

R5524N (-FE) Series Reliability Test Report

305524NFE -Ver. Aa

FUNCTION : USB HIGH-SIDE POWER SWITCH

PACKAGE : SOT-23-5 ... Tin plate (Sn (Matte-Tin)), 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 | No | 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 | No | 1000h | 0/22 |
| 4 | Low Temp. Storage | Ta=-65°C | No | 1000h | 0/22 |
| 5 | Temp. Humidity | Ta=85°C RH=85% | (1)+(2) | 1000h | 0/22 |
| 6 | Temp. Cycle | Ta=-65 to 150°C (30-30min) | (1)+(2) | 100cycles | 0/11 |
| 7 | USPCBT | Ta=125°C RH=85% 2X10 ⁵ Pa VDD=Vopt max. Static | (1)+(2) | 100h | 0/11 |
| 8 | USPCT | Ta=125°C RH=85% 2X10 ⁵ Pa | (1)+(2) | 100h | 0/11 |
| 9 | Resistance To Soldering Heat(1) | IR Reflow (See Fig.1) | (1) | 3times | 0/88 |
| 10 | Resistance To Soldering Heat(2) | Ta=350°C (Soldering iron) | (1) | 5s | 0/11 |
| 11 | Solderability by Solder Dip Method(1) | Ta=235°C (Solder: Sn-37Pb) | (3) | 5s | 0/11 |
| 12 | Solderability by Solder Dip Method(2) | Ta=245°C (Solder: Sn-3.0Ag-0.5Cu) | (3) | 5s | 0/11 |
| 13 | Solderability by Wettting Balance Method(1) | Ta=235°C (Solder: Sn-37Pb) | (3) | Zero cross Time 3s | 0/5 |
| 14 | Solderability by Wettting Balance Method(2) | Ta=245°C (Solder: Sn-3.0Ag-0.5Cu) | (3) | Zero cross Time 3s | 0/5 |
| 15 | ESD(1) | MM C=200pF R=0 ohm ±200V | No | 5times | 0/11 |
| 16 | ESD(2) | HBM C=100pF R=1.5k ohm ±2.0kV | No | 3times | 0/11 |
| 17 | ESD(3) | CDM ±1.0kV | No | Once | 0/11 |
| 18 | Latch-up | Pulse Current Injecting Method ±100mA | No | Once | 0/11 |

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

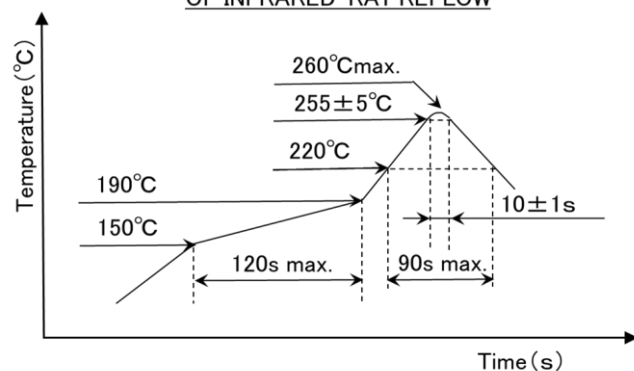
***) Pre-Condition**

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

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

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

HEATING TREATMENT CONDITION OF INFRARED-RAY REFLOW



Conclusion : The reliability result was good.