# **DeltaQualifikationsMatrix**

Kurze Produkt- und Technologiezyklen elektronischer Bauelemente sowie neue Umweltauflagen führen häufig zu Short product and technology cycles as well as new environmental regulations frequently result in process prozeß- und werkstofftechnischen Änderungen an Bauelementen, Leiterplatten, Verbindungstechnik und Schaltung, welche evaluiert werden müssen. Eine geeignete Methodik zur Handhabung von Änderungen an elektronischen Bauelementen beschreibt die ZVEI "Guideline for Customer Notifications of Product and /or Process Changes (PCN) of Electronic Components specified for Automotive Applications". Ein wesentlicher Teil dieser Guideline sind die hier vorliegenden Matrizen, welche sich als Empfehlungen für die Evaluierung von typischen Änderungen an elektronischen Bauelementen verstehen. Dies sollte Teil des offenen und risikobewussten Dialoges zwischen Lieferant und Kunden sein.

Diese DeltaQualifikationsMatrizen wurden durch den Industriearbeitskreis "PCN DeltaQualifikationsMatrix" und den Bauteilexperten des ZVEI Arbeitskreis "PCN-Methodik" erarbeitet. Der Inhalt wurde basierend auf dem aktuellen Stand der Technik erstellt und erhebt keinen Anspruch auf Vollständigkeit. Im Einzelfall ist ggf. ein abweichendes Vorgehen abzustimmen, da kundenspezifische Vereinbarungen zur Qualifikation zu berücksichtigen sind.

## Anwendung der DeltaQualifikationsMatrix (auszufüllen durch den Bauelementehersteller)

- a) Diese Tabelle ist nur bei Änderungen anzuwenden. Neuqualifikationen und Sonderqualifikation (z.R. Verguß von Modulen) sowie Information Notes bleiben von diesen Matrizen unberührt
- b) Ist eine Änderung in dieser Tabelle nicht aufgeführt, so ist der Qualifikationsumfang zwischen Kunde und Lieferant abzustimmen.
- c) Die Matrix der Aktiven Bauelemente ist so aufgebaut, dass zwischen integrierten Halbleiten (AEC-Q100 Rev. H) und diskreten Halbleitern (AEC-Q101 Rev. D1) auszuwählen ist (Zelle D4). Für passive Bauelemente gilt die AEC-Q200. Für LED's gilt die AEC-Q102. Für Multi-Chin-Module gilt die AEC-Q104
- d) Alle Änderungen in der PCN sind in der Spalte B durch ein Kreuz (x) zu markieren und werden dadurch farblich hervorgehoben. Sofern dies geschehen ist, werden im Feld "Tests, which should be considered for the appropriate process change" alle in Betracht zu ziehenden Zuverlässigkeitstests angezeigt.
- e) In "Tests, which should be considered for the appropriate process change after selection of condition table" wird die Anpassung der in Betracht zu ziehenden Tests in Folge der Relevanz bezüglich der Änderung berücksichtigt
- Dazu ist die Tabelle "Conditions" entsprechend der Auswahl (A/B/C) mit einem (x) zu bewerten. f) In "Suppliers performed tests" dokumentiert der Bauelementehersteller die durchgeführten bzw. geplanten Tests.
- g) Falls von der Testempfehlung abgewichen wird, so sollten diese Abweichungen vom Bauelementehersteller angezeigt und kommentiert werden. Hierzu ist der Bereich "Reason for exception of tests" zu verwenden. Werden die in Betracht zu ziehenden Tests durch generische Daten (G) belegt, ist dies ebenfalls hier anzuzeigen und zu begründen.

## Die Einstufung des Untersuchungslevel erfolgt in folgende Kategorien

- "C: Component level": Die Evaluierung der Änderung am Bauelement ist durch Untersuchungen ausschließlich am Bauelement beim Bauelementehersteller durchführbar. Zur Evaluierung der Änderung dürfen Ergebnisse aus bereits durchgeführten Untersuchungen herangezoger werden, wenn diese zu einem ähnlichen Bauelement hereits vorliegen (Generische Daten)
- "R. Board level". Die beschriebene Änderung hat möglicherweise Einfluss auf die Verarbeitharkei des Bauelementes im Steuergerät. Die Evaluierung der Änderung wird wie unter C beim Bauelementehersteller durchgeführt. Zusätzlich ist durch den Kunden/Steuergerätehersteller die Verarbeitbarkeit zu prüfen, die z.B. abhängig von der Änderung, Zuverlässigkeitsuntersuchungen auf applikationsrelevanten Testbords erfordert.
- "A: Application level": Die beschriebene Änderung hat möglicherweise Einfluss auf die Applikation/ das Steuergerät. Die Evaluierung der Änderung wird wie unter C oder B durchgeführt. Zusätzlich ist vom Kunden/Steuergerätehersteller der Einfluss der Änderung im Steuergerät durch geeignete Untersuchungen zu bewerten. Dieses Vorgehen ist mit dem OEM abzustimmen. Hierbei ist zu berücksichtigen, ob die Steuergeräte- / Baugruppenanforderungen durch andere Qualifikationen bereits hinreichend abgesichert sind (applikationsspezifische Risikobetrachtung).
- " \*: Not relevant for qualification matrix": Änderung(en), die nicht in A, B oder C eingestuft werden können und somit nicht relevant für die DeQuMa sind

Änderungen die nur eine Information Note benötigen (bei der Bewertung Risk on Supply Chain als "I" gekennzeichnet), dürfen nicht in der DeQuMa angekreuzt werden, da Sie ansonsten den erforderlichen Evaluierungslevel verfälschen. Für als "I" bewertete Änderungen ist das Information Note Formblatt zu

- Zur formgerechten Anwendung der DeltaQualifikationsMatrizen steht auf der Homepage des ZVEI AK ein Tutorial bereit (ZVEI-Tutorial).
- ID Nummer; ist eine eindeutige Identifikationsnummer für jede angegebene Änderung, die in den ZVEI PCN DeltaQualifikatiosMatrizen identifiziert ist. Die gleiche ID Nummer wird zur Identifizierung der Änderung im PCN Form Sheet verwendet.
- Die mittels Matrix identifizierten Tests sind in Betracht zu ziehen, d.h. es ist zu prüfen, ob der jeweilige Test für die spezifische Änderung in dieser Form notwendig ist. Abweichungen oder generische Daten sind im Detail zu begründen.
- Die Spalte "Further applicable conditions". Bemerkungen und Fußnoten sind unbedingt zu beachten, da sie wichtige Hinweise und Einschränkungen enthalten.
- Zur Nutzung aller Funktionen muss in Excel die Anwendung von Makros freigegeben sein

## **DeltaQualificationMatrix**

## General

and material changes of components, printed circuit boards, assembly techniques and circuit layout which have to be evaluated. The ZVEI "Guideline for Customer Notifications of Product and /or Process Changes (PCN) of Electronic Components specified for Automotive Applications" describes an appropriate methodology for dealing with changed electronic components. The qualification matrices in this guideline are recommendations for how to assess typical changes of electronic components. These recommendations promote an open risk-based discussion between supplier and customer regarding

The DeltaQualificationMatrices were developed by the Industry Task Force Team "PCN DeltaQualificationMatrix" together with component experts from the ZVEI Working Group "PCN-Methodology", Actual content represents state-of-the-art technology and does not claim to be comprehensive. Deviation from proposed guideline should be mutually agreed as customer specific requirements have to be considered

## DeltaQualificationMatrix Application (completion by component manufacturer)

- a) This table has to be used for changes only. The matrices are not applicable for new product, special qualifications (for instance for encapsulation of module) or Information Notes
- b) If a change is not listed in this table, the qualification plan has to be defined and agreed between customer and supplier.
- c) The matrix for Active Components requires the user to choose between integrated circuits (AEC-Q100 Rev. H) and discrete semiconductors (AEC-Q101 Rev. D1) (cell D4) For Passive Components AEC-Q200 is used. For LED'S the AEC-Q102 is used For Multi-Chin-Modules the AFC-Q104 is used
- d) All changes as listed in the PCN have to be marked, by a cross (x) in column B and will appear colored. The relevant reliability tests are then shown in "Tests, which should be considered for the appropriate process change".
- e) In "Tests, which should be considered for the appropriate process change after selection of condition table" is for modification of the found relevant tests under consideration of the weight of change.
- Related table "Conditions" has to be assessed per proposed letters with an (x) f) In "Suppliers performed tests" the component manufacturer documents the planned and
- performed tests.
- g) In case of deviations from tests, which should be considered this should be notified and commented by the component manufacturer in the area "Reason for exception of tests". Test results in form of generic data (G) are allowed when notified and justified.

## Evaluation Levels are categorized as follows

- "C: Component level": The evaluation of a change at component level by the component manufacturer is sufficient. Generic data from other relevant evaluations can be used.
- "B: Board level": The intended change described in the PCN may influence processability / manufacturability of the component at board level. Therefore additional evaluation by customer may be necessary, for example reliability tests on application relevant testboards depending on change
- "A: Application level": The intended change described in the PCN may influence the properties of the application (e.g. Electronic Control Unit). In addition to the evaluation under C or B the influence of the change in the application is evaluated by suitable investigations by the customer. The scope of the evaluation has to be aligned with the OFM. It has to be considered whether the application / assembly requirements are already sufficiently safeguarded by other qualifications (application specific risk assessment).
- " \*: Not relevant for qualification matrix": Changes which fulfill neither A,B nor C definitions

Changes indicated as "I" shall not be marked in the DeQuMa. For those changes the Information Note sheet shall be used. As the DeQuMa is desired for PCN only, a marking of "I"-changes would automatically influence evaluation level and test effort.

- To use the matrices in the right form the ZVEI working group provides a Tutorial on its homepage (ZVFI-Tutorial)
- D number: is a unique identification number for each indicated change defined in the ZVEI PCN DeltaQualificationMatrices. The same ID number is used in the PCN Form sheet to identify the change.
- Tests identified by the matrix have to be considered and checked if they are necessary to assess the specific change. Test modifications or generic data have to be justified in detail.
- "Further applicable conditions", comments and notes need attention, as they provide important hints and limitations.
- In order to use all functions in EXCEL, macros have to be allowed

# **History of DeQuMa**

Version	Remarks
2.0	Revised by ZVEI PCN Methodology Workgroup in March 2015
2.1	Released March 2015
2.1.1	Active Components - delete write protection in comments
2.2	Solved problems with some ActiveX configurations
2.2.2	Solved Problems in Active Components
2.2.3	Solved Problems ActiveX, Active Components SEM-DE-02 (Design changes in routing) error fixed
2.2.4	Minor fixes
3.0	General Revision by ZVEI PCN Methodology Workgroup in June 2016
	Changes are indicated by underlining in the read only version named Changes_DeQuMa_rev3_vs_rev2.xlsx
3.0.4	Expert Release
3.0.5	Fixing of macro bugs
3.1	Final Release (orthographic and punctuation corrections)
4.0	General Revision by ZVEI PCN Methodology Workgroup in July 2019.
	Muliti Chip Modules newly added to DeQuMa
	LED Components now based on the AEC Q102
	Further Changes see separate PDF's Excel-File, where changes are indicated by underlining
4.1	LED worksheet: Content of columns had been swapped due to rearrangement and omission of columns.

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Worked on: me, Function) Max Mustermann Date:		Form provided by ZVEI - Revision 4.1 - Nove																					
CN number:																							
Signature:												De	vice ev	aluation									
rated circuits or iductors select below:							includ	les integr	ated circu	MA' its (e.g	TERIAL PERFO , ASICs, μ-Con	RMANCE TES' roller, memori	RESULT:	S (on the basi e regulators, s	s of AEC	-Q100 Revis ver devices,	ion H) logic dev	vices, analog	devices,	)	addit AEC	ional to -Q10x	
	l			Evaluation level A/B/C		·		s or bissed HAST	0	110	ng Life Bertion, and Operations			Baabdown e Insubity				aty bn			ESD201)	thangs dd evice leif bullon	
Assessment of Impact on Supply Chain regarding following aspects	Remainin risks with Supply Chain?	g in Understanding of semiconductors experts	Examples to explain	A Application level B Boards wil C Component level That referent for qualification matrix	Further applicable conditions	econtained by dataor exciton six the beeveluned by dataor exciton six the C-Q100 Revision H	ck of specification raw material orby)	Temperature Humidity Bia AC Autoclave or Unbia sed HA	TC Temperature Cycling PTC Power Temperature Cyclin	HTSL High Temperature Sonage	HTOL. High Temperature Operation Countries. Early Life Fabrice Rate RDR NVM Enterance, Data Ret Lfe Lfe Formation (1998).	West Wive Bond Shire West Bond Pull SD Soldenbility PD Physical Dimensions	Lead hingshy EM Electronigator	TDD8 Tree Depending Deletchic HCI Hct Canlor hips ton Nogative Bias Temperatur	SM Stress Migration Electronic Discharge HEM Human Block Model	CDM Electronic Discharge Charged Davice Model	ED Electrical Distribution OHAR Characterisation	EMC Electron agnetic Compatib SC Short Crout Characterizate SER Sot Error Rate	LF Lead the MECH Hermat CP adage Test	LT LiftTrapos OS Dis Stream	MY Irramal Waler Vapor Whiston lest (EC60006 T2-62, EDEC J	Parameter-Analysis Comparison of current eith comparison of current eith comparison of current either comparison of current either Comparison and Comparison of Comparison	Remarks
ANY  SEM-N4-01 Any change with impact on agreed upon technical contractual agreements.		Intended to be used if no other type of change is applicable but the change affects agreed technical contractual accuments.		-		AEC	őě	A2 A3	A4 A5	AS E	81 82 83	C1 C2 C3 C4 I	25 C8 D1	D2 D3 D4	D5 E2	E3	E4 E5 E7	E9 E10 E11	E12 G1-4	35 G8 G7	C8		
SCH-M-VIII Any crasing with impact on grows upon scromatic contractual agreements.  SCH-M-VIII SCH-	P P	applicable but the change affects agreed technical contractual someomers.  Any change which is not covered in the matrix below, but fink assessment at customer is		В												-							
DATA SHEET  SEM-DS-01  Change of datasheet parameters/electrical specification (min./max./kyp. values) and/or ACIDC configuration.		Update of data sheet because of technical change of the product.	e.g. recommendations for pull-up/pull-down or NC	A											1.1 .	1.1					Ϊ.		
2514-05-02 Expectionation  2514-05-02 Correction of data wheet or issue of emata	1 1	of the product.  No technical change of product, process or lest.  Now description of behavior which was not specified belons or which is different from initial specification.  Please indicate clearly, that belonds contains this type of change!  Assessment is explication secretarily.	pina, MSL e.g. Errata	Α.						-						-							
2514-25-23 Specification of additional parameters	I P	type of change! Assessment in wedination sensioned Description of a new not previously covered persenter. No technical change of the product. (I): Definition of new parameter which was not documented before. (P): Not known as single change. Chy in combination with other changes.	(8: e.g. adding new tested parameter.	A												-							
DESIGN	Ш	(P): Not known as single change. Only in combination with other changes.								$\perp$		Ш	Ш		Ш					Ш			
SEM-DE-01 Design changes in active elements. 1)	P P	Any device relevant changes in design / layout of elements with effect on data sheet 1) Not included: Modification to adjust product parameter within specified process window and design rules.	e.g. change of ESD atructure e.g. add / remove a translator in layout	A	Please check if clate sheet is affected (SEM-DS-91).				• M	-	• • D,J		D	D D D	D •	•				F			
2EM-DE-02 Design changes in routing . <sup>1</sup> )	P P	Any change of wiring between elements in chip	e.g. mask changes in metal fix for corrective action (based on external 8D report)	С	A: Impact on EMC behavior cannot be evaluated / excluded on component level.  A: 8 repact on electrical function is not excluded on component level.  Please check if data sheet is affected (SEM-DS-01).		-		A M							•						•	
SEM-DE-03 Die afreink <sup>3</sup> )	P P	Strink of active area.  3) Not included: sawing street/kert/scribe line	Typical shrink of die.	A	Please check if change in process technology (SEM-PW-03) is also affected.		-		- м		• • D,J					•							
ZEM-CE-04 Firmuse modification		Integrated software by dealign or memory as defined by supplier. (I): Firmsers modification or update without effect of functional performance at the customer (bug la). (P): Firmware modification or update with effect of functional performance at the customer.	(i): e.g. addition of Firmware opportunities (iP): e.g. bug fix with impact on functional performance	A			4			-						-							
PROCESS - WAFER PRODUCTION  SEM-PVI-01  New / change of wafer substrate material	РР		e.g. different water material to currently released material (like change from EPI material into non-	С						Ŧ					T.I .								Qualification effort acc. AEC-Q100: see diffusion/doping
SE16-PV-G2 New water diameter	-	Change of wafer diameter resulting in equipment and process changes.	EPI materiali	С	Impact on changes in SEM-PW-09 and/or SEM-EQ-01.		-		ЕМ			E E			. Е	E	E • ·						AEC.0100. Yor broad changes that involve multiple attributes (e.g., site, materials, processes), refer to section A1 3 of this appeads and section 23 of Q100, which all for the selection of worst-case test vehicles to cover all the possible permutations."
SEM-PW-G3 New final water thickness	P P	Change in final water thickness.	e.g. change in final chip/de thickness	С	A: If thermal conductivity is affected (like MOSPET; IGBT, BGA package, stacked des,) A: If impact on EMC or ESD behavior cannot be evaluated / eacluded on component level.		-		ЕМ	-		Е Е			- Е	E	E • -						
SEM-PW-04 Change of electrically active doping/implantation element		Change in electrically active doping / implantation element resulting in a new technology.		A			-		- м													•	
SEM-PW-C6 Change of gate material / defectrics	P P	Change of gate material and / or gate dielectric material.  Change of bottom layer of die (between die and		A	A: If thermal conductivity is affected files MOSFET: IONT INCA		-		• M		• - D,J											•	
SEM-PW-06 New / change of backside operation (grinding / metallization)	P P	Change of bottom layer of die (between die and leadiname). Change in process, material, or dimensions necessary. Alternative see SEM-PW-O9	e. g. change from CriNV/Au to CriNV/Ag	С	A: if thermal conductivity is affected (like MOSFET; IGBT, IGBA package, stacked dae,) A: if repact on ISBAC or ESDS behavior cannot be evaluated / excluded on component level.		•		• M	-	•				- M	М	• •		- н	н		•	AEC-Q100: Applicable to all ament power devices
SEM-PVI-07 New / change of metallization / visa / contacts	P P	Change in metalization of bondpads, material, layer thickness specifically for chip frontside and internal layers.  Change of top layer on die (between mold communed and die).	e. g. change from ASICu to ACu e. g. change in over pad metallization	С		•			• M		•	• • •	<b>.</b>		•	-	. <b>.</b> .					٠.	
2E3A-PVI-CD New / change of passivation or dis costing (eithout bare dis)  2E3A-PVI-CD Change in process technology roll covered by any other type of change	- P	Change of top layer on die (between mold remounts and riel)  []: If the change in process technology does not influence the integrity of the final product.  [P]: If the change in process technology can influence the integrity of the final product.	s. g. addition of polylenide     (): e.g. change from wet to dry eliching,     s. g. change from horizontal to vertical oven for coldation     (**P): e.g. change of layer thickness	C A	Change of intrinsic mechanical stress might influence electrical function.  Please also check changes described under EQUIPMENT.  Please check if change is described by specific type of change in this matrix.				• M	-	• #,N D,J					-							Qualification effort depends on type of change.
2EM-PVI-10 Process integrity: tuning within specification	Р	Variation within process specification	(-): e.g. process control	С	Please check if DATA SHEET is affected. Please check if SEM-PW-99 is affected.					-						-							
SEM-PW-11 Change of water supplier.	P	(-): If no remaining task in supply chain exist (P): If the change of wafer suppler can influence the integrity of the final product.	(-): a.g. change of wafer supplier with same material corposition.     a.g. same material composition and does not inflamous electrical behavior.  (P): a.g. new supplier with impact on substrate material and I or electrical behavior.	С	Not on component, leated on least structure (hypical for IC), hteraction on component level for discrete components especials.  In case of DCI substrates 19F properties have to be qualified.  Please check if SEM-PW-91 and SEM-DS-01 is affected.	·										-	- @• -						Qualification for C. & p. Controller difficult on product level. Characterisation on wall only on the shadous. Supplier shaded perform a risk assessment of there is a fact-orating dependend risk requiring additional qualification effort. ACC-Q100: "Or the oration debuggs that in involve multiple stributes (e.g., alse, resternish processes), refer to section. A1 or this appendix and section 2.3 of Q100, which also for the selection of secret case set without in cover aft the postal permitsions."
CEM-PW-12 Change of specified water process sequence (deletion and/or additional process step)	Р	Any change which is not covered by another type of change. Risk is to be assessed.  (-): No Risk for Supply chain.  (P): Risk for Supply chain (influence on product integrity)	(-): a.g. change of cleaning process in wafer production.  (P): a.g. additional sinker implication after standard implantation (to protect circuit against interference impulsas).	С						-						-							
3EM-PW-13 Move all or parts of production to a different wafer feb site.	P P	Water fab transition with additional changes (described above). Includes transfer as well as additional site.	e.g. dual source / fab strategy	A	Check if any other type of process change is applicable due to the transfer	•	-		• M		• • J					•			- н	н			AEC-Q100: "For broad changes that involve multiple attributes (e.g., site, materials, processes), refer to section A1.3 of this appendix and section 2.3 of Q100, which at for the selection of worst-case test vehicles to cover all the possible permutations."
SEM-PW-14 Lithography	Р	Change in process technique for lithographic process and material (-): if the change in process technology does not situance the integrity of the final product. (P): if the change in process technology can influence the integrity of the final product.	(-): e.g. exchange of defect mask (P): e.g. change from E-beam process to X-ray process e.g. change from contact into projection mode	С	Please also check changes described under EQUIPMENT.			•	• M	-						-							

			Change in renown technique for reids / interlocar						П															
SEM-PW-15	Cholds / Interlayer Diselectric	-	Change in process technique for odde / interleyer dielectric process (—): The Adraps in process technology does not influence the integrit of the final product.  (P): If the change in process technology can influence the integrity of the final product.		A	Please also check changes described under EQUIPMENT.		 - • M	-	• #,N	D,J -	•			·  -  ·	•						-	•	
	BARE DIE			1																		Ť	-	ELFR can only be performed on packaged test vehicles.  NBT is as nerrowed in deviation from the AEC-Q100 Matrix because there it is a combined type of charge (Water Dirension Thickness). NBT is applicable for water dimension
SEM-BD-01	New final wafer thickness		P Change in final wafer thickness. Change in final ch		A			 		• •				-   -	E	E	Е • -					-	•	No. 1 visa renor in division from the ACC-Q100 nears because there is a combined type of change (Visiter Dimension/Thickness). NBT1 is applicable for water dimension changes only.
	Change of top metallization or bond pad stack		P Change in bondpads (incl. stack below), material, e. g. change from pad pitch, surface changes, layer finickness e. g. change in ow Change of bottom layer of die (between die and		В			 	-	•						-		•				-		
SEM-8D-03	New / change of backside metalization	Р	dimensions.	Criniviau to Criniviag	A			 		• -					N	М	• • •					-	•	
SEM-80-04	Change of wafer setup or number of possible good dies on wafer.	1	P Needed information for pick & place machine.  (I): expount of possible good date on water  (IP): influence on water setup and water respiring  (IP): a (ii): information machine.	om 350 to 240 good dies on ion change for pick & place	В			 	-		-  -					-						-		
SEM-BD-05	Change of optical appearance of wafer edge region (like imide coverage or edge exclusion)	1	Selection of dies in water edge region which have fall electrical functionality.  (I): in case of single die is affected only (P): e.g. appearance (P): in case of single die is affected	ice of wafer edge (rounded ) e as new coating on die	В			 	-							-						-	•	
SEM-8D-06	Die scribe or separation	1	Needed information for asswing and pick & place machine.  P (i): if he change in sawing process does not where the set sawing in process does not where the set in page and read)  (P): in case integrity of the final product.  (P): in case is product to delivened on water and one.  by it in the product to delivened on water and one.	is delivered as known good die ion change for pick & place hange for sawing machine.	В	Please check if SEM-BD-94 is affected.		 	-							-						-		
SEM-80-07	Die Preparation / Clean	-	Change in process technique for de preparation / cleaning    P   (-): if the change in process does not influence file; i.e., change or file integrity of the final product.   P   it is repaid on product integrity is anticipated.	of cleaning time. In cleaning procedure after gequipment.	В	Please check if SEM-BD-96 is affected.		 		• -						-						-		
SEM-BD-08	New / change of passivation or dis coaling	Р	P Change of top layer on die.  e.g. addition of pol- e.g. change of pol-	slyimide lyimide thickness	В			 	-	• #,N	D,J -					•						-	•	
SEM-PA-01	PROCESS - ASSEMBLY  Change in critical dimensions of package	Р	P Change in dimensions of existing package. 8. g. changes in pridevelopment).	cackage dimensions (further	В			• • M					т.						- L 1	1	нн			
SEM-PA-02	Change of leadframe base material	P		n alloy42 to copper yeen two different copper alloys	В			M	-												н -			
SEM-PA-CS	Change in leadhane dimensions	P	Change in leadname dimensions which has impact in the associacy discriming parameter and data	ween two different copper alloys and frame geometry	В	ESD investigations are only necessary if internal ground and power supply connection of leadinare is affected. A: If impact on MEM behavior cannot be evaluated / excluded on component level.		 • • M											- L I	4				
SEM-PA-04	Change of lead frame finishing material / area (internal)	Р	P Change of surface material of die attach pad and sc. g. change from second bond area (e.g. influence in adhesion to moid compound, wedge bond naliability) sc. g. increase of al	n Ag flash to NIP protection layer in Ag spot to Au spot silver plating area	С			 • • M				с • -							- L 1	4	н -	-		For wire bond atrengh test: Pre- & Post-process change comparison to evaluate process change robustness (AEC-Q101).
SEM-PA-05	Change of lead and heat slug plating material/plating thickness (external)	Р	P Change in material and / or process resulting in a e.g. change in hea e.g. change in hear section logy (e.g. pure tin).	at slug stack Sn into NiPd/Au our fhickness	В			 • • N				с • -	. <b>.</b> .						- L 1		н -			
	Bump Material / Metal System (internal)	Р	P Stack die or die to substrate (flip chip) e. g. change of lays  e. g. change of by  e. g. change to Pb  e. g. change of op  e. g. change of op	b-free material opper pillars	С			• • N					•			-			• L			-		
SEM-PA-07	Die attach muterial	Р	Change of die attach material and / or process P resulting in a new technology (e.g. soft solder, spoxy, etc.)		С	A: If impact on EMC behavior cannot be evaluated / excluded on component level (if die attach has impact on electrical conductivity).			-	•						-		٠.	- L 1	4	нн	-		
SEM-PA-08	Change of wise bonding	P	Material, diameter, change in bonding diagram ap, change from:  ap diameter in a new submitting in a new submitted	Au to Cu material 25µm to 23µm diameter single to double band stich bond to stich on ball bond.	С	A: In case of bond diagram change and EMC cannot be evaluated on component level.  Please also check changes described under SIM-EQ-91.		 			-					-	- м -		1					Parameter Analysis: Sizelly required only for Power devices. In general: Die usels for material change with impact on bondprocess (e.g. from Au to Cu/ commended. AEC-0100: Yes bread changes that involve multiple satisfactes (e.g. sile, materials, processale), riefler section AI of the sepander and section 22 of 000; which allows for the selection of worst-case last whickes to cover all the possible permutations.
SEM-PA-09	Substitute / Interpreser	Р	P Change of BGA substrate e.g. changes in no	outing	В	A: Impact on EMC behavior cannot be evaluated / excluded on component level.     A: If impact on electrical function is not excluded on component level.		 M	•			•	т					@• -	- L I		нн			
SEM-PA-10	Dis Overcost / Underfili	-	Supporting layers for complex packages like flip plo and for change in process resulting in a new stacknology.  (-): If change does not influence the integrity of the final product.  (P): If repard on product integrity is anticipated.	of dispensing speed of underfill material	С			 M	•							,			• -		- н			
SEM-PA-11	Overge of molet compound / encapsulation material		P Change of mold compound / encapsulation e.g. change to green, change of life e.g. change of life		С	B: Impact on thermo-machinical shase caused by mismatch of mold compound, inherconnecting technology and carrier is anticipated (people for Prower Powleys).  B: but wave acidizated devices: B: but wave acidizated devices: caused for powleys and powleys and a should be accessed for powley devices accessed for powleys accessed for powleys accessed for the powleys accessed for the powley devices accessed for powleys accessed for the powleys accessed for the powleys accessed for the powley		 M	•				- <b>-</b> -						• L					
SEM-PA-12	Change of hermatic sealing	Р	P Affected areas are material and process of harmetic (e.g. ceramic ) packages, capped die and sealed devices (e.g. pressure senacra)	aling material for RoHS	В	A: impact on EMC behavior cannot be evaluated / excluded on component level (if encapsulation / sealing has impact on electrical conductivity).		 	•			•	- • -			-					- •	-		
SEM-PA-13	Change of product marking		Change of marking on device and / or change in process resulting in a new technology.  (i): if change does not influence the integrity of the first product.  (ii): if impact on product integrity is anticipated.	f appearance (additional from inked marking to laser in 1	В	William Sale Sales Program		 	-			- в -										-		
SEM-PA-14	Change in process technology (e.g. tim and from, headfarm preparation)	-	(-): If the change in process technology does not influence the integrity of the final product.  (P): If the change in process technology can influence the integrity of the final product.	from punched to sawn QFN	В	Please also check changes described under SEM-EQ-01. Please check if change is described by specific type of change in this matrix.		 	-							-								
SEM-PA-15	Process integrity: tuning within specification	-	Variation within process specification.  (-): If suring within process specification does not influence be integrity of the final product.  (P): If repeat on product specification is articipated.	control	С			 								-								
SEM-PA-16	Change of direct maintail supplier	-	Change of suppliers for descrimiterials which are used in assembly process (EOM).  P (-): If change does not influence he integrity of the final product.  (P): I report on product integrity is anticipated.	of wire material supplier. to new mold compound supplier adhame supplier with specific acturing technology	С	Please check if material is changed		 	-															See change of material.
SEM-PA-17	Change of specified-assembly process sequence (delation and/or additional process step)	-	(-): no influence in final product integrity or specified sequence (P): influence in final product integrity or apacified sequence (P): influence in final product integrity or apacified (P): a q, additional exp. deferring the product integrity or apacified (P): a q, additional exp. deferring the product integrity or apacified (P): a q, additional exp. deferring the product integrity or appearance of the product integrity or appearance or a quantity or a quanti		С			 	-							-								Qualification depends on specific change.
SEM-PA-18	Move all or parts of production to a different assembly also.	Р	P Assembly transfer or relocation. Includes transfer as well as additional site.  e.g. dual source /		С	A or B: impact on other type of changes described under PROCESS ASSEMBLY and SEM-EQ-01. Check if any other type of process change is applicable due to the transfer	• • •	 • • M	-		-		т • .			-			- L I		нн	•		Whisker tests have to be done on monitoring basis!  #EC-0100: The bread changes that involve multiple setblotes (e.g., site, materials, processes), rife to section #.3.1 of this appendix and section 2.3 of 0100, which allows for the selection of worst-case test whickes to cover all the possible permutations."
SEM-PA-19	Die scribe or separation	-	Separation process from single water to dies.  (-): If the change in process does not influence the integry of the finist process.  (P): If impact on product integrity is anticipated.	of ked width from sawing to laser cut	С			 • • M														-		
SEM-PA-20	Die Preparation / Clean	-	Change in process technique for die preparation / cleaning  P  (-): if the change is process does not influence (-): a.g. change of (P): if impact on product integrity is anticipated.	of cleaning time.	С			 • - M				•				-					н -			
SEM-PA-21	Modding / Encapsulation process	-	Change in process technique for molding / encapeulation.  (-): if the change in process does not influence the integrity of the final product.  (P): if impact on product integrity is anticipated.		С			• • M	•			- <b>.</b> .				-			- L					

	·																						
	PACKING/SHIPPING									 	 	 						 	_	-1 -1	 		
SEM-PS-01			Packing/shipping specification change.				-		 -	 	 	 			-			 -			 -	-	•
SEM-PS-02		P P	Change of dry pack requirements (e.g. change of MSL)				-		 -	 	 	 -   -			-			 -			 -	-	•
SEM-PS-03	Change of carrier (tray, reel)	P P	Change of carrier (tray, reel)		В				 -	 	 	 						 -					
SEM-PS-04	Change of labelling		Change of tabelling also on real. (f): Change of material label without impact on borroods. (f): Changes of material label information which affects data processing at customer.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of defined nomenclature for data processing	В					 	 	 			-			 -			 -		
	EQUIPMENT																						
SEM-EQ-01	Production from a new equipment/loof which uses a different basic technology or which due to its unique form or function can be expected to influence the integrity of the final product	Р	Change in process technique which is not already covered above.	Change from single wafer to batch process (e.g. over pad metalization) e.g. damber cutting (mechanical to laser cutting)	A				 -	 	 	 			-	-  -	•	 -				-	Affected process change is to check.
SEM-EQ-02	Production from a new equipment/bol which uses the same basic technology (explacement equipment or estimation of existing equipment pool) without change of process.	P	PCN required for dedicated equipment for arealitive component production.  (-): If change does not influence the integrity of the final product.  (P): If impact on product integrity is articipated.	(-): e.g. extension of existing equipment pool (P): e.g. extension of dedicated equipment in case basic technology still need to be proven	с				 -	 	 	 	-  -									•	
SEM-EQ-03	Change in final test equipment type leading to a different test concept.	РР	Change of tester platform with differences in HW or SW that makes a change in test concept recessary (only in case of base dis: final test means wafer test).		с		-		 -	 	 	 			-		•	 -			 -	•	- Cage R&R / delta correlation
	TEST FLOW																						
SEM-TF-01	Move of all or part of electrical water test and/or final test to a different test site.	P P	Tester transfer or relocation. Check impact on SEM-AN-01	Dual source strategy	С	Check if any other type of process change is applicable due to the transfer			 -	 	 	 			-		• .	 -			 -		- Gage R&R / delta correlation
	Q-GATE		includes transfer as well as additional abs.				•			 	 	 						 			 	-+	
SEM-QG-01	Change of the test coverage/testing process flow used by the supplier to ensure data sheet compliance (e.g., dimension/solidism of electrical measurementate flow block, related by the compliance and of monitoring procedure or sampling).	- P	a.g. test flow block, reduction from three temperature measurements to two temperature measurements, change in burn in / run in process (-): it change does not influence the integrity of the final process.  (P): if impact on product integrity is anticipated.	(-): a.g. bast implemented without customer sequirement (P): a.g. reduction from three temperature massurements to two temperature massurements a.g. change in born in / run in process.	С				 -	 		 		-  -	-		•	 -			 -		Parameter Analysis: Delta consistion  * For "burn in" changes ELFR recommended
	Tests, which should be considered for the appropriate process change.						-	- 1	 -	 	 	 			- 1			 -			 - 1	- 1	-
	Tests, which should be considered for the appropriate process change after select	tion of co	ndition table.				-			 	 	 			-			 -					•
	Suppliers performed tests (mark with an 'X' for done or 'G' for generic)																						
	Reason for exception of tests and/or usage of generic data:																						

Not required.
 Information Note required.
 P PCN required.

Abelier of "" indicates that of primarizes of that stress text should be considered for the considered of the considered

	Max Mustermann																													
Date:			Form provided by 2561 - Revision 6.1 - November 2018																										1	
PCN number:														MATERIA	L PERF	ORMANCE			uation		2 – Revis	on March15,	2017)							
Signature:					3														_	_			1		_	_	_	1		
					Evaluation les A/B/C	-	de dad)		3		ap 1 de		s though the case																unged decide	
Mark change with an 'X'	Assessment of Impact on Eupply Chain negarding following aspects  - contractual agreements  - is chinical interface of processability/menufacturability of customer  - born, fit, function, quality performance, reliability	Remai risks w Supp Chai	ining within Understanding of sensiconductors experts of	Examples to explain	ston for di see! xees bee! or as if or qualification max	Further applicable conditions	and by data or audition	Platten M cely	A Temporate Greating	rqeahm Cydrg	a High Lemperatur Operati	mer Nergerakon Gydeg	D Clarate basics Herei	D Ownstellation COM	pole at D leve es lors	riked Steegts	aster Variable Property	durini Bed	on to Salarited	dropes Sapraton	to De Yea	a Ted	on Village Class		and Parisace	- Part Stea	Desc	ste of Cross	rand or dealy six repartition of current all had as decide for, when the didin	Remarks
р п	Type of Change	-	Yes		A Application bit Bit Boardheal C. Component		C OI	Check spe	Ĩ		4	ž	3	à	£		- 1	4	2 8	£	- 2				£ 1		- 6	-	200	
LED-AN-01	ANY	_					A A	O C	-	a		3		8	ä	a	ži	si -	ä a	-	<u>a</u>	9	- 8		a	1 3	2	2		
LED-MHS2	Any change with impact on agreed upon technical contractual agreements.  Any change with impact on technical interface or processability/manufacturability of customer, which is:	-	P trended to be used if no other type of change i applicable but the change affects agreed technical contractual agreements.  Be processability on board level socious china de technical interface makes component terminals.			Check if LED-09-91 is affected				т т	-	-	-						8,T -	+ -	- 1	1					-	+ -	Ė	
	DATA SHEET					Processability should be assessed.		_												_	<del>-</del>	_	<del>-</del>	_	_	_	<del>-</del>	<u> </u>		
LED-09-01	Change of datasheet parameters/electrical specification (min. Inna. /bp. values) and/or PulserDC specification	Р	P Change of application relevant information (e.g. maximum pulse current) due to a technical product or process change.	e.g. change of die substrate material.	A				Е	Е	Е	-	E	Е		-	-	-	s -		Е	-	-		Е	.   .	-	-	Е	
LED-03-02	Correction of data wheel or issue of entitle		Peace indicate clearly, that inforce contains this type of change! Assessment's application required	e.g. Einsta e.g. change of typ, values due to new information about component transacio: e.g. improved statistics. e.g. redución of rass, allowed formatid voltage due to improved statistics.					-	-	-					-	-				-	-			-					
LED-03-03	Specification of additional parameters  Dissort	,	It Definition of an additional parameter which was not specified before  P. If there is a risk on supply chain where at least one additional other PCH-relevant change category will apply.	E e.g.: adding new tested parameter E e.g.: additional temperature coefficient parameter	A				-		-	-	-	-	-	-	-	-		-	-	-			-	.   .		ŀ	٠	Formation-since this is not a product change, only additional information Classification C
LED-DE-91	Design changes in epitasy.		Any device relevant changes in design / layout of epitalial layers.  P Not included: Changes within design runs and design specification without affecting specified functions, parameters and restability.	e.g. change from Double-tenses to Quantum wells e.g. change of barrier trickness		A: change trum Double hoses to Quartum wells —a spectrum is affected															T.	н	П	T						
LED-DE-02		P	P Not included: Changes within deep name and deep specified functions, parameters and intending specified functions, parameters and initiality.  Any change in chip-deeps I spour.  Not included: Changes within deeps name and deeps specification without attenting specified functions, parameters, and initiality.	e.g. change of barrier dischaess. e.g. change in tayout of ourset spreader; dischaess of current apreader e.g. reduction of bond paid size		eels spectrum is affected  A: change in toyout of current spreader radation pattern changes				•	•	•	•	•					• .	м	+		M			в в	р,м			TR might be considered for complex die bond technologies.
LED-06-03	Die shrink	Р	p Shirik of active area. Not included: streing streethed/scribe line	Typical strink of de.	A	Please check if change in process sechnology (LED-PW-dB) is also attended.			•	•	•	•			-	-	-	-			٠,	-				в в				
LEDOS-ON	LEO package (wcept leadhane)		p any change in tousing thickness any change in torn or dimensions	e.g. change of dimensions. e.g. change of x, y, or 2 dimension of the package	в	Check If LED-09-92 is affected which leads to a change of the elibrooptic parameters or distributions.			•	•	•	•		-	•	-	V	٧	• т	D	-	D	0		L I	в в	D		•	
LED-DE-DE	Design of teachains		p any change of leadframe / carrier dimensions any change of ourse dimensions.	e.g. change in leadhame / carrier dimensions in x.y. or z direction e.g. change inner design of the leadhame not affecting the skit certifemence is neighbor of the design.	в	Check FLED-09-92 is affected which leads to a change of the eliziroptic parameters or distributions.											v	v	• т							в в	D	2		
	PROCESS - MAP EX PRODUCTION																		4		4		$\perp$	_	_	4	<u> </u>	<u> </u>		
	New Change of water substrate or carrier naterial		P Newworks substate material.	e.g. different water material to currently released material (change from Sapphire to Silicon)	c	Check I LED-05-92 is affected which leads to a change of the elitrooptic parameters or distributions.		_	•	Р	Р	٠	Р	Р	-	-	-	-	•	Р			Р	-	•	.   .	•	-	•	
LED-PWes	Water diameter		P change of water diameter resulting in equipment and process changes.	*4 * 10 *	с	in case-other type of changes are affected i.e equipmently/screen technology - they need to be identified in addition	•		٠	-	٠	-	Р	Р		-			•	-	•		-		•		-		٠	
LED-PW-03	Nive Strail volfer thickness.	Р	P Change in final water thickness	e.g. change in final chip/de thickness	с	Check if LED-059-02 is affected which leads to a change of the elitrooptic parameters or distributions.	•		•	•	Р	•	Р	Р				-		-					•	в в	•	-	٠	
LED-PW-01	Change of electrically active doping/inglantation element	Р	P Change in electrically active doping/ implantation element resulting in a new technology.	e.g. change from like to C as dopant	c			С	•	-	С	С	•	•		-	-	-			١.	-				.   .	-	-	٠	
LED-PWes	Change of studing	Р	P change in layer sequence or thickness	e.g. change of locitation layer thickness between n- and p- experial	A	customer application needs to be checked due to potential system voltage differences			•	F	•	•	•	•			-	-				F			-		-		•	
LED-PW-01	New? change of metallization (specifically ship trunside)	Р	p Change in neralization of bondpads, material, layer thickness	e.g. change in bond pad metallization thickness	٥			М	•	•	•	•	M,B	M,B			-	-		м		м	N		- 1		-		•	
LED-PW-07	New change of metallization (specifically obje backside)	Р	P Change of bottom layer of die (between die and seadhahw/carrier). Change in process, material, or dimensions necessary.	e.g. change trum Au to Au/Ge	c	differences		м	•	•	•	٠	D,M	D,M			-		•	D,N		D,M	D,1	м	D,M		•		•	
	Change is process technique (e.g., significant process changes the thougraphy, etc.), colde deposition, die back surface preparation/backgrind,		Change from well to dry exching, change from horizontal to serical oversitor addition, change from contact little into impger little,  P Variation within process specification	e.g. change from seet each to dry ettch e.g. change from taser outring (tawing) to plasma outring (tawing) e.g. change from contact time to talepper little e.g. process control	c	change from CVD dep to sputter dep for backside/fromside intradication.     case of row equipment phase direct if LED-PA-54 is also affected.		-	-	-	-	•	-	-	-	-	-	-		-	-	-	-		-	-   -	-	-		Qualification effort depends on type of change.
	Change of material supplier with no impact on agreed specifications	-	p Change of water supplier. Change of supplier for chemicals		c				-		-	-	-	-		-		-					-		-		-	1	-	Qualification effort depends on type of shange.
	Change of specified water process sequence (deletion and/or additional process step)	-	P Change of water supplier. Change of supplier for chemicals revealed for water production.  P Any change which is not covered by another type of change. Note is to be assessed.	e.g. additional cleaning process in water production	c			-	-	-	-	-			-		-	-			-	-			-		-	-		Qualification effort depends on type of change. PPAP has to be updated.
	Change in de coating or passivation	р	P Change in namerial, thickness, and process for coating and passivation	e.g. change from SICO to SINS	o		•	P	•	•	•	Р	Р	Р			-	-		Р	-	Р	Р		- 1	РР	-	-	•	
	New water production location ar transfer of water production to a different not previously released location to be subcontactor:  BARE DIS DELIVERES	Р	P Newworker propduction location or stander of water production with possible additional changes.		c	A or Bt Impact on other type of changes described under PROCESS - WAPER PRODUCTION and EQUIPMENT casegories of this DeQuiMa			$ \cdot $	٠	٠		٠	٠	-	-	-	-	•	-		-			J .	<u>.  </u>		ŀ		
LED-RID-01	New / change of front side metallization		P Change in bondpads, resterial, pad pitch, surface-changes, layer thickness	e.g. change from Au to Au alby e.g. change in over pad metalization						•					-	-		-							•	. [				
LED-80-02	New / change of backside meralication		P Change of bottom layer of die (between die and leadhtame/barrier). Change in process, material, or dimensions.	e.g. change from Au to Au alby		Check if LED-05-02 is affected which leads to a change of the elithroptic parameters or distributions.		М	•	•	•	•	D,M	D,M		-	-	-	•						•		•	-	-	customer application needs to be checked due to potential system voltage differences.
LED-ED-ES	Change of water setup or number of dies on water.	1	P change in spacing between chips and from of water  P change in spacing between chips and from of water	e.g. information change for pick & place machine.					-		-	-	-			-	-	-			-				-		-		-	
LED-ED-01	New Snall voller thickness.	P	Changes in final Chip height (including carrier), very rare and	e.g. change on convener thickness.		Check If LED-09-91 is also affected.	•		•	•	Р		Р	Р	٠	-		-	•						•				٠	
LED RD-05	Change in die coding or passivation PROCESS - ASSEMBLY	Р	P Change in numerial, thickness, and process for coating and passivation	e.g. change from SICS to SINS			•	Р	•	•	٠	Р	Р	Р		- ]	-	ĿĪ	•	Р	1-	Р	Р		- 1	РР	Ŀ	Ŀ		
LED-PA-01	Change of leadhame/carrier base reasonal	Р	P Newleadhane/carrier restrial (newin composition)	e.g. change from copper alloy to bare copper	в	Check if LED-09-02 is affected which leads to a change of the elitrooptic parameters or distributions		•	Р	•	•	- 1	-	-	-	3	-	-		A	-	A	А		P,1	.   .		Р	-	Explanation should be provided in case HDS test is not applicable Regarding applicable materials please refer to the Whiteler standard.
LED-PA-02	Change of leadhame/carrier friething material (nternal)	Р	Change of surface instellal of die attach pad and second bond area (e.g. influence in adhesion to most compound, wedge bond reliability)		A			٠		•	•	•	-	-		-		-	٠.	А	-	А	А						-	MS test should be considered for automotive extentior applications, explanation should be provided in case HSS test is not applicable.
LED-PA-03	Change of lead and hear dug plating maneral/plating thickness (scarral)	Р	P change in numerial and process technique for final pin territorion (e.g. pure tip). Herein package, processability and reliability on board teach as vertical by generic data. Classification depends on impact of change	e.g. change in heat skip stack e.g. change from Sn into NIPOIAu e.g. change of layer thickness.			•	м	Р	•	к	-	-		1		-	-		А	-	A	А		P,1			к		Suplanation should be provided in case PGS test in not applicable Regarding applicable nuteriors please refer to the Sthaker standard.
LEDPAGE	Bump Material / Metall System (internal)	Р	P Stack de or de to substrate	e.g. change to Pt-free numerial	Α .			٠	•		٠				-	-	-		•	W		W					•			
	Die attach naterial  Change of bond wire material	P	P Change of die attach material (s.g. soft odder, eposy, etc.). Thermal management must be respected.  P Material, wire diameter, change in process technique	e.g. change of Ag-glue to Au-glue; e.g. change from 35y to 25y	D A				•									N D		Q P,D		N	Q P,I				•			Site audit for namelal change with impact on bondprocess (e.g. from Au
LED-PAGE	Change of bond was resented  Change in resentation sub-components (excluding LED drip & LED package related items) with impact on agreed specification.	p	P Material, was calender, challing in process technique  Change of sub-camponent supplier using different inchnology/materials  Name: Jump start twict at OSMs regist to recessary	g. change from 30y to 20y      g. using a different ESD-dode in technology and material than resolverity.	A	Check if LED-09-01 is also affected.					-,5									-	+		-			T	Ħ	Ė	Ė	to Cu) recommended.  Qualification effort depends on type of change.
	Die Overcaat / Underfilli	-	Supporting layers for complex packages like tip chip.  — No change in-product integrity of final product.  P. change can influence the integrity of final product.	than previously  Pr. e.g. change of underfill with change of thermal resistance		Check if LED-09-91 is also affected.		P			Р		-	-	-			Р		P			Р		U		U			
LED-PAGE	Change of mold compoundencepeutation/leaking material	Р	P Change of most compound, encapsulation, or existing material regist to attends operat function in case of package instead affect (e.g., browning). Component assessing and board coasing last to be assessed. Mist, night be changed.	e.g. PPR mold compound		Check If LED-09-91 is also affected.			•	-	•	•	-	-	D	3	D	D	• т	Р	Р	Р	Р		Р		-	-		
LED-PA-10	Change of convention material	Р	P Change of resorrai class.	e.g. change from granats to nitrides	с	Check F LED-09-91 is affected for optically histometric parameters.				Υ		•		-		-	Υ	Υ	•	Р		Р	Р		Y	1				
LED-PA-11	Change of direct supplier for converter material	-	P New supplier with same material specification		С				٠	Р	٠	-			-	-	Р	Р		Р		+	Р	_	Р	Ŧ			•	
LED-PA-13	Change of converse process technology	Н	Personal content of the content product of the content of the cont	e.g. change from volume conversion to layer convention; e.g. change from stamping to printing of layer	С В	Check if any change in electro-optical characteristics results in change of data sheet LEID-03-91	•		•	ν ο	•	٠					Y	Υ		z	Z	Z	2		Y	+	1	Ė	•	
LED-PA-13	Change of product masking  Change in process technique (e.g., die attach, bonding, moudring, plating, bler and form,)		P Change of content or change of appearance of data matrix cols  P Change in assembly process technique	e.g. manking of cathoda; e.g. change die attached from gluing to soldering;		A or its Presser check if EQUIPMENT and other type of changes of manerial (LED-PA- 0405/06/07/08/09/10] are affected.																						Ė		Qualification effort depends on tipe of change.
					c	esesteuentestearej av affected																					Ė	Ŀ		I superior us the security.
_																					_									

LED-PA-16	Change of direct nametal supplier with no impact on specification	-	P Change of suppliers e.g. for lead frames, wire national, die attach, electronical components	Change of suppliers e.g. for lead trames, wire material, ESID- diode	u	Assumption that change instellal specification remains unchanged. Otherwise see change of material.		•		-	-	-	-	-	-	-	 -	-	-	-	-	-					See change of material.
LED-PA-17	Change of specified-assembly process sequence (additional antitor deletion of process step)		Addition or defects of a process step in assembly process lequence with promoting agenticar impact on the product performance. It is influence on product integrity in influence on product integrity especied.	e.g. additional or deletion plasma cleaning process	c	Single case assessment necessary to identify possible interactions or risk.			-	-	-	-	-	-	-		 -	-	-	-	-	-	-		-	-	Qualification effort depends on type of change.
LEDPATE	New assentibly location or transfer of assentity to a different not previously released location/side/subcontractor	Р	P New assembly location, assembly transfer or relocation. Transfer of snown sechnology and equipment.	e.g. Dual source strategy	c	A or B: Impact on other type of changes described under PROCESS ASSEMBLY and EQUIPMENT				-	-	-	-	-	-	-	 -	-	-	-	-	-			-		Qualification effort depends on type of change.
	PACKING/SHIPPING		*	•																							
LED-P9-01	Inner Packing/Itigging specification change	Р	P dimension change of direct product packing	s.a. SMT cocket in tace chances				P				P	P	-	-	-	 T										
LED-P9-02	Outer Packing Mipping specification change	1	P to matchanges indirect product packing  P to matchanges in dimension or appearance  P, number of rests in the packing are changing	e.g. pizzebox						-	-	-	-	-	-	-	 -		-			-	-		-		
LED-P9-03	Change of bibeling	1	P change of labeling also on reel.  P is additional information no change of previous information  P: change in content of previous information	(F) e.g. additional information (RuHG stamp) (P) e.g. change of outsiner specific information		Check F LEO-09-91 is also affected.				-	-			-	-	-	 -		-			-			-		
LED-PS-01	Dry aark requirement change	Р	P Change of dry pack requirements (change in MSL)	s.a. change from MSL3 to MSL1		Check F LED-09-92 is also affected.				-	-	-	-	-	- 1	-	 -	-	-	-	-	-			-		
	SCUPMENT	-				The second second		_															_			_	4
LED-EQ-01	Production from a new equipment/bod which uses a different basic technology	Р	P Stange in process technique which is not already covered above.  Note: Major changes affecting the product not covered by the tible require also a PCN.	e.g.change from single water to botch-process. e.g. over pad metalisation e.g. dambar cutting (mechanical to lisser cutting)		Check FLED-09-91 is also affected. Corrosion stability should be assessed.					-	-	-	-	-	-	 -	-	-	-	-		-		T	-	Qualification effort depends on type of change.
LED-EQ-02	Production from a new equipment/boil which uses the same basic technology (replacement equipment or extension of existing equipment pool) without change of process.	-	P POlirequired for dedicated equipment for sensitive component production.	e.g. change from single site to multi-site handler.	c					-	-			-	-	-	 -	-	-	-	-		-		-	-	Qualification effort depends on type of change.
LED-EQ-03	Change in Snall test equipment type that uses a different technology	-	Change of sease platform (e.g. major text program changes , sew texter interface,). It product specification is not affected. It modulat specification is affected.	e.g. change in seat method from od to lumen						-	-			-	-	-	 т		-		-						Gage RMR / sets correlation
	TEST FLOW	_															 										1
LED-TF-01	Move of all or part of electrical water test and/or final test to a different location/libe/subcontractor	Р	P Yester transfer or relocation.	e.g. Dual source strategy	с		• -				В		•	-	-	-	 т	-	В			-	В	ВВ		•	Gage R&R / deta correlation; additional specification check & should be considered for Water testing
	O-GATE																										4
LED-GG-61	Change of the test coverage testing process time used by the supplier to ensure data wheet compliance (e.g. elimination/station of electrical measurementhest flow block; relaxation/renhancement of monitoring procedure or sumplier.	-	P Reduction or additional control steps, test coverage within the process flow	e.g. test flow block like Final test./ final clearance	с					-	-	-	-	-	-		 -	-	-		-	-	-		-		
Tests, which	should be considered for the appropriate process change.									-		-		- 1					-	-	-				-		
Tests, which	should be considered for the appropriate process change after selection of condition to	ble.								-			-		-												
Suppliers pe	formed tests (mark with an 'X' for done or 'G' for generic)																										
_												_					 					_					
Reason for a	sception of tests and/or usage of generic data:																										4

The Management of the Manageme

PCN number:																		Devi	ce eval	luatio	n .													
Signature:										_				MATERI	IAL PERFO	RMANC	E TEST I					Revision	-Septem	ber 14, 2	2017						_		additional	al to
		J			Evaluation level A / B / C		14, 2017		Times di MST			. 5		jon, and			T												904				REC-UNI	od dake
		Remaini risks with Supply Chain?	ng hin 7 Understanding of semiconductors experts	Examples to explain	A Application level  B. Bardelood  C. Component level  7. Nat relevant longual leafon mat to	Further applicable conditions	hand by date or au distresse dressy 104 Revision September	ecitication entil and sub-component)	Temperature Hymidiy Bias o	Auxolane or Unbissed HAST	Temporature Cycling Power Temperature Cycling	Hgh Temperature Strasge L.	1.96.72	NVMEndannos, Data Raten Operational Life	Wire Bond Shear Wire Bond Pull	Physical Dimensions	Solder Ball Shear Load frei gity	Xray/CSAM Bectoric Dicharge	Harran Body Abdell B ectoric Discharge Charge d be vice Abdel	Larchup	Bechal Deutsulon	Faut Grading Characterisation	Boctom gratic Compatibility	Soffmor Rate Monocasis Designed Tree	Hermatic Package Test Ps cleage Drop	Lid Tompae	Die Shair Merna IV/ster Vap or	Board Lavel Politicality Love Temperature Storage LI	Sart Up and Temperature St	R.O.P. MCM Drop. Test. Destruidate Physical Analysis	Хеву	Aco usit o Microscopy	Washinted (60 00006 Tales, JEDEC JESS) Permittee Analysis	Remi
	Type of change	No   1	•		480. 480.		AEC-Q	Deck of s	2	9	2 g	HIST W HIST	E2	80 9	8 8 g	8 8	8 2	A 200	8	3	8	9 8	OVE EV	E 0	H 680	5 1	g §	2 E 2	dall s	Yes I	AN HE	- N7		
	Any change with impact on agreed upon technical contractual agreements		P intended to be used if no other type of change is applicable but the change affects agreed technical contract of acceptance.					-	-					-																		-		
MCM-AN-02	Any change with impact on processability/manufacturability at customer, which is not covered in the matrix below.	Р.	P Any change which is not covered in the matrix below but risk assessment at customer is recommended.		В				<u>.</u>					-																-	ŀ			•
MCM-DS-01	CATA SMEET  Change of distantiest parameters/electrical specification (min.hrax.hyp. values) and/or ACIDC specification	P	p Update of data sheet because of technical change the product.	e.g. recommendations for pull-up-lpull-down or NC pins, MSL.	A				1	1-1			1.	-		. [ - [		П		1 - 1	-		- 1			1.			П	1	Т	- 1	- 1	
MCM-OS-02	Correction of data wheet / errors		p. Update of data sheet because of schricial change the product.  No submission of beautiful product, process or test. New description of behaviour which was not specified to been or which is deferred two invital specified to been or which is deferred two invital specified to been or which is deferred two invital specification. Please indicated called the product of the specified to the specified to the specified to the specified that is not invited to the specified that is not invited to the specified that is not invited to the specified to the specified that is not invited that it is not invited to the specified that it is not invited th	e.g. Errata	A				1														-											
MCM-DS-03	Specification of additional parameters		parameter. No technical change of the product. (i): Definition of new parameter which was not documented below. (iP): Not known as single change. Only in combination with other changes.	撰: e.g. adding new tested parameter.						-				-															-					
MCM-CE-01	CESCAL Firmulas modification		htsgrated software by design or memory as define by supplier.  (i) Firmware modification or update without effect or threstional performance at the customer (bug list).  (ii) Firmware modification or update with effect of functional or tellular performance at the customer or the	d  d  (Re.g. addition of Firmware opportunities  (P): e.g. bug fis with impact on functional performance	*									-							-										-			
MCM-06-42	Change that adds or subtracts sub-components from the module DCM	P	Р	e.g. addition of passive elements in filter circuit	A				0.		. @.	e• •								•	•		•	м @	. O.•!	. 6	ķF -				ŀ	-		•
MCM-PA-01	PROCESS - ASSEMBLY - MATERIALS  Replacement of any sub-component by a Non-AEC qualified sub-component	P	Change from an AEC Qualified sub-component to: Non-AEC Qualified sub-component or Change from a Non-AEC Qualified sub-component to another Non-AEC Qualified sub-component		A			٠						•		-				•	•			м @	(a,e)	·	ÈF.			. e	. 6.	@•		•
MCM-PA-02	Replacement of any sub-component by an AEC qualified sub-component	P	Change from an AEC Qualified sub-component to P. Non-AEC Qualified sub-component of a power of the Control of t	n n		Requires additional evidence that new sub-component is AEC qualified		٠	1	-		٠.		•						٠	•		٠		(•,D @		kF -				. 6.			
	Replacement of any sub-component by an AEC qualified sub-component Critical characteristics of sub-component are <u>ned</u> affected	1 1	<ul> <li>e.g. with no impact on electrical robustness (ESD, latch up,) electrical functionality, test coverage</li> </ul>		с	Requires additional evidence that new sub-component is AEC qualified		٠	Ŀ	1		. 6	_	e•				++-	. @.	_	-				(•,D	. 6	F -		Ш	. @		@ •	4	•
_	Change within a sub-component that has been requalified Critical characteristics of sub-component are affected		<ul> <li>e.g. with impact on electrical robustness (ESD, late up,) electrical functionality, sest coverage</li> </ul>		A	Requires additional use of the appropriate ZVET DeQuilla (e.g. active, passive component) for qualification of the changed sub-component  Requires additional use of the appropriate ZVET DeQuilla (e.g. active, passive component) for qualification of the changed sub-component properties of the changed sub-		٠	Ŀ	44				٠				<u> </u>		٠				M @			F -		Ш	4	Ŀ	4	_	•
MCM-PA-05	Change within a sub-component that has been requalified Critical characteristics of sub-component are <u>set</u> affected	-	p e.g. with no impact on electrical robustness (ESD, latch up,) electrical functionality, test coverage		с	active, passive component) for qualification of the changed sub- component	•	٠	L	44		. 6	•	@•				6	. 0.	@•	• (	3 • 6 •	• (	8 M @	•,D -	. 6	F -	· ·	ш	4	Ŀ	-	4	•
MCM-PA-06	Substants change affecting module schematic Changes to the internal dimensions and / or schematics)		Design change and rousing Thange in substatus, leadfame dimensions which has impact to the specified electrical parameter ac data sheet or specification (e.g. heat sirk, pin dimensions, die paddle sizm,) Not included. Variation within specification.		*			٠	8.	4	• @ K	٠.	•	- 6	3 • 0 •			٠.	• •	٠	٠		٠	м					Ц	. 6.				•
MCM-PA-07	Change to the processes used in-module assembly (e.g., pick & place, die attach, bonding, reflow, encapsulation, singulation, die overzoat, underfill, die preparation, die disaré)	- 1	(-): If the change in process technology does not influence the integrity of the final product.  (P): If the change in process technology can influence the integrity of the final product.	(-); e.g. turing within process specification	с				٠	Ш	• @ K	. @	٠.	-		•	•				ен	. @•	-			-		Ш		. 6	Ŀ			•
MCM-PA-08	Process integrity: saving within specification	- 1	Variation within process specification  (—) Training within process specification does not induce the integrity of the final product.  (P): Elimpact on product specification is anticipated.		с			٠	Ŀ					•						-			-					Ш		4	Ŀ		-	
MCM-PA-09	Change to materials used in module assembly (e.g., achesive, underfil, encopsulate, solder, apone, bump material, die attach material, bord wire, die overcost, substrate, haufframe bose material)	P	Change of used material (e.g. bump material, die artisch material, oith solder, eposy, etc.) Change of bond wire material, diameter, change in bonding diagram Change of suppliers for direct materials which are		с	B: impact on the mome charical stress caused by mismatch of mold compound, insuconnecting technology and carrier is an accipated.  B: external lead finishing material is affected.	·	٠	٠	$\perp$	• @ K	@• e	@ E	-	• •	•	• •				٠	. @•	•			•				. 8.				•
MCM-PA-10	Change of direct material supplier	- 1	Change of suppliers for direct materials which are used in assembly process (BCM).  (**) ** Change does not inhereon the integrity of the final product.  (**)**PE ** Empact on product integrity is anticipated.		c	Please check if material is changed!  A of B: impact on other type of changes described under PROCESS ASSEMBLY and SEMA-EQ41.								-							•		-			-					Ŀ			See change of material.  Whisker tests have to be done on monitoring ba
MCM-PA-11	Change to assembly location (Move all or parts of production to a different assembly site)	P	Assembly transfer or relocation includes transfer as well as additional site  Change of marking on-device and / or change in	e.g. dual source / fab storingy  (ii) to e.g. change of appearance (additional marking	c	PROCESS ASSEMBLY and SEM-CQ-01. In case of Cu wire product please consider ASC-0006.	•	•	٠	11	• @ K	•	•		• •	• •	@Т.			•	•	. 6.	-			-		H	$oldsymbol{\parallel}$	@ •	-	. (	8.	<ul> <li>ASC-Q100: "For broad changes that invoke mu processes, refer to section A.1.3 of this append the selection of worst-case test vehicles to cover</li> </ul>
MCM-PA-12	Change of product marking  PACKING/SHPPRG		Change of marking on-device and/ or change in process resulting in a new technology.  P (6): If change does not interne the imaginy of the final product.  (P): Empact on-product integrity is anticipated.	(P): e.g. change from inked marking to laser marking e.g. marking of pin 1	В				L	П						в -	1	Ш			•	1	•					Ш	Ш	1	Ŀ			
MCM-PS-01	Packing/shipping specification change	P	Packing httpping specification change.     Change of dry pack requirements (e.g. change of MSL)		:				F	$\pm \pm$								H											Ħ	=	H		7	
	Owage of carefor (1915, mail) Owage of baseling Owage of baseling	P 1	Mil.) P Change of carrier (tray, nee) Change of bibelling also onneel. (g): Change of maintail bode without impact on P barcode. (P): Changes of maintail belair information which which data processing at customer.		В																													
	EQUIPMENT  Production from a new equipment hould which was a different basic such voluge or which due to its unique form or function can be expected to influence the imaging of the final product.		P Change in process technique which is not already observed above.					<u> </u>	r	Ħ		-   -									•	. @•	-						Ħ		Ī	i		Affected process change is to check.
MCM-EQ-02	Production from a new equipment/bool which uses the same basic technology (explacement equipment or extension of existing equipment pool) without change of process.	- 1	PCN required for dedicated equipment for sensitive component production.  P (-): If change does not influence the integrity of the final product.  (P): If impact on product integrity is anticipated.		с				4				-																					

MCM-TF-01	Change to testing location (Move of all or part of the final test to a different test site)	Р	Teaser transfer or relocation.  P Check impact on MCM-NAV-1 budges transfer as well as additional size.  Dual source strategy budges transfer as well as additional size.	С			 		-	 				@• ·	-						•	Gage R&R /	delta correlation		
	O-GATE																								
MCM-QG-01	Change of the test covariage leading process flow used by the supplier to ensure data their compliance to a minimal challetion of electrical measurement test flow block absolution/arthrocenser of excelleng procedure or excepting	-	s, part for block, modution from three temperature    P	c			 			 	-			@ • ·									naljelis: Delta consisti / changes ELFR reco		
	Tests, which should be considered for the appropriate process change.		<u> </u>						1.1								_	1.1.							
				_			 			 												1			
	Tests, which should be considered for the appropriate process change after sell	lection of	condition table.				 			 															
	Suppliers performed tests (mark with an 'X' for done or 'C' for generic)																								
	Reason for exception of tests and/or usage of generic data:																								

Not required.
 Information Note required

p PCN required.

Asked or " ristingue has purformed or 17 at draws had should be considered for the appropriate process and a should be considered for the appropriate process and the considered for the considered for draws. As the considered for draws and the consi

	Worked on	Л																				
		Max Mustermann	Form provided by ZVEI - Revision 4.1 - I	Vovember 2019																		
	Date:																					
	PCN number:												valuation								additional to AEC	
	Signature				3					MATERI	AL PERFORMANC	E TEST RESULT	S (on the basis	of AEC-Q200 R	evision D)						additional to AEC- Q200	
Mark change with an "x"					E-salasticon lived A / B / C	or alto check)												8			SDOOD) The goal device settation	
	١,	Assessment of impact on Supply Chain regarding following aspects - contractual agreements - seelmail furthers of processability intendant stability of customer - form, fit, function, quality porformance, reliability	Remaining risks within Supply Chain? Understanding of component experts	Examples to explain	Further applicable conditions  Further applicable conditions  Further applicable conditions  Further applicable conditions  Further applicable conditions	estusion be enabled by data or setting C-Q200 Revision [ Ket specification we restrain any)	Hgh Femp Exposure (Bons) Temperatus Cycleg Destructive Physical Analysi	MX skew Posistance Based Handly	Operatoral Life Exernal Yacot Physical Desertion	Terreinal Shangth (Leadat) Resistance to Solvents Mechanical Shock	Vitration Vitration Resistance to Soldering Hear	Thermal Stock  Electronatic Dicturge #90 Submitted by	Electrical Characterization Plantmobility	Board Plex Terrifical Strength (SAC)	Bern Load Test Plane Retardance	RossionLib Suge Vehage	Sat Groy	Electrical Translers Conducts Shear Strength	Fact Current Durability End of title Mode Verification	Junp Bart Endurance Load Dump Endurance	Wheler Test (ICC 0000 Test, 4000 A Parander-Nelysis Compation Convert who Compation of derival of	Remarks
Selection of component	ID	Type of change NETWORKS & RESISTORS	No Yes		580.	S A SE			8 8 90	11 0 13	N 18		11 20	н и	25 24	25 27	э	30 31	и и	34 35		
NETWORKS & RESISTORS	PAS-RES-AN-01	ANY  Any change with impact on agreed upon technical contractual agreements	P Intended to be used if no other type of change is applicable but the change affects agreed					1 1										1 1			$\overline{}$	
NETWORKS & RESISTORS	PAS-RES-AN-02		P P is approximate change street agreed technical contracted amesimisms	Technical interface means component terminals.	В															1 1	@•	
NETWORKS & RESISTORS NETWORKS & RESISTORS		DATASHIFET									$\overline{}$				_							
NETWORKS & RESISTORS	PAS-RES-DS-01	Change of datasheet parameters/electrical specification (min/max/hyp. values) and / or ACIDC specification	P P Crange or application research information Not included: Editorial changes.  No technical change of product, process or	e.g. lighten of electrical parameter distribution	A Plak assessment depending on change for each application.												+ +				+	
NETWORKS & RESISTORS	PAS-RES-DS-02	Correction of data sheet or issue of emata	No skohnizal change of product, personal or last.  No skohnizal change of product, personal or last.  I product of the personal change of the last not personal control or last not personal control or last specification.  Please indicate clearly, that lefonder contains this type of change!  Assessment in application regulated?		A												-					
NETWORKS & PESISTORS	PAS-RES-DS-03	Specification of additional parameters	Description of a new not previously covered parameter.  I P (E: no influence (FF, Rsk assessment depending on change I such application to provide evidence of additional parameter (ext. eviluation)	e.g. adding new (tested) parameter.	A																- -	
NETWORKS & RESISTORS		MATERIAL  Change of material composition - InkWine material of Resistor element	P P Change of Ink / Wire material	e.g. resistor poste, NCr, resistor wire	c			1.1.		w		• F -	в .		- R						- @•	
NETWORKS & RESISTORS			P P Change of Ink / Wire material	e.g. AgPd paste, Ag paste, lead wire, NCr for side termination	В					w		• E -	в .		- R						. 6.	
NETWORKS & RESISTORS			P P Change of Package	e.g. for chip res.: final coating, epoxy	В										- R		-				Chec	ck whether AOI at tier 1 can be
NETWORKS & RESISTORS	PAS-RES-MA-04	Change of material composition - Passivation	P P Change of Passivation /Inner protection	e.g. change of glass	с				• •			• • •			- R		N					
NETWORKS & RESISTORS	PAS-RES-MA-OS PAS-RES-MA-OS	Change of material composition - Substrate material  Change of supplier of material	P P Change of substrate material  Change to a new or additional material supplied or an experiment of the supplied of the supp	er	c c								В •		- R	1 1	- N				- @• Assur	umption material specification sins unchanged. Otherwise see
NETWORKS & RESISTORS				ed or ard source purpose									•   •		·   K		I N				chance	as of material.
NETWORKS & RESISTORS	PAS-RES-DE-01	Changes of termination, surface linish, shape, color, appearance or dimension structure	j P Change of package - P Change of package/	e.g. change of glass, laquer, epoxy,	B C			+ :   :							- R		- N					
NETWORKS & RESISTORS		PROCESS																				
NETWORKS & RESISTORS	PAS-RES-PR-01	Changes in process technology or manufacturing methods - Ink Fire	- P Change of ink fire process	e.g. change of firing profile e.g. change from normal atmospher to nitrogen atmospher	с	• •				R			В -	R R			•				- @•	
NETWORKS & RESISTORS NETWORKS & RESISTORS	PAS-RES-PR-03	Changes in process technology or manufacturing methods - Ink Print Changes in process technology or manufacturing methods - Trim	P Change of Irik print process     P Change of Irim process	e.g. change from mill trimming to laser trimming	c c					R		: : :	В -		- R						· @•	
NETWORKS & RESISTORS	PAS-RES-PR-04 PAS-RES-PR-05	Changes in process technology or manufacturing methods - Lead Form  Changes in process technology or manufacturing methods - Termination Attach	P Change of lead form process     P Change of termination attach process.	e.g. change from bending to punching e.g. chip resistors: electroplating process e.g. welding of leads for through put devices.	В В					•			В -				N N				- @•	
NETWORKS & RESISTORS	PAS-RES-PR-06	Changes in process technology or manufacturing methods - Marking	- P Change of marking process	e.g. welding of leads for through put devices.  e.g. change from tempon printing to leaer marking	В												-				1 · · ·	
NETWORKS & RESISTORS		Changes in process technology or manufacturing methods - Molding	P Change of molding process     P Variation within process specification.		B C									: :	- R							
NETWORKS & RESISTORS NETWORKS & RESISTORS	PASHESPINIS	PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS		e.g. process cores		-																
NETWORKS & RESISTORS	PAS-RES-PN-01 PAS-RES-PN-02	Packing / shipping specification change (loosening of tolerances)  Dry pack requirements change	P P Change of packing specification. P P Change of dry pack requirements.	e.g. number of pieces on reel.  e.g. change of MSL e.g. change in dry pack assurance (HIC, MSB)	В В			1 1													<del>                                      </del>	
NETWORKS & RESISTORS	PAS-RES-PN-03		P P Change of carrier	e.g. change in dry pack assurance (HC, MSB) e.g. change by material e.g. change by geometry.	В												+				<del></del>	
NETWORKS & RESISTORS NETWORKS & RESISTORS		PACKING / SHIPPING - VISUAL INSPECTION		e.g. change by geometry.												<u> </u>		$\perp$				
	PAS-RES-PV-01	Change of labeling	P Change of labeling, also on real.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В																	
NETWORKS & RESISTORS	PAS-RES-PV-02	Change of product marking	I P Marking on device.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В																<del>  .   .    </del>	
NETWORKS & RESISTORS																						
NETWORKS & RESISTORS	PAS-RES-PV-03	Change of packing/shipping specification  LOGISTICS / CAPACITY / TESTING - EQUIPMEMENT	P P Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of documentation in packing specification				1 1														
NETWORKS & RESISTORS  NETWORKS & RESISTORS	PAS-RES-EQ-01	LOGISTICS ! CAPACITY! TESTING - EXCEPTIONATION   Production from a new equipment/foot which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product.	p  Change in process technique which is not already covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e.g. new equipment supplier with different process concept.	с				•				В -								- @• Perfor	effort depends on final risk essment. commance test according to affected cess change.
	PAS-RES-EQ-02	Production from a new equipment/loci which uses the same basic technology (replacement equipment or extension of existing equipment pool)	PON required for dedicated equipment for sensitive component production.	e.g. additional equipment to increase production capacity e.g. replacement of same equipment	c				•   .   .				в -								- @• Test e assess	effort depends on final risk samers. Performance lest ording to affected process change.
NETWORKS & RESISTORS  NETWORKS & RESISTORS  NETWORKS & RESISTORS	PAS-RES-EQ-03	Change in final feet equipment type that uses a different technology  LOGISTICS / CAPACITY / TESTING - PROCESS FLOW	P P Change of final test equipment which use different technology. PCN required for descated equipment for sensitive corameters.	e.g. change of teater platform	c								@B -									e R&R / delta correlation
	PAS-RES-PF-01	Manufacturing sits transfer or movement of a part of production process to a different location/site	P P Change of manufacturing site. Includes traveller as well as additional site. Note: Reorganization inside one plantistie is not sifected!	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.	В								в -		- R		N				@• @•	
NETWORKS & RESISTORS	PAS-RES-PF-02	Elimination or addition of a manufacturing process step	not affected  . P Change of manufacturing process sequence	e.g. dual source / fab strategy e.g. washing / cleaning process e.g. change of order of processes	c								®B ⋅								- @• Chara	racterisation depends on impact of faction flow.
NETWORKS & RESISTORS NETWORKS & RESISTORS		LOGISTICS / CAPACITY / TESTING - Q-GATE	, and a second process sequence																		produ	ction flow.
NETWORKS & RESISTORS	PAS-RES-QG-01	Change of set coverage used by the supplier to ensure data sheet compliance (e.g., stimination) addition of electrical measurement/test flow block, relaxation/enhancement of encoloring procedure or sampling!  NDUCTORS	- P Change of test coverage.	e.g. change from 100% to sample Inspection e. g. test flow block, reduction from three to teo temperature measurements e.g. change in burn in/run in process.	С																R (ale R (val proce	lectr. funct.): test coverage. slability) only for change in burn in sess.
INDUCTORS INDUCTORS	_	ANY	Intended to be used if no other type of change														1 1				$\overline{}$	
INDUCTORS	PAS-IND-AN-01		P P Intended to be used if no other type of chang is applicable but the change affects agreed serbal-ad revolves all seventences.  P P	Not relevant for technical evaluation.  Technical interface means component terminals.	в																@• -	
INDUCTORS INDUCTORS		Projecting the test appearance of the Communication	PP	Technical interface means component terminals.	8			1 1 1			1 .   .						-				6.	
INDUCTORS	PAS-IND-DS-01	Change of databaset parameters/electrical specification (min./max/lyp. values) and / or ACIDC specification	P Change of application releases information Not included: Editorial changes.  No technical change of product, process or test.	e.g. lighten of electrical parameter distribution	A Plak assessment depending on change for each application.												-					
INDUCTORS	PAS-IND-DS-02	Correction of data sheet or lease of emala.	No technical change of product, process or  No technical change of product, process or  Now description of behavior shich was not  specified better or which is different from  intelligence of the control of  process indicate clearly, that inflores contains  this type of change! Assessment in application regulated?	e.g. data sheet correction because of new information about component behavior	A												-					

TORS	PAS-IND-05-03	Specification of additional parameters.	I P	Description of a new not previously covered parameter. No schnical change of the product. No schnical change of the product. (IP) Filth assessment depending on change for each application to provide endonce of additional parameter (stat. evaluation)	e.g. adding new (tested) parameter.	A																		-				
TORS	PAS-IND-MA-01	MATERIAL  Change of material composition - Bobbin Material	РР	Material without magnetic function ("Spulenkörper") typically made by plastic material	e.g. change from Thermoset to Thermoplastic	В			•			• @•	-		-	• -						-	-   -	-		-		
TORS	PAS-IND-MA-02	Change of material composition - Core Material	P P	material  Change of core material, which is material with magnetic function	e.g. change from NZn into MnZn	Α		• @•	•		- •	• .	-		-	• -	- в	•			-	-		-		-	- @•	
mps	PAS-IND-MA-03	Change of material composition - Insulation Material	P P	Change of insulation material	e.g. who insulation, insulation tapes, e.g. change from Polyurethane to Polyamide	с			•			•	-		•	• A	- в	•			-	-		-		-		
rons	PAS-IND-MA-04	Change of material composition - Lead Material	Р Р	Change of lead material	e.g. change from tin coverd to non-coverd lead material	В	-		-		- •	•	•	•	•		• -	-			-	-		-		-	@• -	
mes	PAS-IND-MA-05	Change of material composition - Mold Compound	РР	Change of mold compound material	e.g. change to green mold	В			•			•	-	•   •   •	-   -		- в				-	-		-		-	- @•	Electrical function affected if mechanical shess distribution changes. ACI, wave soldering and board costing has to be assessed. MSI might change.
	PAS-IND-MA-06	Change of material composition - Solder Material	РР	Change of solder material at internal connection.	e.g. change of SnAgCu composition	В			•				•		@•	• -		-				-		-		-	@• -	
TORS	PAS-IND-MA-07	Change of material composition - Wire / Foll Material	РР	Whe for wounded inductors. Foil for multibyer inductors (inner electrode).	e.g. change of Cu composition	в		. @•	-				-				- в	-			-	-		-		-	- @•	
TORS	PAS-IND-MA-08	Change of material composition - Que		Change of glue material	e.g. change from glue A into glue B	с			@•			@• -			• @•		@• @E									1.		Considere in case of core-core glue the air gap.
TORS	PAS-IND-MA-09	Change of supplier of material		Change to a new or additional material supplier at component manufacturer.		с			•			• •		-	. 6.		- в	+								+	- @•	the air gap.  Assumption material specification semains unchanged. Otherwise see change of material.
TORS	PAS-IND-MA-10							• •		•			<b>Ŀ</b>			<u> </u>					-	-		-		+-		temains unchanged. Otherwise see change of material.
TORS	PAS-IND-MA-10	Change of material composition - Potting Material  DESIGN	PP	Change of potting material	e.g. change from epoxy resin to silicon	C A: If influence on other connect PCB or laquer expected.		•	@•		@• -	@• @•	- 1	-   -   @	• @•		@• @E	- 1	-   -		1 -	-	-   -	-	.   .   .	1	- @•	
	PAS-IND-06-01	Changes of termination, surface finish, shape, color, appearance or dimension structure - Bobbin	I P	Material without magnetic function ("Spuleristriper") typically made by plastic material	e.g. construction / dimension change of bobbin	В	- •		•				-		-		- в	-			-	-		-		-	- @•	
TORS	PAS-IND-0E-02	Changes of termination, surface finish, shape, color, appearance or dimension structure - Land Terminate	I P	Change of lead/terminals	e.g. change from PTH terminals to SMD terminals	A			-				•		•			-			-	-		-		-	@• @•	Effect regarding EMC relevant for high frequency only.
	PAS-IND-0E-03	Changes of termination, surface finish, shape, color, appearance or dimension structure - Mold	I P	Change of mold	e.g. new mold material with different color	В			•		@• -		-		-		- в	-			-	-		-		-	- @•	Parameter Analysis only for components where mold material has magnetic function
TORS	PAS-IND-DE-04	Changes of Inner construction - Core Construction	. Р	Change of core construction, which is material with magnetic function	e.g. change fromdrum core & shield core into pot core & cover plate core	A		-	•				- [			• -	- В				-	-		-		-	- @•	
TORS	PAS-IND-DE-05	Changes of Inner construction - Insulation System		Change of insulation system	e.g. wire insulation, insulation tapes, e.g. change from Polyunethane to PTFE (Tellon)	с		- @•								- A		-			-	-		-		-		
TORS	PAS-IND-DE-06	Changes of inner construction - Wire / Poll Construction	. Р	Change of wire / foil dimensions	e.g. change from round cross section to rectangular cross section e.g. from single wire to litz wire	В			•				-	@	• -	•	- в		• •		-	-		-		-	- @•	
TORS	PAS-IND-DE-07	Changes of termination, surface finish, shape, color, appearance or dimension shucture - Politing Material  PROCESS	I P	Change of potting dimension	e.g. change of polling (filling) height	C If data sheet is affected (PAS-9 01)	0.05		@•			@• @•	-	@	• @•		- @E				-	-		- [		1 -	- @•	
TORS	PAS-IND-PR-01	PROCESS  Chances in process technology or manufacturing methods - insulation Strip		(Mechanical) removal of insulation.	e.g. change from mechanical removal to laser	В											@• -							T		T.		Mechanical damage of sitre, impact on solderability in case of stripping process is affecting soldering
TORS		Unanges is process sectnology or manuscruring memois: - insussion serp  Changes in process technology or manufacturing methods - Lead Prep. / Plating		Change of lead prep. / plating	removal  e.g. change from hot dip tinning to electroplating	В			•															+				stripping process is affecting soldering area. Influence regarding reliability of solder
TORS	PAS-IND-PR-03	Changes in process technology or manufacturing methods - Lead Prep. / Plating  Changes in process technology or manufacturing methods - Terminal Attach	. P	Change of lead prep. / plating  Connection of wire terminal and / or connection of termination to core/bobbin.	e.g. change from hot dip tinning to electroplating e.g. chante from Manual winding to Semi-automic winding (winding of wire on terminal)	С			-			•	-		$\rightarrow$	•										۱÷	@• -	joint.
TORS	PAS-IND-PR-04	Changes in process schnology or manufacturing methods - Marking	. P	connection of termination to core/bobbin.  Change of marking process.	winding (winding of wire on terminal) e.g. change from ink marking to laser marking	В						•			-			-			-	-		-		-		FLYESIN G CONSCIENCES
TORS	PAS-IND-PR-05	Changes in process technology or manufacturing methods - Molding	- P	Change of molding process	e.g. change from one component molding to two component molding (other technology needed)	В	•		•				-			• •	- B				-	-		-		-		
TORS	PAS-IND-PR-05 PAS-IND-PR-07	Changes in process technology or manufacturing methods - Soldering Internal Connections	. Р	Change of soldering internal connection  Change of winding - insulation		В			•			• -	•	•		• -					-	-		-		-		
TORS	PAS-IND-PR-08	Changes in process technology or manufacturing methods - Winding Insulation  Changes in process technology or manufacturing methods - Winding Wine		Change of winding - insulation  Change of winding - wire	e.g. change from manual to automatic process e.g. change from semi-automatic winding to full automatic winding	С									•	- A	- B				1	-		-		+ -	. @•	
TORS	PAS-IND-PR-09	Process integrity: tuning within specification		Variation within process specification.	e.g. process control	С			-				-		-			-			-	-		-		-		
TORS	PAS-IND-PR-10	Changes in process technology or manufacturing methods - Polling	. Р	Change of polling process	e.g. change from manual potting process to automatic potting process	С	• •		@•		@• -	@• @•	-		-			-			-	-		-		-		
TORS	PAS-IND-PN-01	PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS Packing / shipping specification change (lossening of folerances)	РР	Change of packing specification.		В			Г. Т				Т.Т		T . I		T . T .	Т.Т			Τ.			.		Τ.		
TORS	PAS-IND-PN-02	Dry pack requirements change	P P	Change of drypack requirements.	e.g. change of MSL e.g. change in dry pack assurance (HC, MSB)	В																						
TORS	PAS-IND-PN-03					В																						
TORS TORS		PACKING / SHIPPING - VISUAL INSPECTION										_														<u> </u>		
TORS	PAS-IND-PV-01	Change of labeling		Change of labelling, also on real.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В									-						-							
TORS	PAS-IND-PV-02	Change of product marking		Marking on device.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В			-				•									•		-				
TORS	PAS-IND-PV-03	Change of packing/shipping specification	P P	Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of documentation in packing specification				-						-									-				
rons		LOGISTICS / CAPACITY / TESTING - EQUIPMEMENT														i							1 1			i i		Test effort depends on final risk
rors	PAS-IND-EQ-01	Production from a new equipment/loci which uses a different technology or which due to its unique form or function can be especial to influence the integrity of the final product		Change in process technique which is not sheady covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e.g. introduction of potting process	С	•		•				•		•		· @E	-			-	-		-		-	- @•	assessment. Performance test according to affected process change.
TORS	PAS-IND-EQ-02	Production from a new equipment/loof which uses the same basic technology (replacement equipment or extension of existing equipment pool)		PCN required for dedicated equipment for sensitive component production.	e.g. duplication of existing winding machine	С	•		-						-			-			-	-		-		-	- @•	Test effort depends on final risk assessment. Performance test according to affected process change.
rons	PAS-IND-EQ-03	Change in final test equipment type that uses a different technology	РР	Change of final test equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. change of tester platform	С	• •		-				-				· @E	-			-	-		-		-	- @•	Gage R&R / delta correlation
TORS		LOGISTICS / CAPACITY / TESTING - PROCESS FLOW			e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.															$\overline{}$				Ť				
rons	PAS-IND-PF-01	Manufacturing site transfer or movement of a part of production process to a different location/site		Change of manufacturing site. Includes transfer as well as additional site. Note: Reorganization inside one plantiste is your afterhed.	e.n. donlarume / fab siratoru	В			•	•	@• •	@• -	•		•	•	- B	-	•		-	-	-   -			-	@• @•	
TORS	PAS-IND-PF-02	Elimination or addition of a manufacturing process step	. Р	Change of manufacturing process sequence.	e.g. washing / cleaning process e.g. change of order of processes	с	•		-				-		-			-			-	-		-		-	- @•	Characterisation depends on impact of production flow.
rors	PAS-IND-PF-03	Elimination of final electrical measurement / test flow block	I P	Reduction of final testing. PCN required for dedicated final test reductions for sensitive parameters.	e. g. elimination of High-solage measurement	с		-   -	-				-	-   -   -	-			-			-	-		-		-	- @•	Characterization depends on impact of final test flow.
rors		LOGISTICS / CAPACITY / TESTING - Q-GATE  Change of fest coverage used by the supplier to ensure data sheet compliance (e.g.,			e.g. change from 100% to sample inspection																			Ŧ				R (electr. funct.): test coverage.
rons	PAS-IND-QG-01	Orange of test coverage used by the supplier to ensure data sheet compliance (e.g., elimination/addition of electrical measurement/test flow block, relaxation/enhancement of monitoring procedure or sampling)	- Р	Change of test coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature measurements e.g. change in burn in/tun in process.	С			-																			R (electr. funct.): test coverage. R (reliability) only for change in burn in process.
BC / TANEALUM BC / TANEALUM		CERAMIC / TANTALUM ANY																										
IIC / TANTALUM	PAS-CER-AN-01	Any change with impact on agreed upon technical contractual agreements		Intended to be used if no other type of change is applicable but the change affects agreed technical contractual accessments		•			-													-						
RC / TANTALUM RC / TANTALUM	PAS-CER-AN-02	Any change with impact on processability/manufacturability at customer, which is not covered in the matrix below.  DATASHEET	P P		Technical interface means component terminals.	В			ĿĪ	-   -				.   .   .	·			ĿĪ	-   -	-   -	1 .		-   -	•		1 -	@• .	
	PAS-CER-OS-01	DATASHEET  Change of datasheet parameters/electrical specification (min/max/hyp. values) and / or ACIDC specification	РР	Change of application released information Not included: Editorial changes.	e.g. lighten of electrical parameter distribution	A Risk assessment depending on for each application.	tange						-															
IC / TANTALUM				No technical change of product, process or					H																			
IC / TANTALLIM	PAS-CER-OS-02	Correction of data sheet or issue of errats	1 1	test. New description of behavior which was not apacified before or which is different from initial apacification. Pleases indicate clearly, that infoncie contains this type of change! Assessment in application required!	e.g. data sheet correction because of new information about component behavior	A			-	-   -																		
MIC / TANEALLM	PAS-CER-OS-03	Specification of additional parameters	I P	Description of a new not previously covered parameter. No technical change of the product. (It: no influence (It: No influe	e.g. adding new (leated) parameter.	A .							-								-			-		-		

_																							
CERAMIC / TANTALIM CERAMIC / TANTALIM CERAMIC / TANTALIM CERAMIC / TANTALIM	PAS-CER-MA-01	MATERIAL  Change of material composition - Ceramic Sinder P P P	Binder material (ceramic)		c			•   •   •	1 - 1 - 1 - 1		T • T • T	•   •   •	T - T -		- 1 -		1 - 1	- 1				T - T	
CERAMIC / TANEALUM	PAS-CER-MA-02 PAS-CER-MA-02	Change of material composition - Tantalum Binder P P Change of material composition - Dielectric P P	Binder material (ceramic) Binder material (tartial) Distactric change (ceramic only)	e.g. change from wax 1 to wax 2 e.g. change from ceramic A into ceramic B	C C			: :						 C .	. :								
	PAS-CER-MA-04	Change of material composition - Electrode Attach P P	Electrode attach (only tantal, glue, carbon, Agi		c						. с		В -	c •									
CERAMIC / TANTALUM CERAMIC / TANTALUM	PAS-CER-MA-05	Change of material composition - Electrode Material P P	Electrode Material (only ceramic, inner electrode)	e.g. change from spehric to flake shape (N paste)	c												-			-			
	PAS-CER-MA-06	Change of material composition - Encapsulation P P	Encapsulation	e.g. change from epoxy1 into epoxy2	c												-						. Check whether AOI at Tier 1 can be affected
CERAMIC / TANEALIM CERAMIC / TANEALIM	PAS-CER-MA-07	Change of material composition - Lead material / Termination P P	Lead material / Termination	e.g. change from SnPb to pure Sn	С								В -				-						
CERNARY (TARTILLE)	PAS-CER-MA-08	Change of supplier of material . P		e.g. for 2nd source purpose	с								в -		с -		-					. 6	Assumption material specification remains unchanged. Otherwise see chance of material.
CERAMIC / TANEALIM CERAMIC / TANEALIM		DESIGN																					CORECUS TRANSACTION OF THE PERSON OF THE PER
CERAMIC / TANTALUM	PAS-CER-DE-01	Changes of termination, surface finish, shape, color, appearance or dimension structure - Lead Diameter		e.g. change from 0.8mm into 0.6mm	В	• •			$ \cdot \cdot \cdot $	•   •   •	•   •						-			-			•
CERAMIC / TANEALIM	PAS-CER-06-02	Changes of iermination, surface finish, shape, color, appearance or dimension structure -     p	Termination area	e.g. change in width of termination from 0.1 -0.3mm into 0.2 - 0.4 mm	В		•				•						-			-			
CERAMIC / TANTALIM CERAMIC / TANTALIM	PAS-CER-06-03	Changes of termination, surface finish, shape, color, appearance or dimension structure -   p	Terminal interface	e.g. additional layer in termination	В								В -										
CERAMIC / TANEALUM	PAS-CER-DE-04 PAS-CER-DE-05	Changes of Inner construction - Electrode Trickness	Electrode thickness: (ceramic only)	e.g. N layer change from 2.5µm into 3.5µm e.g. Ceramic lever thirkness changes from 3um into	c c							• • •	В .				-	-	-			-	
CERAMIC / TANTALUM		Changes of inner construction - Layer Thickness - P	Layer thickness (delectric thickness)	e.g. Ceramic layer thickness changes from 3µm into 5µm.								• • •	В -		υ .					-		-	•
CERAMIC / TANEALUM	PAS-CER-DE-06	Changes of Inner construction - Number of Layers - P	Number of layers (ceramic only). Allways in combination with PAS-CER-DE-05.	see also layer thickness	С		- с	с - с	с - с	с		с с -	B,C -		с .		-						•
CERAMIC / TANTALLM CERAMIC / TANTALLM	PAS-CER-PR-01	PROCESS  Changes in process ischnology or manufacturing methods - Dicing - P	Change of dicing	e.g. change from cutting to sawing	С								I B I .		с .		т. г						.
CERAMIC / TANTALUM	PAS-CER-PR-02	Changes in process technology or manufacturing methods - Electrode apply - P		e.g. change from wet to dry process	c		с .	c			. с	с с -	B,C -	с .									
CERAMIC / TANTALUM	PAS-CER-PR-03	Changes in process technology or manufacturing methods - Firing - P	Change of firing profile	e.g. seperation of decarbonization and firing profile.	С								в -		с -		-						
CERAMIC / TANTALUM	PAS-CER-PROI	Changes in process technology or manufacturing methods - Lamination - P	Change of lamination / press techinque	e.c. standard cressing to iso static cressing.	С								В -		с .		-						
	PAS-CER-PR-05	Changes in process technology or manufacturing methods - Particle Size . P	Change of powder particle size. Allways in combination with PAS-CER-MA-03.	e.g. change DS0 from 0.5µm into 0.4µm	с								в -				-						
CERAMIC / TANEALUM	PAS-CER-PR-06	Changes in process technology or manufacturing methods - Screening/Printing - P	Change of screening / printing	e.g. change from screen printing into offset printing	С				с	с		. с .	B,C -		с .		-						
CERAMIC / TANEALUM	PAS-CER-PR-07		Change for termination preparation like plating or apply of termination base layer.			_																	
CERAMIC / TANTALUM	PAS-CER-PROF				В	• •							В -										
CERAMIC / TANTALIM CERAMIC / TANTALIM		PACKING / SHIPPING . NEW MATERIAL CRITICAL DIMENSIONS		e.g. process control	С				-   -								لنط						•
CERAMIC / TANEALUM	PAS-CER-PN-01	Packing / shipping specification change (lossening of tolerances) P P	Change of packing specification.	e.g. number of pieces on reel.	В												-						
	PAS-CER-PN-02		Change of drypack requirements.	e.g. change of MSL e.g. change in dry pack assurance (HC, MSB)	В																		
CERAMIC / TANEALUM	PAS-CER-PNOI		Change of carrier																				
CERAMIC / TANTALIM CERAMIC / TANTALIM	PAG-CER-PN-03	Change of carrier (tray, reel) P P PACKING / SHIPPING - VISUAL INSPECTION	C-writte or carrier	e.g. change by material e.g. change by geometry.	В		لنبت										لنا						
	PAS-CER-PV-01	PACKING / SHIPPING - VISUAL INSPECTION  Change of labeling	Change of labelling, also on reel.	(I) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В						1.1.1												
CERAMIC / TANEALUM	PAS-CER-PV-02			e.g. change or customer specific information e.g. change of content of marking																			
CERAMIC / TANKALUM	PAS-CER-PV-02	Change of product marking I P	Marking on device.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В				1 1														
	PAS-CER-PV-03	Change of packing labipping specification P P		e.g. change of documentation in packing specification																-			
CERAMIC / TANEALUM CERAMIC / TANEALUM		LOGISTICS / CAPACITY / TESTING - EQUIPMEMENT	material of the packing.														ш						
			Change in process technique which is not																				Test effort depends on final risk
	PAS-CER-EQ-01	Production from a new equipment/loof which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product	Change in process technique which is not already covered above. Note: Changes affecting the product not covered by the table require also a PCN.	e.g. change from wet to dry technology.	С	•	•		• •	Α	•		В -		С -		-			-		- 6	assessment. Performance test according to affects
CERAMIC / TANTALUM		+															+		-				Test effort depends on final risk
	PAS-CER-EQ-02	Production from a new equipmentition which uses the same basic technology (replacement equipment or extension of existing equipment pool)	PCN required for dedicated equipment for sensitive component production.	e.g. elimination of manual handling processes	c	• • •			• • •	Α	•		В -		С -		-			-		- 6	Performance test according to affecte
CERAMIC / TANEALUM																	+		+				process change.
	PAS-CER-ED-03	Change in final test equipment type that uses a different technology P P	Change of final test equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. change of tester platform	с								@B -				-			-		- 6	Gage R&R / delta correlation
CERAMIC / TANTALUM CERAMIC / TANTALUM		LOGISTICS / CAPACITY / TESTING - PROCESS FLOW	sensitive parameters.																				
CERAMIC / TANEALUM			Change of manufacturing site.	e.g. movement or transfer of manufacturing site or							1 1 1											1 1	
	PAS-CER-PF-01	LOGISTICS / CAPACITY / TESTING - PROCESS FLOW  Menufacturing site transfer or movement of a part of production process to a different location/site P P	Change of manufacturing site. Includes transfer as well as additional site. Note: Reorganization inside one plantiste is	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.	В								в .		с -					-		@• (	2•
CERAMIC / TANTALIM  CERAMIC / TANTALIM		Manufacturing site transfer or movement of a part of production process to a different locationistic P P	Change of manufacturing site. Includes transfer as well as additional site. Note: Reorganization inside one plantitate is not affected.	e.g. dual source / fab strategy		• •							в .		с -			-		-			
CERANIC / TANEALIM  CERANIC / TANEALIM	PAS-CER-PF-01 PAS-CER-PF-02	Menufacturing site transfer or movement of a part of production process to a different locationhole P P  Elements or addition of a menufacturing process slep  . P	Change of manufacturing site. Includes transfer as well as additional site. Note: Recryanization inside one plantitate is not affected!  Change of manufacturing process sequence.		8 C	• • •	• •			· · ·			В .		c .		-			-			Characterisation depends on impact of production titus.
CERAMIC / TANTALUM		Mondecarring sile trender or recomment of a part of production process to a different localisativities  P P P  Granulation or addition of a manufacturing process sleep  LOGITICS CLARACTETYTESTING - G-GATE		e.g. dual source / fab strategy e.g. vashing / cleaning process e.g. change of order of processes	С								В -		c .					-			Characterisation depends on impact of production flow.
CERANIC / TANEALIM  CERANIC / TANEALIM		Mondecarring sile trender or recomment of a part of production process to a different localisativities  P P P  Granulation or addition of a manufacturing process sleep  LOGITICS CLARACTETYTESTING - G-GATE		a.g. dual source / fab strategy a.g. washing / cleaning process a.g. change of order of processes a.g. change from 100% to sample inspection a.g. salt flow block, reduction from three to two heroscalator resourcements.		• • • • • • • • • • • • • • • • • • •				· · ·			B -		c -		-						
CERANIC / TANEALIM  CERANIC / TANEALIM	PAS-CER-PF-02	Idendexing all treative or researced of a period production process to a different localizable.  Demotion or addition of a manufacturing process size  LOGISTICS (CAMACTY/TESTING - 0-64/TE  Dump of the company workly for register to be manufacturing the company of the company workly process to the company workly for register to be manufacturing to the company of the company workly for the company workly or the company control for the cont	Change of manufacturing process sequence.	e.g. dual source / fab strategy e.g. vashing / cleaning process e.g. change of order of processes	С	• • · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • •			• • • • • •			B -	• • • •	c .		-						Characterisation depends on impact of production flow.
CERANIC / TANEALIM  CERANIC / TANEALIM	PAS-CER-PF-02 PAS-CER-QG-01	Bondesting the looker or recovered a part of part of process to a different locations.     Bondestine of a state of a manufacturing process step.     BONDEST (SWINTETTERMS - ) GART     Charge of the company can be to be seen and deliver companies to be considered to the company can be seen as the company can be	Change of manufacturing process sequence.  Change of test coverage.	e.g. dad anotor i fish shrillegy e.g. welling of casining process e.g. change of order of processes e.g. change of order of processes e.g. change from 100% to sample hapection e.g. change from 100% to sample hapection e.g. plast films block, reduction from three to teo temporature measurements e.g. change in basin hinks in process.	С	• • · · · · · · · · · · · · · · · · · ·							B -	· ·	c .		-	-   -		:			Characterisation depends on impact of production flow.
CERANIC / TANEALIM  CERANIC / TANEALIM	PAS-CER-PF-02  PAS-CER-QG-01  PAS-FLM-AN-01	Manufacting this broader or received of a part of production process is a different business.  Discounting or distinct of a resolutioning process resp.  Discounting or distinct of a resolutioning process resp.  Discounting or distinct	Change of transfacturing process sequence.  Change of test coverage.  It is coverage.  It is a coverage.  It is a coverage of the coverage and change of change and change affects agreed to the change affects agreed.	e.g. data source i file shallegy a.g. seaf-ling / deening process a.g. seaf-ling / deening process a.g. change from 100% is sample respection a.g. change in their links in process.  Not relevant for technical evaluation.	c c	• • • • • • • • • • • • • • • • • • •						· · · ·	B .		c .		-					- «	Characterisation depends on impact of production flow.
CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  Film capicities  Film capicities	PAS-CER-PF-02 PAS-CER-QG-01	Bookeancy in booker or received if a peril of principle process is a fifther tous don'te.      Bookeancy and the season of	Change of transfacturing process sequence.  Change of test coverage.  It is coverage.  It is a coverage.  It is a coverage of the coverage and change of change and change affects agreed to the change affects agreed.	e.g. dad anotor i fish shrillegy e.g. welling of cashing process e.g. change of order of processes e.g. change of order of processes e.g. change from 100% to sample hapection e.g. change from 100% to sample hapection e.g. plast film block, reduction from three to teo temporature measurements e.g. change in basin hinkel in process.	С	• • • • • • • • • • • • • • • • • • •		· · · ·		• • • • • • • • • • • • • • • • • • •			B .		c	· ·							Characterisation depends on impact of production flow.
CERAMIC / TANEALLM  CERAMIC / TANEALLM	PAS-CER-PF-02  PAS-CER-QG-01  PAS-FLM-AN-01  PAS-FLM-AN-02	Nanolectricy dis broader or receiver of a part of production process in a different boundaries.  P P P P P P P P P P P P P P P P P P P	Change of manufacturing process sequence.  Change of lest coverage.  Change of lest coverage.  Intended to be used if no other type of change is applicable but the change affects agreed selected coverage affects agreed selected coverage affects agreed.	e, did not con l'Abbridge  e, o maling l'abbridge grosses  e, o maling l'abbridge grosses  e, o maling l'abbridge grosses  e, o maling l'abbridge  e, o maling laboration provinces  e, o maling laboration front les les  encopraises de l'abbridge l'abbridge  durant laboration l'abbridge  Mat rédect for schröd evaluation.  Tuchical l'abbridge malind.	c c	• • • • • • • • • • • • • • • • • • •							8 .		c	· ·						- «	Characterisation depends on impact of production flow.
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER-PF-02  PAS-CER-QG-01  PAS-FLM-AN-01	Bookeancy in booker or received if a peril of principle process is a fifther tous don'te.      Bookeancy and the season of	Diangs of mendaduring process sequence.  Changs of lest coverage.  Intended to list used if no other type of changes and the coverage and the	es, de de router (1 feb atteige es, de des router (1 feb atteige es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order de processe es, d'ampe of tende order de processe es, de processe d'ampe of tende order de processe es, de place of de dicciois parameter d'adit fudire es, de place of deliciois parameter d'adit fudire	c c	• • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·			• • • • • • • • • • • • • • • • • • •			8 .	· · ·	c	· · ·					·	- «	Characterisation depends on impact of production flow.
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER-PF-02  PAS-CER-QG-01  PAS-FLM-AN-01  PAS-FLM-AN-02	Nanolectricy dis broader or receiver of a part of production process in a different boundaries.  P P P P P P P P P P P P P P P P P P P	Diangs of mendaduring process sequence.  Changs of lest coverage.  Intended to list used if no other type of changes and the coverage and the	es, de de router (1 feb atteige es, de des router (1 feb atteige es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order de processe es, d'ampe of tende order de processe es, de processe d'ampe of tende order de processe es, de place of delicité of permitter d'altréduére	c c	• • • • • • • • • • • • • • • • • • •	·	• • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • •			B .	· · · · · · · · · · · · · · · · · · ·	· ·							- «	Characterisation depends on impact of production flow.
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER-OF-02  PAS-CER-OF-01  PAS-PLM-ANN-01  PAS-PLM-DS-01	The control of the control of the control of a part of production process in a different fundamental form of the control	Diangs of mendaduring process sequence.  Changs of lest coverage.  Intended to list used if no other type of changes and the coverage and the	es, de de router (1 feb atteige es, de des router (1 feb atteige es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order de processe es, d'ampe of tende order de processe es, de processe d'ampe of tende order de processe es, de place of delicité of permitter d'altréduére	C  B  Mail Insummer dispending or charge  A lead regulation.	• • • • • • • • • • • • • • • • • • •				· · · · · · · · · · · · · · · · · · ·			B .	· · · · · · · · · · · · · · · · · · ·	c						·	- «	Characterisation depends on impact of production flow.
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER-PF-02  PAS-CER-QG-01  PAS-FLM-AN-01  PAS-FLM-AN-02	Nanolectricy dis broader or receiver of a part of production process in a different boundaries.  P P P P P P P P P P P P P P P P P P P	Diangs of mendaduring process sequence.  Changs of lest coverage.  Intended to list used if no other type of changes and the coverage and the	es, de de router (1 feb atteige es, de des router (1 feb atteige es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order de processe es, d'ampe of tende order de processe es, de processe d'ampe of tende order de processe es, de place of delicité of permitter d'altréduére	c c	• • • • • • • • • • • • • • • • • • •		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·		• • • • • • • • • • • • • • • • • • •	B .		c						·	- «	Characterisation depends on impact of production flow.
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER-OF-02  PAS-CER-OF-01  PAS-PLM-ANN-01  PAS-PLM-DS-01	The control of the control of the control of a part of production process in a different fundamental form of the control	Dange of mendaduring process sequence.  Change of less coverage.  Intended to be used if no other type of change and the coverage and the cove	es, de de router (1 feb atteige es, de des router (1 feb atteige es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order di processe es, d'ampe of order de processe es, d'ampe of tende order de processe es, de processe d'ampe of tende order de processe es, de place of delicité of permitter d'altréduére	C  B  Mail Insummer dispending or charge  A lead regulation.			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	B .		c							- «	Characterisation depends on impact of production flow.
CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  Fin century  Fin century  Fin century	PAS-CER-OF-02  PAS-CER-OF-01  PAS-PLM-ANN-01  PAS-PLM-DS-01	The control of the control of the control of a part of production process in a different fundamental form of the control	Cargo of mandestring prisons required.  Cargo of and courage,  Instead of the State of the State of Cargo  Instead of the State of Cargo  Inste	An defended in the steeps  we willing it compares  a disease of our diseases  a disease of our diseases  a disease of our diseases  a disease our diseases  a dise	C  B  Mail Insummer dispending or charge  A lead regulation.	• • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			B	· · · · · · · · · · · · · · · · · · ·	c .						·	- «	Characterisation depends on impact of production flow.
CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  Fin century  Fin century  Fin century	PAS-CER-OF-02  PAS-CER-OF-01  PAS-PLM-ANN-01  PAS-PLM-DS-01	The control of the control of the control of a part of production process in a different fundamental form of the control	Cargo of mandestring prisons required.  Cargo of and courage,  Instead of the State of the State of Cargo  Instead of the State of Cargo  Inste	An defended in the steeps  we willing it compares  a disease of our diseases  a disease of our diseases  a disease of our diseases  a disease our diseases  a dise	C  C  B  Management depending on therep  or an in equipment.		· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • •						· · · · · · · · · · · · · · · · · · ·	c							- «	Characterisation depends on impact of production flow.
CERVANIC / TAVEALIM  CERVANIC / TAVEALIM  CERVANIC / TAVEALIM  CERVANIC / TAVEALIM  Film cepticism  Film cepticism  Film cepticism	PAS-CER-PF-02  PAS-CER-OG-01  PAS-FLM-AN-01  PAS-FLM-AN-02  PAS-FLM-OS-01  PAS-FLM-OS-02	Nanolectoring this broader or recement of a gard of principles to a different localisation.  P P P P P P P P P P P P P P P P P P P	Cargo of mandestring prisons required.  Cargo of and courage,  Instead of the State of the State of Cargo  Instead of the State of Cargo  Inste	An defended in the steeps  we willing it compares  a disease of our diseases  a disease of our diseases  a disease of our diseases  a disease our diseases  a dise	C  B  Mail Insummer dispending or charge  A lead regulation.	• • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				B	· · · · · · · · · · · · · · · · · · ·	c							- «	Characterisation depends on impact of production flow.
CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  Fin cenciars  Fin cenciars	PAS-CER-PF-02  PAS-CER-OG-01  PAS-FLM-AN-01  PAS-FLM-AN-02  PAS-FLM-OS-01  PAS-FLM-OS-02	Name (Annual Content of the State of the Sta	Change of metabolishing process empetion.  Change of lead coverage.  Transchild to be used if no other type of changes are seen to the type of changes are seen to the type of changes are seen to the type of the change of any particular industrial and admiration.  Change of application industrial and changes are seen to the seed of changes of any particular industrial and any and any	An defended in the steeps  we willing it compares  a disease of our diseases  a disease of our diseases  a disease of our diseases  a disease our diseases  a dise	C  C  B  Management depending on therep  or an in equipment.							· · · · · · · · · · · · · · · · · · ·	B	· · · · · · · · · · · · · · · · · · ·	c							- «	Characterisation depends on impact of production flow.
CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  Fin cenciars  Fin cenciars	PAS-CER-PF-02  PAS-CER-OG-01  PAS-FLM-AN-01  PAS-FLM-AN-02  PAS-FLM-OS-01  PAS-FLM-OS-02	Nanolectoring this broader or recement of a gard of principles to a different localisation.  P P P P P P P P P P P P P P P P P P P	Change of mendeshiring pursues requests.  Change of the country.  Change of the country.  Change of the country or country or country.  Change of the country or country or country.  Change of agelication values of thirty or country.  Change of agelication values or formation power  and country or country.  The behavior of formation promote or country.  The country of the country	An defended in the steeps  we willing it compares  a disease of our diseases  a disease of our diseases  a disease of our diseases  a disease our diseases  a dise	C  B  Six assessed days dig or charge  A but made epicholox.										c							- «	Characterisation depends on impact of production flow.
CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  CERNAIC / TARFALIM  Fin cenciars  Fin cenciars	PAGCERPF-02  PAGCEROGOI  PAGCERAGOI  PAGCE	Name of the state of a resolution of a part of production process to a different business.  P P P P P P P P P P P P P P P P P P P	Change of mendeshiring pursues requests.  Change of the country.  Change of the country.  Change of the country or country or country.  Change of the country or country or country.  Change of agelication values of thirty or country.  Change of agelication values or formation power  and country or country.  The behavior of formation promote or country.  The country of the country	An all and an all an all and an all and an all an all and an all an all and an all and an all an all and an all an all and an all an all an all an all an all an all and an all and an all and an all	G  B  Risk assessment depending on change A state Assessment and Mark Assessment A  A someometic with MARK ASSES A someometic with M	• • 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			· · · · · · · · · · · · · · · · · · ·					· · · · · · · · · · · · · · · · · · ·	c						· · · · · · · · · · · · · · · · · · ·	- «	Distribution depend on impact of property of the property of t
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER-PF-02  PAS-CER-OG-01  PAS-FLM-AN-01  PAS-FLM-AN-02  PAS-FLM-OS-01  PAS-FLM-OS-02	Name (Annual Content of the State of the Sta	Change of mendeshiring pursues requests.  Change of the country.  Change of the country.  Change of the country or country or country.  Change of the country or country or country.  Change of agent country or country.  Change of agent country or country.  She before our country or country.  She before our country or country.  She before our country or country.  She country of country or country.  She country of country or country.  She country or country or	An defended in the steeps  we willing it compares  a disease of our diseases  a disease of our diseases  a disease of our diseases  a disease our diseases  a dise	C  B  Six assessed days dig or charge  A but made epicholox.										C							- «	Characterisation depends on impact of production flow.
CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  Film capicities  Film capicities	PAS-CER PF-GZ  PAS-CER GG 51  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE	Boulderskrig de broeder er rosewerd it a per di principio process is a different localisation.  De P  December of service of the control	Compy of mendestring present respective.  Compy of the country.  Compy of the country.  Compy of the country.  Compy of the country of the co	and determined in the straing of the	C B A summaried depending on the part of t										c							- «	Overschraden depend en Imperil en  production of the production of
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAGCERPF-02  PAGCEROGOI  PAGCERAGOI  PAGCE	Boulderskrig de broeder er rosewerd it a per di principio process is a different localisation.  De P  December of service of the control	Compy of mendestring present respective.  Compy of the country.  Compy of the country.  Compy of the country.  Compy of the country of the co	and determined in the straing of the	C  A Management depending on change A management depending on the depending o										C							- «	Distribution depend on impact of property of the property of t
CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  Film capicities  Film capicities	PAGERNER OF PAGERNANDS	Boulderskrig de broeder er rosewerd it a per di principio process is a different localisation.  De P  December of service of the control	Change of mendendring present respective.  Change of the second resident specific company.  Chanded his to second resident specific company.  Chanded his to second resident specific company.  Change of respective contents of the second resident second re	as defined in the steeps of a winding of the steeps of a steep of the	C C  B D D D D D D D D D D D D D D D D D D	• • 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							- @•		c								Oversider All per proceeding.  Consider All proceedings.
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER PF-GZ  PAS-CER GG 51  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE  PAS-FEANANCE	Boulderskrig de broeder er rosewerd it a per di principio process is a different localisation.  De P  December of service of the control	Change of mendendring present respective.  Change of the second resident specific company.  Chanded his to second resident specific company.  Chanded his to second resident specific company.  Change of respective contents of the second resident second re	and determined in the straing of the	C  A Management depending on change A management depending on the depending o								- @•		C							- «	Overschraden depend en Imperil en  production of the production of
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAGERNER OF PAGERNANDS	Name (Account of the Section of Account of Agent of prefection process in a different foundation of Account of Agent of prefection of Account of Agent of Account of Agent of Account of Agent of Account of Account of Agent of Account of Ac	Change of mendeshing pursues requested  Change of the county on other purposes of the county of the	and determined in the strange of the	C C  B D D D D D D D D D D D D D D D D D D	1						•	- @•		C								Ownerwaters depend on Imperior of Contract Act on Imperior
CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  Film capicities  Film capicities	PAGERNER OF PAGERNANDS	Name (Account of the Section of Account of Agent of prefection process in a different foundation of Account of Agent of prefection of Account of Agent of Account of Agent of Account of Agent of Account of Account of Agent of Account of Ac	Change of mendeshing pursues requested  Change of the county on other purposes of the county of the	and determined in the strange of the	C C  B D D D D D D D D D D D D D D D D D D								- @•										Ownerwaters depend on Imperior of Contract Act on Imperior
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAGERANDE	Name of the state of a manufacturing pressure reg.  Discontinue and state of a manufacturing pressure reg.  P P P P P P P P P P P P P P P P P P P	County of sendenduring pursues requests  County of their county.  County of their county.  Instituted to be used for other type of chapped as a periodic to be a send of the other purposes.  Instituted to be used for other type of chapped as a periodic to be a send of the other purposes.  County of application release of characteristics and the county of characteristics and the county of characteristics.  The benchmark of the county of characteristics and the county of characteristics and the county of characteristics.  The county of characteristics are considered to the county of the	as determined in the straing of a winding of control of the straing of the strain	C C  B Total Section of State Configuration of the State Configuration of t		· •	• · · · · · · · · · · · · · · · · ·	· · ·	• @• • • · · •	• @•	•	B -		C								Overschraden depend in Imperial of  Descharation depend in Imperial of  Bellens Association of  Bellen
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER PE OF PAS-CER PE	Name of the Control o	Change of mendendering present respective.  Change of the second control of the second c	as determined in the steeps we willing it compares has diseased and determined has dis	C C  A Instrument Agending or Charge B Instrument Agending or		· •	· · · · · · · · · · · · · · · · · · ·	@• @• @•	• @• • • · · •		•	B		C							· • • • • • • • • • • • • • • • • • • •	Demokration fequent on impact of some property of the control of t
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAGERANDE	Name of the Control o	Change of mendenduring pursues respective.  Change of the coverage.  Change of the coverage.  Change of the coverage of the co	As a district for the store of	C C  B Total Section of State Configuration of the State Configuration of t		· •	· · · · · · · · · · · · · · · · · · ·	· · ·	• @• • • · · •	• @•	•	B -		C							· • • • • • • • • • • • • • • • • • • •	Consider distallar in application in preparation of the consideration of
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAS-CER PE OF PAS-CER PE	Name of the Control o	Change of mendenduring pursues respective.  Change of the coverage.  Change of the coverage.  Change of the coverage of the co	As a district for the store of	C C  A Instrument Agending or Charge B Instrument Agending or		· •	· · · · · · · · · · · · · · · · · · ·	@• @• @•	• @• • • · · •	• @•	•	B		C								Consider distallar in application in preparation of the consideration of
CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  Film capicities  Film capicities	PAS-CER PE SE PAS-CER PE SE PAS-FLAM PE SE PAS-FLAM SE SE PAS-FLAM SE SE PAS-FLAM SE SE PAS-FLAM PE SE	Name of the Control o	Change of mendanting process respective.  Change of the second on other type of change of the county.  Change of the second on other type of change of the c	as determined in the steeps  we willing it compares  as disregard order of processes  as disregard order order order order or  as disregard order o	C C B A surround deposit gar charge for an experience of property gar charge.  A Not surround deposit gar charge for an experience of property gar charge for an experience of property garden and		@• @•	- @• - @• - @• - @•	@• @• @• @•	• @• • • • • • • • • • • • • • • • • •	• @•	· · · · ·	B	· · · · · · · · · · · · · · · · · · ·	C								Consider shratton in upper to the control of the co
CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  Film capicities  Film capicities	PAS-CER PE SE PAS-CER CE SE PAS-CER CER CER CER CER CER CER CER CER CER	Name of the Control o	Change of mendanting process respective.  Change of the coverage.  Change of the coverage.  Change of the coverage of the cove	and determined for the steeps of the steep of the steeps of the steep of the ste	C C B A surround deposit gar charge for an experience of property gar charge.  A Not surround deposit gar charge for an experience of property gar charge for an experience of property garden and		· @•	- @• - @• - @• - @•	@• @• @• @•	@• - @·	• @•	· · · · ·	B	• • • • • • • • • • • • • • • • • • •	C								Consider distallar in application in preparation of the consideration of
CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  CERNARC / TARRALIM  Film cepicidas  Film cepicidas	PAG-CER PF-00  PAG-CER PF-00  PAG-CER AND	Name of the state of a reconstruct of a part of production process to a different tradestorm. P  Discount or water of a reconstruction and tradestorm of the state of the stat	Change of mendanting process respective.  Change of the coverage.  Change of the coverage.  Change of the coverage of the cove	and determined for the steeps of the steep of the steeps of the steep of the ste	C  B  A Interest depending on charge that assessment depending on charge that and registration  A Interest depending on charge that any registration  A Interest depending on the part of			- @• - @• - @• - @•	@• @• @• @•	• @• • • • • • • • • • • • • • • • • •	• @•	@ @ 	B	· · · · · · · · · · · · · · · · · · ·	C								Consider distallar in application in preparation of the consideration of
CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  CERANIC / TANSALIM  Film capicities  Film capicities	PAG-CER PF-GD  PAG-CER PF-GD  PAG-FILMANGE	Name   Part	Change of mendanting process respective.  Change of the coverage.  Change of the coverage.  Change of the coverage of the cove	and determined for the straing of th	C C C C C C C C C C C C C C C C C C C		@• @• @•	- @• - @• - @• - @•	@• @• @• @• @• @• @• @• @• @• @• @•	• @• • • • • • • • • • • • • • • • • •	• @•	· · · · ·	B	@• @•	C								Consider distallar in application in preparation of the consideration of
CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  Film capacitas  Film capacitas	PAG-CER PF-00  PAG-CER PF-00  PAG-CER AND	Name   Part	Change of mendenshing present respective.  Change of the second resident page of of the second	as de descripción final designe  de mitroj Compressor  de diregal de consecución de consecución  de descripción de de descripción  de descripción de de descripción  de descripción de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecuc	C C  B Mail assessment shaped up on through the state of the special day.  A To committee of the special day of through the special day of the spe			- @• - @• - @• - @•	@• @• @• @• @• @• @• @• @• @• @• @•	• @• • • • • • • • • • • • • • • • • •	• @•	@ @ 	B	· · · · · · · · · · · · · · · · · · ·	C								Consider distallar in application in preparation of the consideration of
CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  Film capacitas  Film capacitas	PAG-CER PF-GD  PAG-CER PF-GD  PAG-FILMANGE	Name of the Control o	Change of mendenshing present respective.  Change of the second resident page of of the second	as de descripción final designe  de mitroj Compressor  de diregal de consecución de consecución  de descripción de de descripción  de descripción de de descripción  de descripción de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecuc	C C C C C C C C C C C C C C C C C C C		@• @• @•	- @• - @• - @• - @•	@• @• @• @• @• @• @• @• @• @• @• @•	• @• • • • • • • • • • • • • • • • • •	• @•	@ @ 	B	@• @•	C								Consider distallar in application in preparation of the consideration of
CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  Film capacitas  Film capacitas	PAG-CER PF-GD  PAG-CER PF-GD  PAG-FILMANGE	Name   Part	Change of mendenshing present respective.  Change of the second resident page of of the second	as de descripción final designe  de mitroj Compressor  de diregal de consecución de consecución  de descripción de de descripción  de descripción de de descripción  de descripción de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecuc	C C  B Mail assessment shaped up on through the state of the special day.  A To committee of the special day of through the special day of the spe		@• @• @•	- @• - @• - @• - @•	@• @• @• @• @• @• @• @• @• @• @• @•	• @• • • • • • • • • • • • • • • • • •	• @•	@ @ 	B	@• @•	C								Consider distallar in application in preparation of the consideration of
CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  Film capacitas  Film capacitas	PAG-CER PF-G2  PAG-CER AND G1  PAG-FLAM G1  PAG-	Name of the Control o	Change of mendenshing present respective.  Change of the second resident page of of the second	as de descripción final designe  de mitroj Compressor  de diregal de consecución de consecución  de descripción de de descripción  de descripción de de descripción  de descripción de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecución  de consecuc	C C B MINISTRA La Ministra C C C C C C C C C C C C C C C C C C C		@• @• @•	- @• - @• - @• - @•	@• @• @• @• @• @• @• @• @• @• @• @•	• @• • • • • • • • • • • • • • • • • •	• @•	@ @ 	B	@• @•	C								Consider distallar in application in preparation of the consideration of
CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  CERNANC / TANEALIM  Film capacitas  Film capacitas	PAS-CER PE-20  PAS-CER PS-20  PAS-FILMAN-20  PAS-FI	Note that the second of the results of a grant of a gra	Change of mendendering process respective.  Change of the coverage.  Change of the coverage.  Change of the coverage of the co	as de descripción final designe  de mitroj Compressor  de diregal de consecución de de descripción  de de descripción de de descripción  de descripción de de descripción  de descripción de de descripción  de descripción de descripción de descripción de  descripción de descripción de descripción  de descripción de descripción de  descripción de descripción de  descripción de descripción de  descripción de descripción de  descripción de descripción de  descripción de descripción de  descripción de descripción de  descripción de	C C B MINISTRA La Ministra C C C C C C C C C C C C C C C C C C C		@• @• @•	- @• - @• - @• - @•	@ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @	• @• • • • • • • • • • • • • • • • • •	• @•	@ @ 	B	@• @•	C								Consider distallar in application in preparation of the consideration of

		1		1																						 	
Ein caracters	PAS-FLM-DE-06	Changes of inner construction - Insulation System	- P	Change of inner insulation to protect winding element against housing.	e.g. change of potting material e.g. change of number of inner insulation byers (depending of insulation material thickness)	С			•	-		•		-		-		•	В -		-				-	 	@•
Film capacitors	PAS-FLM-DE-07	Changes of termination, surface finish, shape, color, appearance or dimension structure - Package		Change of packaging	e.g. change of dimension or shape e.g. change of surface	В			@•	- 6		-	@• @	• -	@• @•	@•			- @•		-				-	 	
Film capacitors		PROCESS			e.g. change in resin filling process (mising.																						
Film capacitors	PAS-FLM-PR-01	Changes in process technology or manufacturing methods - Package	- P	Change of resin filling or hardening process (relevant for boxed types only)	e.g. change in reain filling process (mixing, sequences, polling,) e.g. change in hardening process (temperature, time.)	С	•				•	•	•	-	•						-		- 1			 1 1 1	
	PAS-FLM-PR-02	Changes in process technology or manufacturing methods - Terminal Attach	. р	Change Terminal Attach Process to winding element for boxed and nacked types	e.g. spraying and / or galvanic process, e.g. welding / soldering	c	B: for naked SMD												в .							 	Consider ESR. Solderability Test for naked SMD components.
Film capacitors	PAS-FLM-PR-03	Changes in process technology or manufacturing methods - Winding		Change of winding, flattening or tempering process	e.g. change of tempering temperature	С				H . H	. @.								В .						-	 -	components.
Film capacitors	PAS-FLM-PR-04	Process integrity tuning within specification	. р	Variation within process specification.	e.g. process control	c															-					 	
Film capacitors	PASE MENO	PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS		Change of packing specification.	T				_	T T		_															
Film capacitors	PAS-FLM-PN-02	Packing / shipping specification change (lossening of tolerances)  Dry pack requirements change		Change of drypack requirements.	e.g. number of pieces on reel.	В			÷			+ -						-				-			-		
Film capacitors					e.g. change of MSL e.g. change in dry pack assurance (HIC, MSS)		•		÷	-		+		-		+					-				-		
Film capacitors	PAS-FLM-PN-03	Change of carrier (tray, ree)  PACKING / SHIPPING - VISUAL INSPECTION	P P	Change of carrier	e.g. change by material e.g. change by geometry.	В	•							-							-				•	 	•
Film capacitors		PACKING / SHIPPING - VISUAL INSPECTION								Т																	
	PAS-FLM-PV-01	Change of labeling	I P	Change of labelling, also on reel.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В	•							-							-		-   -			 	
Film capacitors	PAS-FLM-PV-02	Change of product marking		Marking on device.	e.g. change of content of marking	В			+			+													-		
Film capacitors	PAS-FLMPV-GZ	Change of product marking			e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking		•		-																-	 	
	PAS-FLM-PV-03	Change of packing/shipping specification	P P	Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of documentation in packing specification									-							-					 	
Film capacitors		LOGISTICS / CAPACITY / TESTING - EQUIPEMENT																									
	PAS-FLM-EQ-01	Production from a new equipment/tool which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product	P P	Change in process technique which is not already covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e.g. implementation of new machines	С				-	. @•		@• @			-			в -		-				-	 	Test effort depends on final risk assessment. Performance test according to affected
Film capacitors				covered by the table require also a PCN					4			-															process change.  Test effort depends on final risk
	PAS-FLM-EQ-02	Production from a new equipmentition which uses the same basic technology (replacement equipment or extension of esisting equipment pool)	. Р	PCN required for dedicated equipment for sensitive component production.	e.g. extension of existing machine capacity	С				-	. @•		@• @			-		•	В -		-				-	 	east error opprice on treat risk assessment. Performance test according to affected process change.
Film capacitors			H	Change of final test equipment which use																							
	PAS-FLM-EQ-03	Change in final test equipment type that uses a different technology	P P	Change of final test equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. change of tester platform	С	•		-	-		-				-			@B -		-		-		-	 	②◆ Gage R&R / delta correlation
Film capacitors		LOGISTICS / CAPACITY / TESTING - PROCESS FLOW	_		an measured or hander of manufacturing and a																				_		
Din caracitys	PAS-FLM-PF-01	Manufacturing site transfer or movement of a part of production process to a different location/site	P P	Change of manufacturing site. Includes transfer as well as additional site. Note: Reorganization inside one plantisite is not efforted!	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.	В	•		•	-	•   •	•	•   •	•		•	.   .		в •							 . @•	@•
ram especiari	PAS-FLM-PF-02	Elimination or addition of a manufacturing process step	. Р		e.g. visel source / fait strategy e.g. vashing / cleaning process e.g. change of order of processes	с																				 	Characterisation depends on impact of production flow.
Film capacitors Film capacitors		LOGISTICS / CAPACITY / TESTING - Q-GATE				_				$\perp$	_					$\perp$										 	production flow.
	PAS-FLM-QG-01	Change of text coverage used by the supplier to ensure data sheet compliance (e.g., elimination/addition of electrical measurement/lest flow block, relaxation/enhancement of monitoring procedure or sampling)	. Р	Change of test coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature measurements. e.g. change in burn in true in process.	С																				 	R (electr. funct.): test coverage. R (reliability) only for change in burn in process.
Film capacitors					temperature measurements e.g. change in burn in/run in process.	·											$\perp$										process.
QUARTZ CRYSTAL / SAW		QUARTZ CRYSTAL / SAW ANY																									
QUARTZ CRYSTAL / SAW	PAS-QUA-AN-01	Any change with impact on agreed upon technical contractual agreements	P P	Intended to be used if no other type of chang is applicable but the change affects agreed technical control to account to	Not relevant for technical evaluation.		-							-							-					 	-
QUARTZ CRYSTAL / SAW			P P		Technical interface means component terminals.	В	-							-							-					 . @•	-
QUARTZ CRYSTAL / SAW		DATASHEET		1	I				_			_														 	
QUARTZ CRYSTAL / SAW	PAS-QUA-DS-01	Change of datasheet parameters/electrical specification (min/max/lyp. values) and / or ACIDC specification	P P	Change of application relevant information Not included: Editorial changes.	e.g. Sighten of electrical parameter distribution	A	Risk assessment depending on change for each application.					-											-   -		-	 	
				No technical change of product, process or test.																							
	PAS-QUA-OS-02	Correction of data sheet or issue of errats	1 1	New description of behavior which was not specified before or which is different from initial specification.	e.g. data sheet correction because of new information about component behavior	A								-							-					 	-
QUARTZ CRYSTAL / SAW				No technical change of product, process or solve description of ballward which was not specified before or which is different from initial specification. Please indicate chearly, that infoncis combine this tips of charge.																							
				Description of a new not previously covered																							
	PAS-QUA-OS-03	Specification of additional parameters	ı P	Description of a new not previously covered parameter. No sechnical change of the product. (Er: no influence (Ep: Platk assessment depending on change I each application to provide evidence of additional parameters (stat. evaluation)	e.g. adding new (tested) parameter.	A																				 	
				(P): Plak assessment depending on change f each application to provide evidence of	or .																						
QUARTZ CRYSTAL / SAW QUARTZ CRYSTAL / SAW		MATERIAL		*						$\perp$	_					$\perp$										 	
QUARTZ CRYSTAL / SAW		Change of material composition - Quartz Blank	Р Р	A change of Quartz Blank is a sery rane case. Mainly for SAW-Filter		A			•	-		•		-		•			В -	• -	-			-	-	 	-
QUARTZ CRYSTAL / SAW	PAS-QUA-MA-02	Change of material composition - Base	РР	Changing of the material of the base.	e.g. change from ceramic to epoxy	A			•	- 6	•	-				• @	@•		- @•		-				@•	 	C0 may be influenced Temperature expansion coefficient
QUARTZ CRYSTAL / SAW	PAS-QUA-MA-03	Change of material composition - Lead / Termination	РР	Change of Lead/Termination	e.g. change of plating finish. (eg Au, AgPd,Sn)	В			•	-		-				•			В -		-		- @		-	 	-
QUARTZ CRYSTAL / SAW				Change of Glass Seal	e.g. change to lead free glass	В	-												В -		-		- @		-	 	X-Ray inspection may be influenced when sealing is containing Pb
QUARTZ CRYSTAL / SAW			P P	Changing of the material of the carr/cap	e.g. change from metal to ceramic material e.g. change of olse (Silicron in Financi	A		@	•	- 6	• •	@•		-		• @	@•		@B -		-		- @		-	 	
QUARTZ CRYSTAL / SAW	PAS-QUA-MA-06	Change of material composition - Blank Support		Change of Blank Support	e.g. change of glue (Silicone to Eposy) e.g. change metal holders (old types)	С	-			- 6					•	• @				•			- 6		-	 	Dectrical function affected in case of
	PAS-QUA-MA-07	Change of material composition - Overmold	РР	Change of Overmoid	e.g. change to green mold compound e.g. change of filler particles	В			•	@•	. @•	@•							@B •		-		- @		-	 	Electrical function affected in case of mechanical sheas distribution change. ACI, www soldering and board costing has to be assessed. MCI, might be
QUARTZ CRYSTAL / SAW			$\vdash$						+-																		changed.
	PAS-QUA-MA-08	Change of material composition - Case Sealing	P P	Change of Case Sealing, Change of material for seam welding Relevant for components with ceramic base and metal cap.	e.g. change from solder pasts to adhesive glue	c ·			•	- 6	• Y	-	• .	-					в •	• -	-			-	-	 	- Impedance my be influenced.
QUARTZ CRYSTAL / SAW	PAS-QUA-MA-09	Change of material composition - Electrode	р о	and metal cap.  Change of Electrode material on crystal blank		с			+-	- 6	Y ev				@Y -				@B -								
QUARTZ CRYSTAL / SAW																		_									
QUARTZ CRYSTAL / SAW	PAS-QUA-MA-10	Change of material composition - Insulator		Change of Insulator. Only for leaded types. Not relevant for typical SMD.	e.g. Insulating plate under crystal e.g. Glass sealing for leads	В				@•		@•			• •		•	-	В •	•	-				-	 	
QUARTZ CRYSTAL / SAW	PAS-QUA-MA-11	Change of material composition - Marking		Change of marking material	e.g. change of ink e.g. chemical to environmental friendly	В	-					-			@• -	- @					-				- [	 	- ACII check necessary!
QUARTZ CRYSTAL / SAW	PAS-QUA-MA-12	Change of supplier of material	. Р	Change to a new or additional material supplies at component manufacturer.	er e.g. for 2nd source purpose	С			•	-	• -	•		•   •		•		-	в •		-				-	 	Assumption material specification remains unchanged. Otherwise see change of material.
QUARTZ CRYSTAL / SAW		DESIGN	1.1												0.										0.		
QUARTZ CRYSTAL / SAW	PAS-QUA-DE-01	Changes of termination, surface finish, shape, color, appearance or dimension structure - Base	I P	Change of Base design	e.g. due to ministurization purpose.	В					ş• •	_		_	@• •				- @•						@•	 	CO may be influenced
QUARTZ CRYSTAL / SAW		Changes of termination, surface finish, shape, color, appearance or dimension shucture - Lead / Termination		Change of Lead/Termination design. Change geometry or terminal pad or lead form		В	•								- •				В -	• •	-		- @		-	 	C0 may be influenced - Relability of solder joints may be affected
QUARTZ CRYSTAL / SAW	PAS-QUA-06-03	Changes of termination, surface finish, shape, color, appearance or dimension structure - Can / Cap		Change of Can/Cap design	e.g. due to ministurization purpose.	A	-	@	• •	@•	•	-		-	@• •	• @	• •		В -	• -	-		- @	• -	-	 	- Dectrical function affected in case of
	PAS-QUA-DE-04	Changes of termination, surface finish, shape, color, appearance or dimension structure - Package	I P	Change of Package (Molded). Change the design of the package. Not relevant for typical SMD.	e.g. change from welded device to glued device (case sealing)	В		• - @	٠.	@•	. @•	@•							в •		-		- @		-	 	Electrical function affected in case of mechanical stress distribution change. ACI, wave soldering and board coating has to be assessed. MSL might be
QUARTZ CRYSTAL / SAW		1			(case seedig)																		_				has to be assessed. MSL might be changed.
QUARTZ CRYSTAL / SAW	PAS-QUA-DE-OS	Changes of termination, surface finish, shape, color, appearance or dimension structure - Insulator	I P	Change of Insulator design. Only for leaded types (old technology) Not relevant for typical SMD.		В	-	• • @	@•	@• (		@•		-	• -	@• @	@•		@B -	@• -	-			-	-	 	-
	PAS-QUA-DE-06	Changes of inner construction - Quartz Blank	. Р	Change of Quartz Blank design	e.g. change dimension of blank, add phase, electrode design,	С				-					- •					• -	-				-	 	
		Changes of inner construction - Blank Support	. Р	Change of Blank Support design	e.g. change design of glue shape e.g. change design of metal supporter	С				- 6									В -	•	-		- 6	Υ -	-	 	
CUMPTZ CRYSTAL / SAW		PROCESS  Changes in process technology or manufacturing methods - Quartz Stank		Change of Quartz Blank process	e.g. change of cutting or tapping technology	С				1 - 1		-					1.1		В -								
		Changes in process technology or manufacturing methods - Quartz seans.  Changes in process technology or manufacturing methods - Blank Diching / Geaning	. Р	Change of Blank Bith/Clean process Using different / new technology	e.g. change or cutting or appeng sectrology e.g. change from liquid etching to plasma etching	c			-							@•	@•		В -		- 1		- 1				
QUARTZ CRYSTAL / SAW		Changes in process technology or manufacturing methods - Electrode Formation		Using different / new technology  Change of Electrode Formation process	e.g. change from evaporation to sputtering	С										•	- @•	_	В -		-					 	
QUARTZ CRYSTAL / SAW		Changes in process schoology or manufacturing restods - Schoolog - Changes in process schoology or manufacturing methods - Trimming		Change of Auto Trim process (Method of final frequency tuning)		c											. @•		В -	•							
QUARTZ CRYSTAL / SAW			H	frequency tuning)  Change of Blank bonding / annealing ************************************	L					+-+	_																
QUARTZ CRYSTAL / SAW	PAS-QUA-PRIOS	Changes in process technology or manufacturing methods - Bonding / Annealing	- P	Change of Blank bonding / annealing process Change of method how apply conductive material to base or blank		С	•		•	@• 6	Y @Y	•		-	•	•	•		В -	•	-		- 6	Υ .		 	

QUARTZ CRYSTAL / SAW	PAS-QUA-PR-06	Changes in process technology or manufacturing methods - Can / Cap Attaching	-	P Change of Cap/Can attaching process	e.g. change of the sealing method e.g. change from batch oven to reflow oven	С		• •								•		•		В			 -								
QUARTZ CRYSTAL / SAW	PAS-QUA-PR-07	Changes in process technology or manufacturing methods - Molding	-	P Change of Overmolding process. Not relevant for typical SMD.	e.g. change of overmold process parameter	С		• •	@•	•	@•	@	@•		@•	•	• -	•		В	•	•	 -	-							
	PAS-QUA-PR-08	Changes in process technology or manufacturing methods - Marking	- 1	P Change of Marking process	e.g. change from inked marking to baser marking e.g. marking of pin 1 e.g. change of appearance (additional marking)	В				-						-		-					 -	@• .						ACI check neo	acessary1
QUARTZ CRYSTAL / SAW	PAS-QUA-PR-09	Changes in process technology or manufacturing methods - Aging		P Change of Aging process. Typically no aging	E.g. change or appearance (additional marking) If aging is done: e.g. change of times or	С			@•	-								٠.		В			 -					-			
QUARTZ CRYSTAL / SAW QUARTZ CRYSTAL / SAW QUARTZ CRYSTAL / SAW	PAS-QUA-PR-10	Process integrity: tuning within specification		P Change of Aging process. Typically no aging done on quartr crystals. P Variation within process specification.	e.g. process control	c			-	-								-					 -					-			
QUARTZ CRYSTAL / SAW		PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS							_			_				т т							1 1		т т		_			_	
QUARTZ CRYSTAL / SAW	PAS-QUA-PNOI			P Change of packing specification.	e.g. number of pieces on reel.	В														-											
OLIARTZ CRYSTAL / SAW	PAS-QUA-PN-02	Dry pack requirements change	Р	P Change of drypack requirements.	e.g. change of MSL e.g. change in dry pack assurance (HIC, MSS)	В										-		-					 -								
QUARTZ CRYSTAL / SAW	PAS-QUA-PN-03	Change of carrier (tray, reel)	Р	P Change of carrier	e.g. change by material e.g. change by geometry.	В												-										-			
QUARTZ CRYSTAL / SAW		PACKING / SHIPPING - VISUAL INSPECTION										_																		_	
QUARTZ CRYSTAL / SAW	PAS-QUA-PV-01	Change of labeling	1	P Change of labelling, also on reel.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В				-						-		-													
	PAS-QUA-PV-02	Change of product marking		P Marking on device.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В																									
QUARTZ CRYSTAL / SAW												+						-			-	_				_	-			4	
QUARTZ CRYSTAL / SAW	PAS-QUA-PV-03	Change of packing/shipping specification	Р	Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of documentation in packing specification					-						-															
QUARTZ CRYSTAL / SAW		LOGISTICS / CAPACITY / TESTING - EQUIPMEMENT					ı					_											 				_			_	
	PAS-QUA-EQ-01	Production from a new equipment/loof which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product	Р	p  Change in process technique which is not alwayd, covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e. g. new equipment supplier with different process	с														@B			 -		-			-	- @•	Test effort depe assessment. Derformance is	pends on final risk test according to affected age.
QUARTZ CRYSTAL / SAW				covered by the table require also a PCN.																										process change	gs.
	PAS-QUA-EQ-02	Production from a new equipmentitod which uses the same basic technology (replacement equipment or extension of existing equipment pool)	- 1	PCN required for dedicated equipment for sensitive component production.	e.g. additional equipment to increase production capacity	С														@B			 -		-			-	- @•	Test effort depe assessment. Performance to	spends on final risk steet according to affected tigs.
QUARTZ CRYSTAL / SAW					e.g. replacement of same equipment						_	+						+			-						_			process change	Q4.
	PAS-QUA-EQ-03	Change in final test equipment type that uses a different technology	Р	Change of final test equipment which use different technology. PCN required for dedicated equipment for	e.g. change of tester platform	С														@B			 -		-			-	- @•	Gage R&R / de	delta correlation
QUARTZ CRYSTAL / SAW QUARTZ CRYSTAL / SAW		LOGISTICS / CAPACITY / TESTING - PROCESS FLOW		sensitive parameters.					_				$\bot$		_				_		$\bot$	_				_					
	PAS-QUA-PF-01		Р	P Change of manufacturing site. Includes transfer as well as additional site. Note: Recrosmission inside one plantitale is	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.	В														В									@• @•		
QUARTZ CRYSTAL / SAW				est affected	e.n. dual source / fab.strateou																+							+			fon denends on impact of
QUARTZ CRYSTAL / SAW		Elimination or addition of a manufacturing process step  LOGISTICS / CAPACITY / TESTING - Q-GATE		P Change of manufacturing process sequence.	e.g. change of order of processes	С											- 1 -	1							لنبا	- 1		1 .	- @•	production flow	tion depends on impact of the.
QUARTZ CRYSTAL / SAW					e.g. change from 100% to sample inspection																									R (electr. funct	ict.): test coverage. only for change in burn in
QUARTZ CRYSTAL / SAW		Change of test coverage used by the supplier to ensure data sheet compliance (e.g., elimination/addition of electrical measurement/lest flow block, relaxation/enhancement of monitoring procedure or sampling)	- 1	P Change of test coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature measurements e.g. change in burn in/run in process.	С				-						-		1												R (reliability) on process.	only for change in burn in
Al-Cap Al-Cap		ALUMIUM ELECTROLYTIC CAPACITORS ANY																													
A/Cap	PAS-ALU-ANOI	Any change with impact on agreed upon technical contractual agreements	Р	P Intended to be used if no other type of change is applicable but the change affects agreed technical contracts all assessments	Not relevant for technical evaluation.				-	-						-		-													
Al-Cap	PAS-ALU-AN-02	Any change with impact on ng two upon more must consume agreement as  Any change with impact on processability/manufacturability at customer, which is not covered in the matrix below.	Р	P	Technical interface means component terminals. See processability on board level.	В												-											@• -		
Al-Cap		the matrix balow.  DATAENEET	П									=				П			$\overline{}$	T T		$\overline{}$	1 1				_			_	
Al-Cap	PAS-ALU-DS-01	Change of datasheet parameters/electrical specification (min/max/typ. values) and / or AC/DC specification	Р	P Change of application relevant information Not included: Editorial changes.	e.g. Sighten of electrical parameter distribution	A	Risk assessment depending on change for each application.																 -								
				No technical change of product, process or test.  New description of behavior which was not specified before or which is different from initial appellication.  Please indicate cleany, that fedunate contains this type of change!  Assessment in specification required!																											
	PAS-ALU-DS-02	Correction of data sheet or issue of errata	1	specified before or which is different from initial specification.	e.g. data sheet correction because of new information about component behavior	A																	 -								
				Please indicate clearly, that Infoncte contains this type of change!																											
Al-Cap				Description of a new not previously covered																											
	PAS-ALU-DS-03	Specification of additional parameters		parameter. No technical change of the product.	e.g. adding new (leated) parameter.	A																									
	7.3.200303	application and on additional parameters in	.	Description of a new not previously covered parameter. No technical change of the product. P (§c. no influence (§c. no i	eg azagna (asaz) paranas.	Î																									
Al-Cap		MATERIAL	Ш	additional parametes (stat. evaluation)											_			$\perp$			$\perp$				ш						
			Р	P Change of housing	e.g. change Allalloy for housing	С	B: only if a cap holder holds the Capacitor body by pressing.			•	-   •						@• -	T . I			,   -		 					1.1			
Al-Cap							By by several external evolution of sevelute		_									_		+										_	
Al-Cap				P Change of sealing	e.g. change of rubber compound e.g. change of sealing disc material (sels), Snap in)	С	Evaluation only, if capacitor is gland  Evaluation only, if capacitors.	•		•				• •		-	@• @:						 -		-			-			
A4Cap	PAS-ALU-MA-03			P Change of external insulation / sixening	e.g. change from PVC into PET e.g. change of color		B: Only for glued capacitors.			•		@	• •		- •	-		ŝ •					 -		-			-		Blased Humids without applying	idity test can be done ing voltage.
Al-Cap	PAS-ALU-MA-04	Change of material composition - Lead / Termination	Р	P Change of lead or outer termination.	e.g. change of color e.g. change of leadframe from iron into copper e.g. change of leadframe finish from tin/lead into tin	В			-	-		.   .	-   -		• -	-		-	- •	В		• -	 -		-		-   -	-	@•		
	PAS-ALU-MA-OS	Change of material composition - Internal Insulation / Paper	Р	P Change of paper type / internal insulation	e.g. change of paper thickness 50 µm to 40µm	С	A: Only if impedance increase (debs characterization). Check if debasheet is affected (PAS-ALU-DS-01).													В									- @•		
Al-Cap							affected (PAS-ALU-DS-01).					-																			
ALC:en			Р	P Change of electrolyte	e.g. change in formulation	С	A: Only if impedance increase (delta characterization). Check if datasheet is affected (PAS-ALU-DS-01).		•	•		.   .				-		•	• -	В			 •		-	-   -	-   -	-	- @•		
Al-Cap	PAS-ALU-MA-07	Change of material composition - Tape Material Change of material composition - Base Plate	Р	P Change of closing tape material	e.g. change of glue or basis material e.g. change of used plastic material	C B		-	-	@•			- @•			-	@• -				-		 -		-		-	-			
жыр	- nemonifests	Secretary and the salesphareness - second Printer		P Change of base plate material	may make to take passed TREETIN					(LL)		T					o4(♥ (Q)													Test effort depr	pends on final risk
	PAS-ALU-MA-09	Change of supplier of material	۱. ا	P Change to a new or additional material supplier	e.g. for 2nd source purpose	с						.   .								В	.   .				-			-	- @•	Performance te material.	i test according to affected material specification hanged. Otherwise see sterial.
				as compared manufacturer.																										Assumption mail remains unches change of mail	aterial specification singed. Otherwise see
Al-Cap		DESIGN			· · · · · · · · · · · · · · · · · · ·														_				 				_				
Al-Cap	PAS-ALU-DE-01	DESCN Changes of termination, surface finish, shape, color, appearance or dimension structure - Wire Chanater Changes of termination, surface finish, shape, color, appearance or dimension structure - Termination Termination	1	P Change of wire diameter		В			-	-					•		•			В			 -		-		-	-		4	
Al-Cap		Territation	1	P Change of termination appearance For welded Al capacitors only. Change of acceptance	e.g. change from met tin into bright tin.	В				-					•		•		•	В	•	•	 -	-   -	-		-	-	@• -	4	
Al-Cap		Changes of termination, surface finish, shape, color, appearance or dimension structure - Appearance	1	Change of appearance P Note: Marking on device is defined as asperate change (PAS-ALU-PV-02).	e.g. change of color/appearance e.g. change of safety vent shape	В			-	-						-		-		-			 -		-		-	-			
Al-Cap	PAS-ALU-DE-04	Changes of termination, surface finish, shape, color, appearance or dimension structure - Rubber Sealing	-1	P Change of rubber sealing stand-off shape (for radial)	e.g. change of profile / design	A				-				- @•			@• -				-		 -		-			-			
Al-Cap Al-Cap			-	P Change of Al foil width  D Change of apperator width	e.g. change of width e.g. change of width	c		-								-	@• -	+	•	B .								-	- @•		
Al-Cap	PAS-ALU-DE-07	Changes of Inner construction - Separator Density	-	P Change of seperator density	e.g. change of seperator density/resistivity	С							•			-		-	• -	В			 •		-		-	-	- @•	Tourist C	mark (MI) and for solid
Al-Cap		Changes of inner construction - Inner Connection		P Change of inner connection P Change of closing tape	e.g. change of shape/dimension e.g. change of dimension	c				@•	@• -				@•		@• @			@B	@•	@•	 @•		-			-	-	components will	ength (11) not for saial without paddle tabs.
Al-Cap	PAS-ALU-DE-09 PAS-ALU-DE-10	Charges of inner construction - Closing Tape Charges of inner construction - Foil	-	P Change of closing tape P Change of foil type	e.g. change of dimension e.g. change of etching level e.g. change of thickness	c			@•	•	, D.						84/9		1 1	В			•						- @•		
Al-Cap		PROCESS													_		_	-	_							_	_				
Al-Cap		Changes in process technology or manufacturing methods - Terminal Attach		P Change of terminal attach process	e.g. change of stitching / welding layout	С		•	-	•					• -		@•			В	•	•	 -		-			-		(14) not for axis paddle tabs.	ength (11) and Vibration stal components without
Al-Cap	PAS-ALU-PR-02 PAS-ALU-PR-03	Changes in process technology or manufacturing methods - Winding	H	p Change of winding process	e.g. change of material disposition e.g. change of bulk process into individual		Ac only for HV application			•			•			-	•	-					 -		-				- @•		
Al-Cap			-	p Change of impregantion p Change of assembly process	e.g. change of massina capcasion e.g. change of bulk process into individual impregnation e.g. change of sealing method	c			•	•			- •	· @•				-	• -	В			 •	-   -	-		-	-	- @•	components on	s test for high voltage only.
Al-Cap		Changes in process technology or manufacturing methods - Assembly			e.g. change of assembly process sequence e.g. change of timing, voltage or temperature of	c				@•	- 1 -			- @•			@• -			@B							-			R: Depends on R: Depends on	
Al-Cap		Changes in process technology or manufacturing methods - Aging / Testing		P Change of aging/testing process	process	В											-   -	+-										+	- @•		
Al-Cap		Changes in process technology or manufacturing methods - Trim & Form Leaded	-	P Change of trim & form process (leaded)	e.g. change of looking shape or bending procedure					-	-   -			- @•				+ -							-				-		may be influenced
Al-Cap	PAS-ALU-PR-07 PAS-ALU-PR-08	Changes in process technology or manufacturing methods - Trim & Form SMD Process integrity: tuning within specification		P Change of trim & form process (SMD)  P Variation within process specification.	e.g. change of tooling shape or bending procedure e.g. process control	В								- @•	1		@• -		- @-		@•	€.							-	Solderability ma	may be influenced
Al-Cap Al-Cap		PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS																			-										
Al-Can	PAS-ALU-PN-01	Packing / shipping specification change (lossening of tolerances)	Р	P Change of packing specification.	e.g. number of pieces on reel.	В				-						-												-			
	PAS-ALU-PN-02	Dry pack requirements change	Р	P Change of drypack requirements.	e.g. change of MSL e.g. change in dry pack assurance (HIC, MSS)	В																									
Al-Cap					e.g. change in dry pack assurance (HL, sess) e.g. change by material e.g. change by geometry.	В																									
Al-Cap		PACKING / SHIPPING - VISUAL INSPECTION		<del>- '</del>																											
Al-Cap	PAS-ALU-PV-01	Change of labeling	1	P Change of labelling, also on reel.	(f) e.g. additional information (RoHS stamp) (P) e.g. change of customer specific information	В			-	-						-					-							-			
		·		-								_																			

	PAS-ALU-PV-02	Change of product marking	. 1	P Marking on device.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В				١.		.						Ι.Ι.												Т.П		
•												-									-						+	$\vdash$	-	+	_	
<u>.</u>	PAS-ALU-PV-03	Change of packing histoping specification  LOGISTICS / CAPACITY / TESTING - EQUIPEMENT	Р	P Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of documentation in packing specification			•									1 1				- 1		-   -		-			ىك		لنا	-	
Ī				Change in process technique which is not		с																					$\top$		$\overline{}$		. 3	est effort depends on final risk
	PAS-ALUEQ-01	Production from a new equipmentitod which uses a different technology or which due to its unique form or function can be expected to influence the integrity of the final product	Р	P Change in process technique which is not alwardy covered above.  Note: Changes affecting the product not covered by the table require also a PCN.	e. g. new equipment supplier with different process concept	С				•			•   •	•	•   •	٠.		· ·		В -	-			•							@• po	est effort depends on final risk ssessmert, erformance test according to affect social change.
	PAS-ALU-EQ-02	Production from a new equipment/loof which uses the same basic technology (replacement equipment or extension of existing equipment pool)		P PCN required for dedicated equipment for	e.g. additional equipment to increase production capacity e.g. replacement of same equipment	С														в -	-						-	- 1			@• III	est effort depends on final risk ssessment. erformance test according to affec
•				Change of final test equipment which use	e.g. replacement of same equipment							-															+	$\vdash$	_		pro	icess change.
	PAS-ALU-EIQ-03	Change in final test equipment type that uses a different technology	Р	Change of final test equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. change of tester platform	С		• 1				-				-				@B -	-			-		.   -	-	1 - 1			@• ==	isge R&R / delta correlation
P		LOGISTICS / CAPACITY / TESTING - PROCESS FLOW			e.g. movement or transfer of manufacturing site or					_		_			_	+			+		_					+	=	_	_	_	_	
	PAS-ALU-PF-01	Manufacturing sile transfer or movement of a part of production process to a different location/site	Р	P Change of manufacturing site. Includes traveler as well as additional site. Note: Reorganization inside one plantisite is not attached.	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.	В		٠			@•	٠			٠.	•			•	в •	٠	•		•							@•	
· ·		Elimination or addition of a manufacturing process step  Elimination of final electrical measurement / test flow block	-	P Change of manufacturing process sequence.	e.g. washing / cleaning process e.g. washing / cleaning process e.g. channe of order of recoveries	c		•	-			•				-											-	$\vdash$		-	@• 🚆	haracterisation depends on impact noticeing fine haracterisation depends on impact nal test flow.
		Elimination of final electrical measurement. I test flow block  LOGISTICS / CAPACITY / TESTING - Q-GATE	'	Feduciora for sensora constresers.	e.g. elemination of additional impedance control	С		•				-	-   -		-   -	<u> </u>	-   -	1 . 1 .	<u> </u>				- 1 -				<u> </u>		<u> </u>	لنك	@• In	al test flow.
	PAS-ALU-QG-01	Change of test coverage used by the supplier to ensure data sheet compliance (e.g., elimination/addition of electrical measurement/test flow block, relaxation/enhancement of monitoring procedure or sampling)		P Change of test coverage.	e.g. change from 100% to sample inspection e.g. test flow block, reduction from three to two temperature measurements e.g. change in burn intru in process.	С																									- RI	(electr. funct.): test coverage. (reliability) only for change in burn rocess.
		monitoring procedure or sampling)  NTC			e.g. change in burn inhun in process.					_	$\perp \perp$					$\perp \perp$											_	ightharpoonup	_		pro	icess.
-	PAS-NTC-AN-01	INT		Intended to be used if no other type of change						П		Т															$\overline{}$	$\equiv$	=	$\overline{}$	=	
	PAS-NTC-AN-02	Any change with impact on agreed upon technical contractual agreements.  Any change with impact on processability/manufacturability at customer, which is not covered in the matrix below.	P	P Intended to be used if no other type of change is applicable but the change affects agreed technical contractual agreements.	Not relevant for technical evaluation.  Technical interface means component terminals.	В						-					1 1		-								##	-	4	@•	-	
										_		_														_			#	₩•		
	PAS-NTC-DS-01	DATASMEET Change of detasheet parameters/electrical specification (min./max/lyp. values) and / or ACIDC securitization	Р	p Linange or approasion relevant information Not included: Editorial changes. No technical change of product, process or	e.g. tighten of electrical parameter distribution	A	for each application.																					$\vdash$	÷	+		
		Correction of data afset or issue of errata	١, ١	No technical change of product, process or test.  New description of behavior which was not appetited before or which is different from initial appetitusion.  Please indicate clearly, that Information this type of change	e.g. data sheet correction because of new information about component behavior	A																										
		On Manual Co. Services		<ul> <li>Initial specification.</li> <li>Please indicate clearly, that Infoncts contains this type of change!</li> </ul>																									ازاله			
				change of change of the product of the product of the product of a new not preductly country of the product. No such change of the product. If the product of the product o								7																$\vdash$	_	+		
	PAS-NTC-DS-03	Specification of additional parameters	1	No technical change of the product. (I): no influence (IP): Risk assessment depending on change for	e.g. adding new (tested) parameter.	A					-	-				-					-			-							-	
		MATERIAL	Щ	each application to provide evidence of additional oursewess (stat. evaluation)												ш																
		Change of material composition - Ceramic Binder	Р	P Change of Binder Material to bind ceramics.		С				Ŀ	-	- [	-   -			@•	- @•	@• -	-		-			-				- 1		-	- 7	
	PAS-NTC-MA-02	Change of material composition - Ceramic	Р	P Change of ceramic composition	e.g. changes in additives amount	с				-	-	-								@B •	@S			-			-	- 1		/ - /	@● an	trameter analyse only necessary if n anticipated impact on electrical afformance. = SMD device only
- F	PAS-NTC-MA-03	Change of material composition - Inner Electrode		Change of inner electrode material (ink material). Valid in case of multilayer shuckures.		С			-	1		-								В -						+	+	$\vdash$	-	#	@•	s SMD device only
				only.			A: Risk assessment on application level, if interaction with other material expected.	•		•	-	_				-					-			-		-	+-	$\vdash$	4			srameter analyse only necessary (
	PAS-NTC-MA-04	Change of material composition - Encapsulation			e.g. change of coaling e.g. change of additions in an insulation.	В				٠	-	٠				-	- @•		-	@B @•	-			-		-	-	$\vdash$			@• an	arameter analyse only necessary if n anticipated impact on electrical efformance.
	PAS-NTC-MA-05	Change of material composition - Lead material / Termination	Р	Change of lead or outer termination. Change of lead (finish) material, termination material or attachment material.	e.g. change from SnPb to pure Sn	В	Risk assessment needed to evaluate compatibility of acidering process.			-	- 6	@•	@• @•		@• -	@•		- @	@•	@B -	@•			-			-	- 1			@•	
	PAS-NTC-MA-06	Change of supplier of material		P Change to a new or additional material supplier at component manufacturer.	e.g. for 2nd source purpose	С					-					-				в •				-				- 1			@• As	asumption material specification smalles unchanged. Otherwise see hange of material.
		DESIGN Changes of termination, surface linish, shape, color, appearance or dimension structure - Lead		-						_		=					_					_	_		_	+	=	_	_			unge of material.
	PAS-NTC-DE-01			p Change of lead diameter  P Change of termination area	e.g. change lead diameter from 0.5 to 0.4 mm e.g. change of termination layer thickness e.g. change in termination dimensions.	В		-		-	- 6			@• @• @• @•	@• -	-				@B -	@• (			-		+-	+	$\vdash$	÷		@• su	
	PAS-NTC-DE-03	Terrelation Area Changes of termination, surface finish, shape, color, appearance or dimension structure - Internal Connection	1	P Change of inner connection	e.g. change in termination dimensions e.g. change from soldered connection to welded	С				1			@• @•		@• -	@•	1 1		· @•		@• (			-			H		H		@•	MD components only!
					e.g. change or adding of color on component Mainly in combination with other changes!	В								@• -					-		- '											
		Appearance Chances of inner construction - Electrode		p  Change of electrode layer thickness or geometry. For multi-layer technology only.	e.g. chance of electrode design	С				-	@•	1		- @•			-	@• -	-		@• (	_					+		+		-	
										+		-				-										-		H	4	-	_	
		Changes of Inner construction - Layer Thickness		P Change of ceramic layer thickness. For multi- layer technology only.		С		•		+	@•	-		- @•		-		@• -	-		@• (	$\rightarrow$		-		-	4	-	4			
	PAS-NTC-DE-07	Changes of inner construction - Number of Layers	-	Change of number of ceramic or electrode byers. For multi-toyer technology only. Altways in combination with PAS-NTC-DE-06.	s see also layer thickness	с		•		@•	@•	-		- @•		-	- @•	@• -	-		@• (	. •		-			-	- 1		1 - 1	-	
-		PROCESS  Changes in process technology or manufacturing methods - Lamination		P Change of lamination / press technique technology	e.g. stamp press to isostalic press	С				1	0.	. 1	@• -				. 0.			mB .	@=					Ť.					@•	
		Changes in process technology or manufacturing methods - Enring		P Schnidogy P Change of firing / sintering profile	e.g. temperature and / or time and / or atmosphere. e.g. from tunnel to batch kiln.	c					@•			- @•				@• @			-			-							@•	
		Changes in process technology or manufacturing methods - Dicing			e.g. change from cutting to sawing	С							@• -								-			-							@•	
	PAS-NTC-PR-04	Changes in process technology or manufacturing methods - Termination	-	P Change for termination preparation like plating or apply of termination base layer.	e.g. change in plating technology (final termination) e.g. change from dip in paste to plating (apply)	В				-	-				• .	•		- •		в -	•			-			-	- 1		1 - 1	@•	
	PAS-NTC-PR-05	Changes in process technology or manufacturing methods - Electrode apply			e.g. change of inner electrode by down method.	С			· @•	-			@• -			-	- @•	@• @			@•			-		-					@•	
		Changes in process technology or manufacturing methods - Assembly	-	p Change in assembly process for leaded or encapsulated devices.		В				•	-										-			-				- 1			- 1	
	PAS-NTC-PR-07	Process integrity: tuning within specification  PACKING / SHIPPING - NEW MATERIAL, CRITICAL DIMENSIONS	-	P Variation within process specification.	e.g. process control	С				-		-			-   -			1 - 1 -	-		-	-   -		-			1			لخت		
	PAS-NTC-PN-01	Packing / shipping specification change (loosening of tolerances)			e.g. number of pieces on reel.	В						- [																I				
				P Change of drypack requirements.	e.g. change of MSL e.g. change in dry pack assurance (HIC, MSS)	В						•				-					•			-			4		خلك	44		
		Change of carrier (tray, ree)  PACKING / SHIPPING - VISUAL INSPECTION	Р	P Change of carrier	e.g. change by material e.g. change by geometry.	В												نلنا			•			1			لنبل	لت	نان	بلنته		
	PAS-NTC-PV-01	PALICINAL FSHIPPING - VISCORE INSPECTION Change of labeling		P Change of labelling, also on reel.	(f) e.g. additional information (RbHS stamp) (P) e.g. change of customer specific information	В						- [																				
	PAS-NTC-PV-02	Change of product marking	1	P Marking on device.	e.g. change of content of marking e.g. change of method of marking e.g. change of appearance of marking	В						-				-			-		-										-	
	PAS-NTC-PV-03	Change of packing/ahipping specification	Р	P Change in packing specification which does not described a change of dimensions or material of the packing.	e.g. change of documentation in packing specification											-					-										- 7	
		LOGISTICS / CAPACITY / TESTING - EQUIPEMENT			1							_			_						_								+	#	_	
	PAS-NTC-EQ-01	Production from a new equipmentition which uses a different technology or which due to its unique form or function can be especied to influence the integrity of the final product	Р	Change in process technique which is not sheady covered above. Note: Changes affecting the product not covered by the table require also a PCN.	e. g. change from wet to dry technology.	с					-	-								@B -	-										@• Tes	est effort depends on final risk ssessment. erformance test according to affect rocess change.
												-															+	$\vdash$	4		pro	
		Production from a new equipment/loof which uses the same basic technology (replacement equipment or extension of existing equipment pool)	١ - ا	PCN required for dedicated equipment for sensitive component production.	e.g. elimination of manual handling processes	С														@B -	-			-	-   -						@• Per	est effort depends on final risk ssessment, erformance test according to affect rocess change.
	PAS-NTC-EIQ-02	equipment or exemsion or existing equipment pool)										- T																				
	PAS-NTC-EQ-02 PAS-NTC-EQ-03	equipment or eleanation or eleaning equipment pool)  Change in final feat equipment type that uses a different technology	Р	Change of final test equipment which use different technology.	e.g. change of tester platform	С			100							-				@B -	-			-			- 1	( . J.			@• =	inge R&R / delta correlation
	PAS-NTC-EO-03	Change in final test equipment type that uses a different technology	Р	Change of final least equipment which use different technology. PCN required for dedicated equipment for sensitive parameters.	e.g. change of leater platform	с				Ŀ	•						.   .			@B -	-	-   -		-	-   -	-	نيل	-	-   -		@• Ga	age R&R / delta correlation
	PAS-NTC-EO-03	Change in final test equipment type that uses a different technology	P	Change of final test equipment which use different technology. PCN regized for dedicated equipment for sensitive parameters.  Change of manufacturing site.  Includes traveller as well as additional site.  Net: Reconstraint in site one-invention is	e.g. change of teater platform  e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.	С		•		·		•			• •				•	@B -	-	•   •		-	-   -			-	-   -		@•	nge R&R / delta correlation
	PAS-NTC-EQ-03	Change in final test equipment type that uses a different technology	Р	Change of final less equipment which use different exchandage, PCN required for decidented equipment for assessible parameters.  Change of insendincturing site.  Include student as well as additional alle.  Note: Recogni	e.g. movement or transfer of manufacturing site or process step(s) to a different location/site.					•	-	•	· ·	· ·	• •		· ·		•		•	• •		-						@•		age RSR / delta correlation