=-55 to 125°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(1)	IR Reflow (See Fig.1)	(1)	3times	0/88
11	Resistance To Soldering Heat(2)	Ta=350°C(Soldering iron)	(1)	5s	0/11
12	Solderability by Solder Dip Method(1)	Ta=235°C(Solder: Sn-37Pb)	(3)	5s	0/11
13	Solderability by Solder Dip Method(2)	Ta=245°C(Solder: Sn-3.0Ag-0.5Cu)	(3)	5s	0/11
14	Solderability by Wetting Balance Method(1)	Ta=235°C(Solder: Sn-37Pb)	(3)	Zero cross Time 3s	0/5
15	Solderability by Wetting Balance Method(2)	Ta=245°C(Solder: Sn-3.0Ag-0.5Cu)	(3)	Zero cross Time 3s	0/5
16	ESD(1)	MM C=200pF R=0 ohm ±200V	Non	5times	0/11
17	ESD(2)	HBM C=100pF R=1.5k ohm ±2.0kV	Non	3times	0/11
18	Latch-up	CDM ±1.0kV	Non	Once	0/11
19	Latch-up	Pulse Current Injecting Method ±100mA	Non	Once	0/11

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

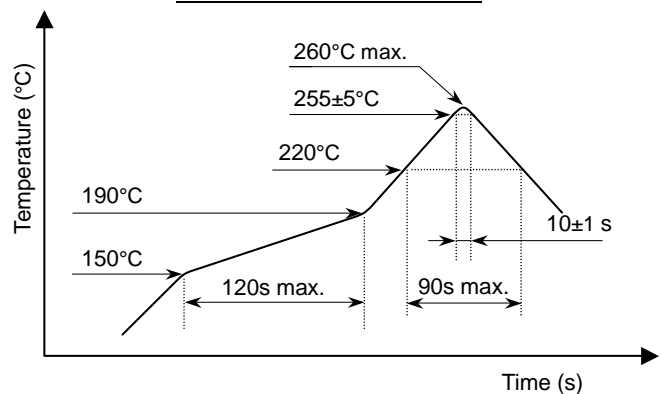
**\*) Pre-Condition**

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

- (1) Ta=85°C, RH=65%, T=168h
- (2) IR Reflow soldering heat stress (3times)
- (3) In steam, storage=4h

[Moisture Sensitivity Level]  
 MSL Level = 2a (J-STD-020)

HEATING TREATMENT CONDITION OF INFRARED-RAY REFLOW



Conclusion :The reliability result was good.