VS1033D Qualification Report Summary

1.1 Package qualification

Package type: LQFP 48 RoHS
Dimensions: 7 x 7 x 1.4 (mm)
LQFP48 RoHS (Green) package has passed qualification tests, MSL3 at 260°C.

Package type: FBGA 49 RoHS
Dimensions: 7x7x1.45 (mm)
FBGA 49 RoHS (Green) package has passed qualification tests, MSL3 at 260°C.

1.2 Device qualification

The qualification is done for devices that have been fabricated with the production masks and encapsulated with the qualified production package. Each device has also passed the test program (+25 °C), that is also called as “Final Test”.
The qualification tests are summarized below

Test	Sample size	Conditions	Result Failed/passed
Electrical temperature characterization (VS1033C Lot ET604009.001, corners)	11	-30, +25, +85°C at 5 voltage combinations.	0 / 11
Electrical temperature characterization (VS1033D Lot ET703023.001, nominal)	2	-30, +25, +85°C at 5 voltage combinations.	0 / 2
Latch-up immunity (VS1033C Lot ET604009.001-2): I-Test JEDEC JESD78	6	+/- 200 mA CVDD = AVDD = 2.6 V, IOVDD = 3.6 V	0 / 6
Latch-up immunity (VS1033C Lot ET604009.001-2): Voltage test.	6	3,6 V trigger pulses JEDEC JESD78	0 / 6
ESD susceptibility (VS1033C Lot ET604009.001): MIL-STD-883 3015	3 x 4	HBM, 1000, 1500 and 2000 V	0 / 9
		HBM 4000 V, pin 42 fail	1 / 2
Life test (VS1033D Lot ET703023.001)	34	125 °C, 1000 h, AVDD = IOVDD = 3.6V, CVDD = 2.7 V. MIL-STD-883 1005	0 / 34

1.3 Conclusion

Qualification results of VS1033C can be used for VS1033D, because only VIA1 mask was changed to improve ROM code for VS1033D.

Lifetest (1000h, +125°C, biased) was done to ensure the reliability of VS1033D. Electrical temperature characterization was done with two VS1033D devices to check that the results have not changed.

With these considerations the VS1033D device has passed the qualification.