QREE0016
QUALIFICATION REPORT

MP8000 Mold Compound
SO8 Shenzhen

THIS REPORT

This Qualification Report summarizes the reliability trials and results performed to qualify new Nitto Mold Compound called MP8000 used on SO8 package (Small Outline Package) in Shenzhen plan. This material is already qualify in Muar plan (see qualification report R99008).

This document serves for the qualification of the mold compound material change, using the products. Test conditions are presented in Table 2 and results in Table 3.

Table 1. Product and Process used for Qualification

Product	Package	Process	Fab Line
M24C16K	SO8	CMOSF6SP 20%	Rousset
M24C08L	SO8	CMOSF6SP 26%	Rousset
M24256N	SO8	CMOSF6DP 26%	Rousset

PRODUCT DESCRIPTION

The M24C08L, M24C16K, and M24256N are 8 Kbits, 16 Kbits and 256 Kbits EEPROM with I2C serial bus interface organised as 1024x8 bits, 2048x8 bits, and 32Kx8 bits. These products are already qualified, and in production.

PROCESS DESCRIPTION

The CMOSF6 process Single Poly (SP) and Double Poly (DP) in either 20% shrink or 26% shrink are already qualified, and in production for EEPROM memory products.

Table 2. Plastic package qualification, Package-related tests
M24C16K, SO8, CMOSF6SP 20%,
M24C08L, SO8, CMOSF6SP 26%,
M24256N, SO8, CMOSF6DP 26%

Sub group	Test Procedure	Method	Test Conditions	Num of Lots	Criteria[1]
1	Temperature Shock	Mil Std 883 Method 1011B	-55°C / +125°C, 500 shocks	3	0/25
2	Temperature Cycling	Mil Std 883 Method 1010C	–40 °C / +150 °C, 1000 cycles	3	0/60
3	Temperature and Humidity Biased	CECC 90000	85 °C, 85% RH, 5.5 V, 1000 hr	3	0/60
4	Pressure Pot	Internal spec.	121 °C, 2 atm, 100% RH, 240 hr	3	0/60
5	High Temperature Bake	Mil Std 883 Method 1005	150 °C, 1000 hr or 200 °C, 500 hr	3	0/60

Note: 1. Criteria 0/60 means: accepted with 0 rejects out of 60units (rejected with 1 reject).

Table 3. Package qualification, Results
M24C16K, SO8, CMOSF6SP 20%,
M24C08L, SO8, CMOSF6SP 26%,
M24256N, SO8, CMOSF6DP 26%

Sub group	Test Procedure	Preconditioning	Test Conditions	Lot 1 M24C16K	Lot 2 M24C08L	Lot 3 M24256N
1	Temperature Shock	No precond.	1000 shocks	0/25	0/25	0/25
		Level 1	500 shocks	0/25	0/25	0/25
2	Temperature Cycling	No precond.	100 cycles	0/500	0/500	0/60
			1000 cycles	0/60	0/60	0/60
		Level 1	1000 cycles	0/60	0/60	0/60
3	Temperature and Humidity Biased	No precond.	1000 hr	0/60	0/60	0/60
		Level 1	1000 hr	0/60	0/60	0/60
4	Pressure Pot	No precond.	240 hr	0/60	0/60	1/60[1]
		Level 1	240 hr	0/60	0/60	2/60[1]
5	High Temperature Bake	No precond.	150 °C, 1000 hr	0/60	0/60	0/60
		Level 1	150 °C, 1000 hr	0/60	0/60	0/60

Note: 1. Analysis of these rejects evidenced passivation voids on these parts. These failure cannot be imputed to the Mold Compound change. Following these results, an action plan is running in order to correct this issue.

Table 4. Revision History

Date	Description
22-Nov-2000	Document written

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If you have any questions or suggestions concerning the matters raised in this document, please send them to the following electronic mail addresses:

ask.memory@st.com (for general enquiries)

Please remember to include your name, company, location, telephone number and fax number.