Form provided by ZVEI – Revision 1.0 – January 2013

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For integrated circuits **or** discrete semiconductors **select below:**

AEC-Q100

PCN number	16548

Assessment of impact on Supply Chain regarding following aspects - contractual agreements - technical interface of processability/manufacturability of customer - form, fit, function, quality performance, reliability Type of change	Remaining risks on Supply Chain? No	Remaining risks on Supply Chain? Yes	Understanding of semiconductors experts	Examples to explain	Evaluation level A / B / C A: Application level B: Boardlevel C: Component level *: will become A/B/C after decision **: Not relevant for qualification matrix	Remarks / Comments	Line evaluation (can be evaluated by data or audit/on site check)	AEC - Q100	Check of specification (for raw material only)
ANY									
Any change with impact on agreed upon contractual agreements	P	P	Not relevant for technical evaluation.		**		-		
Any change with impact on technical interface or processability/manufacturabiliy of customer	I	P	As *Info Note* for cases where customer should be aware of and which are not named in this document.		*	A, B, C: Depends on change.	-		
DATASHEET									
Change of datasheet parameters/electrical specification (min./max./typ. values) and/or AC/DC specification [1])	P	P	Change of application relevant information (e.g. recomendations for pull-up/pull-down or NC pins, MSL) **Not included:** Editorial changes.		A	[1]) **Not included:** Editorial changes	-		
Correction of data sheet / errata	I	P	Errata Sheet		A	Errata sheet as information note in case of editorial changes. Errata sheet which impacts product integrity requires a PCN.	-		
DESIGN									
Design changes in routing. [3])	P	P	Any change in chip design / layout. **Not included:** design optimization	e. g. change of wiring between elements in one chip which has influence on the specified parameters / function e. g. mask changes in metal fix	*	A, B, C: Depends on change. [3]) **Not included:** Design optimization = modification to adapt to the specified process window.	-		
Tests, which should be considered for the appropriate process change.					*		-		
Tests, which should be considered for the appropriate process change after selection of condition table.					*		-		
Suppliers performed tests (mark with an 'X' for done or 'G' for generic)									

Device evaluation

MATERIAL PERFORMANCE TEST RESULTS (on the basis of AEC-Q100)
includes integrated circuits (e.g. ASICs, µ-Controler, memories, voltage regulators, smart power devices, logic devices, analog devices,...)

Type of change	Temperature Humidity Bias or biased HAST (THB)	Autoclave or Unbiased HAST (AC)	Temperature Cycling (TC)	Power Temperature Cycling (PTC)	High Temperature Storage Life (HTSL)	High Temperature Operating Life (HTOL)	Early Life Failure Rate (ELFR)	NVM Endurance, Data Retention, and Operational Life (EDR)	Wire Bond Shear (WBS)	Wire Bond Pull (WBP)	Solderability (SD)	Physical Dimensions (PD)	Solder Ball Shear (SBS)	Lead Integrity (LI)	Electromigration (EM)	Time Depending Dielectric Breakdown (TDDB)
Any change with impact on agreed upon contractual agreements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Any change with impact on technical interface or processability/manufacturabiliy of customer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Change of datasheet parameters/electrical specification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Correction of data sheet / errata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Design changes in routing.	-	-	A	M	-	-	-	-	-	-	-	-	-	-	-	-
Tests, which should be considered for the appropriate process change.	-	-	A	M	-	-	-	-	-	-	-	-	-	-	-	-
Tests, which should be considered for the appropriate process change after selection of condition table.	-	-	--	--	-	-	-	-	-	-	-	-	-	-	-	-
Suppliers performed tests																

Type of change	Hot Carrier Injection (HCI)	Negative Bias Temperature Instability (NBTI)	Stress Migration (SM)	Electronic Discharge Human Body Model / Machine Model (HBM/MM)	Electronic Discharge Charged Device Model (CDM)	Latch up (LU)	Electrical Distribution (ED)	Characterisation (CHAR)	Gate Leakage (GL)	Electromagnetic Compatibility (EMC)	Short Circuit Characterization (SC)	Soft Error Rate (SER)	Hermetic Package Test (MECH)	Package Drop (DROP)	Lid Torque (LT)	Die Shear (DS)	Internal Water Vapor (IWV)
Any change with impact on agreed upon contractual agreements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Any change with impact on technical interface or processability/manufacturabiliy of customer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Change of datasheet parameters/electrical specification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Correction of data sheet / errata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Design changes in routing.	-	-	-	●	●	●	●	●	S	●	●	-	-	-	-	-	-
Tests, which should be considered for the appropriate process change.	-	-	-	●	●	●	●	●	S	●	●	-	-	-	-	-	-
Tests, which should be considered for the appropriate process change after selection of condition table.	-	-	-	●	●	●	●	●	(●)	●	●	-	-	-	-	-	-
Suppliers performed tests																	

Reason for exception of tests:

All- ROM Change only - no difference in any trait/characteristic, etc that would warrant a stress test to evaluatate. Qualification with no Stress Evaluation was specifically approved by FSL ATX MICR business unit Change Action Board.

Gate Leakage - Freescale does not perform as part of qualification

–	Not required.
I	Information Note required.
P	PCN required.

A letter or "●" indicates that performance of that stress test should be considered for the appropriate process change.

	CONDITIONS	YES	NO
A	Only for peripheral routing		x
B	For symbol rework, new cure time, temp		
C	If bond to leadfinger		
D	Design rule change		
E	Thickness only		
F	MEMS element only		
G	Only from non-100% burned-in parts		
H	Hermetic only		
J	EPROM or EEPROM		
K	Passivation only		
M	For devices requiring PTC		x
N	Passivation and gate oxide		
P	Passivation and interlevel dielectric		
Q	Wire diameter decrease		
S	Required for plastic SMD only	x	
T	Only for Solder Ball SMD		
A1	Only if the device use CAN, LIN, FLEXRAY		
A6	Only if EME behaviour is affected		

=> Please mark 'YES' or 'NO' with a small 'x'