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Premstätten, August 3, 2020

Process Change Notification PCN42- 2020

FAB process change TM2703

I. Description and Purpose:

The purpose of this PCN is to notify the customer regarding an upcoming process change for the TM2703 family of device. The current Inter metal dielectric (IMD) process for the TM2703 device uses FOX process and the proposed change will include the change of the IMD process from FOX to SOG process (additional process details included in sec 3). The reason for this proposed change is that UMC is discontinuing the use of FOX material in their process.

The SOG IMD process is a mature process at UMC and is currently used in mass production in other AMS products manufactured in UMC Fab 8AB and AMS has shipped several millions of these products. The SOG IMD process qualification for Fab8AB has been completed and passed.

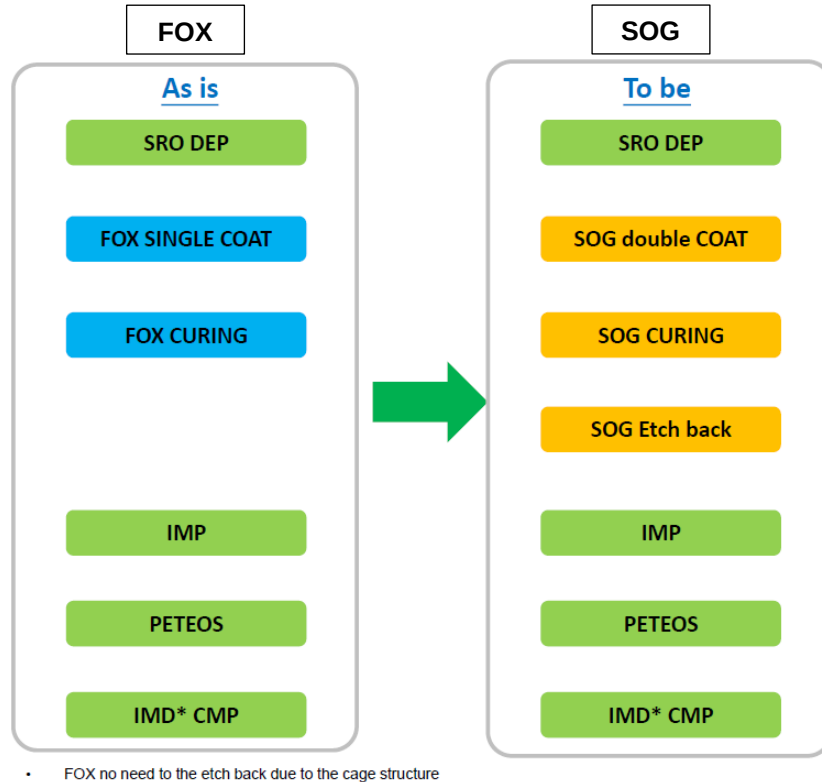
II. Scope and Limitation

This PCN document only applies to TM2703 family of devices, which includes following products:

PN	Ordering Code	Description
300170017	TSL25723FN	TSL25723FN ODFN6 LF T&RDP
300170029	TSL25721FN	TSL25721FN ODFN6 LF T&RDP
300170003	TMD27723	TMD27723 MOD8 LF T&RDP
300170021	TMD27721	TMD27721 MOD8 LF T&RDP
300170009	TSL27721FN	TSL27721FN ODFN6 LF T&RDP
300170011	TMD26723	TMD26723 MOD8 LF T&RDP
300170025	TMD26721	TMD26721 MOD8 LF T&RDP
300170008	TSL26721FN	TSL26721FN ODFN6 LF T&RDP
300170047	AF-TE2703C	AF-TE2703C / TM2703C UW

III. Process flow, Process Qualification and Product Qualification Plan:

The below table shows a process flow comparison of the IMD process.



Process qualification data completed for the 0.35 um SOG process

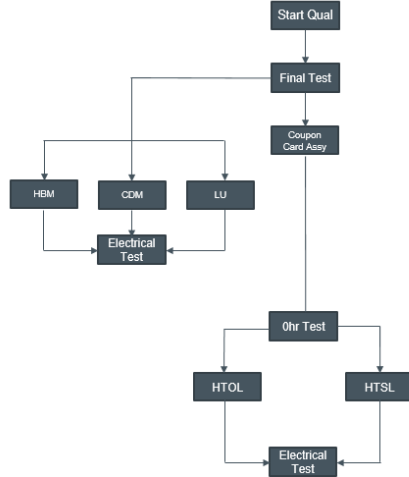
■ Reliability data at 8AB 0.35um SOG process -- **Pass**

Test Item	Pattern	SPEC	1st lot	2nd lot	3rd lot
EM	M1	Lifetime > 10yrs	PASS	PASS	PASS
	M2	Lifetime > 10yrs	PASS	PASS	PASS
	TM	Lifetime > 10yrs	PASS	PASS	PASS
	Via1	Lifetime > 10yrs	PASS	PASS	PASS
	TVia1	Lifetime > 10yrs	PASS	PASS	PASS

Qualification Plan for TM2703 material with SOG process (TSL25723FN)

Proposed Qualification Plan for TM2703 FAB 8AB Material

Test Flow and Test Conditions



Test	Reference	Stress conditions	Lots	S.S/ lot
HTOL	JESD22-A108	1000h @ 85°C. VDD = 3.8 V readouts: 168h and 500h	3 lots from FAB 8AB	77
HTS	JESD22-A103	1000h @ 85°C readouts: 168h and 500h	3 lots from FAB 8AB	77
ESD-HBM	JESD22-A114	HBM: > 2kV	3 lots from FAB 8AB	12
ESD-CDM	JESD22-C101	CDM: ≥ 500V	3 lots from FAB 8AB	12
Latch-up test	JESD78	±100mA (1.5xVddmax) at 85degC	3 lots from FAB 8AB	12

Qualification Timeline

Samples available – WW41 (Oct, WK2)

Qualification start – WW42 (Oct, WK3)

Qualification complete – WW02 (Jan 2021, WK2)

The qualification plan will only cover the TSL25723FN device and qualification results will be provided as per qualification plan.

IV. Product Traceability and affected products

- Existing controls will be migrated and implemented to the new process change.

V. Critical dates

Process Evaluation	Completed
Product Reliability	WW02

- Qualification completion – WW02 (Jan 2021)



Please be advised that unless we received your written refusal concerning this PCN in writing within 30 days, the PCN shall be deemed accepted.

If you do have further questions, please do not hesitate to contact me.

Best Regards,

A handwritten signature in black ink, appearing to read 'Maximino de Leon', with a stylized flourish at the end.

Maximino de Leon

ams AG

Director, Key Customer Quality