PCN Number:		20110221003C				PCN Date:		09/10/2013	
Title: Qualification		of TSM0	of TSMC-WF9 as an additional wafer fab site for select devices in the					ces in the	
0.35um DPTN		M and D	PQM pro	ocess tech	nologies				
<b>Customer Contact:</b>		PCN Ma	Manager Phone: +1(214)480-6037		Dept:	Qua	lity Services		
Change	Type:								
Asse	☐ Assembly Site		Assembly Process				Assembly Materials		
Design			Electrical Specification			Mechanical Specification		ecification	
☐ Test Site			Packing/Shipping/Labeling		Test Process				
☐ Wafer Bump Site			Wafer Bump Material			Wafer Bump Process		rocess	
			☐ Wafer Fab Materials ☐			Wafer Fab Process			
PCN Details									

## **Description of Change:**

**Revision C** is to announce the <u>retraction</u> of select devices. These will continue to be sourced from their current location, TSMC-WF3. Affected devices are identified with a **strikethrough** and are highlighted in yellow in the Product Affected Section, Group B.

Revision A is to announce the qualification of TSMC-WF9 as an additional wafer fab site for the select devices in the 0.35um DPTM and DPQM process technologies currently sourced at TSMC WF3.

## **Device Groupings in the Product Affection Section:**

Group A: Devices Released Rev A (Issued 2/27/2012) Group B: Devices Retracted Rev B (Issued 7/06/2012) Group C: Devices Being Retracted This Rev C (9/09/2013)

The 0.35 DPTM process was previously qualified at TSMC FAB-WF9 on 07/21/2006. Qual details are provided in the Qual Data Section

## **Reason for Change:**

Continuity of supply.

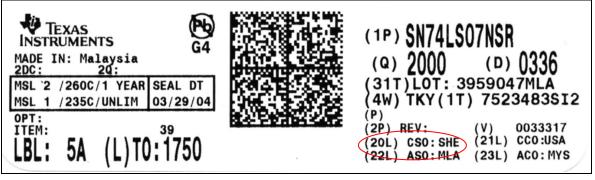
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None.

## Changes to product identification resulting from this PCN:

	Chip Site	Chip site code (20L)
Current	TSMC-WF3	CSO:TS5
New	TSMC-WF9	CSO:TS9

Sample product shipping label (not actual product label)



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FIUU	iuct r	ALIEC.	LEU.

Group A: Device Quali	fied/Pole	assad Pay	A (Tc	sued 2 /27 /2	012)			
HPA00026DBR	T	)2DBRG4	A (15	PCM2704DE		DCM27	'05DBG4	
PCM1802DB	PCM100			PCM2704DL				
PCM1802DBG4	PCM2704DBG4				PCM2704S1DBR		PCM2705DBR PCM2705DBRG4	
						T CM2703DBR04		
PCM1802DBR	PCM270	JADOK		PCM2705DE	<u> </u>			
Group B: Devices Re	tracted	in Rev B	(Issu	red 7/06/20	012)			
DIX9211PT	PCM178	2DBQG4	_	PCM2900E-P		PCM29	<del>02EG4</del>	
DIX9211PTR	PCM178	<del>2DBQR</del>		PCM2900E-P	<del>G4</del>	PCM29	<del>03E</del>	
HPA00419RGPR	PCM178	2DBQRG4		PCM2901E		PCM29	<del>03E/2K</del>	
HPA00436E/2K	PCM290	<del>0E</del>		PCM2901E/2	K	PCM29	03E/2KG4	
PCM1774RGPR	PCM290	<del>0E/2K</del>		PCM2901E/2	KG4	PCM29	<del>03EG4</del>	
PCM1774RGPRG4	PCM290	0E/2KG4		PCM2901EG4	1	PCM92	11PT	
PCM1774RGPT	PCM290	<del>0EG/2K</del>		PCM2902E		PCM92	<del>11PTR</del>	
PCM1774RGPTG4	PCM290	<del>0EG/2KE6</del>		PCM2902E/2	K			
PCM1782DBQ	PCM290	<del>0EG4</del>		PCM2902E/2	<del>KG4</del>			
Group C. Daviese De	tracted	Thic Dov	C = C = C	/00/2012\				
Group C: Devices Re		81PWPG4		PCM1681PV	<del>VPR</del>	PCM16	81PWPRG4	
		81PWPG4		PCM1681PV		PCM16	81PWPRG4	
	PCM168	<b>Qua</b>	lifica	PCM1681PV tion Data the validation	of this char	nge. The	qualification (	data
PCM1681PWP  This qualification has been validates that the propose	PCM168	<b>Qua</b>	lifica	tion Data the validation able released t	of this char	nge. The	qualification (	data
PCM1681PWP  This qualification has been validates that the propose Qualification Schedu	PEM166  n specifica ed change	Qually developmeets the	lification of the life of the	tion Data the validation able released t	of this chartechnical sp	nge. The ecificatio	qualification (	data
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PCM1681PWP  This qualification has been validates that the propose Qualification Schedul	n specifica ed change le: I Vehicle	Qua Illy develop meets the Start: e 1: PCM Die Co	lification of the policy of th	tion Data the validation able released to 011 Ei DB (Approvi	of this chartechnical spend: ed: 5/12/	nge. The ecificatio 11/30/72011)	qualification (	
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PCM1681PWP  This qualification has been validates that the propose Qualification Schedu  Wafer Fab Site: Wafer Fab Process: Qualification: P  Reliability Test	r specifical ed change le:  TSMC F.  0.35 DP	Quailly developments the Start: e 1: PCM Die Co AB9 TM Test Re Conditio	lifica ped for applic 05/2 1802 onstru sults ns	tion Data the validation able released to 011 Ei DB (Approvi	of this chartechnical spind: ed: 5/12/ ils allization 1:	nge. The ecificatio  11/30/ /2011)  AICu SiO2;	qualification ons.  2012  SOG; Si3N	4
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PCM1681PWP  This qualification has been validates that the propose Qualification Schedu  Wafer Fab Site: Wafer Fab Process: Qualification: P  Reliability Test Electrical Characterizat Manufacturability (Wafe	r specifical ded change le:  TSMC FA  0.35 DP  lan  ion er Fab)	Qually developments the Start: e 1: PCM Die Co AB9 TM Test Re Conditio Full Tem Per mfg.	lifica ped for applic 05/2 1802 onstru sults ns np & V Site (2705)	tion Data the validation able released to 011 EI DB (Approvention Detail Metail Oltage range specification	of this chartechnical spend: ed: 5/12/ ils allization 1: Passivation:	nge. The ecification 11/30/2011)  AICu SiO2;  # Lots 1	qualification ons.  2012  SOG; Si3N- SS/Lot Pass	4 Fail
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PCM1681PWP  This qualification has been validates that the propose Qualification Schedu  Wafer Fab Site: Wafer Fab Process: Qualification: PReliability Test Electrical Characterizat Manufacturability (Wafer Qualification)	TSMC F. 0.35 DP lan  er Fab) I Vehicle Pace	Qually developments the Start: e 1: PCM Die Co AB9 TM Test Re Conditio Full Tem Per mfg. e 2: PCM ckage / AB9	lifica ped for applic 05/2 1802 onstru sults ns np & V Site (2705)	PCM1681PV  Ition Data the validation able released to 011	of this chartechnical spind:  ed: 5/12/ ils allization 1: Passivation:  ed: 1/13/ Details	mge. The ecification 11/30//2011)  AICu SiO2; # Lots 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	qualification ons.  2012  SOG; Si3N- SS/Lot Pass	4 Fails

Conditions

Full Temp & Voltage range

Per mfg. Site specification

Reliability Test

Electrical Characterization

Manufacturability (Wafer Fab)

# Lots

1

SS/Lot

Pass

Approved

Fails

0

<del>Qual Vehicle 3: PCM1681PWPR</del>							
Package / Die Construction Details							
Wafer Fab Site: TSMC	FAB9	Metallization 1: AlCu					
Wafer Fab Process: 0.35 D	PQM	QM		1.1.5			
Qualification: 🛛 Plan	Test Results	Test Results					
Reliability Test	Conditions		# Lots	SS/Lot	Fails		
Electrical Characterization	Full Temp & V	oltage range	1	30	0		
**Autoclave 121C	121C, 2 atm (	96 Hrs)	3	77	0		
**T/C -65C/150C	-65C/+150C (	500 Cyc)	3	77	0		
ESD CDM	500V		1	3	0		
ESD HBM	2000V		1	3	0		
Ball Bond Shear	76 balls, 3 uni	ts min	3	76	0		
Bond Pull	76 Wire, 3 uni	ts min	3	76	0		
Wafer level Reliability	Per Site Speci	fication	3	Pass	-		
Latch-up	( per JESD78	)	1	6	0		
Manufacturability (Assembly)	(per mfg. Site	specification)	3	Pass	-		
Manufacturability (Wafer Fab)	(per mfg. Site	specification)	3	Pass	-		
** Preconditioning: level 3 @ 2	260C						
	Qual Vehicle 4	: PCM1774RGPR					
P	ackage / Die C	onstruction Details					
Wafer Fab Site: TSMC	FAB9	Metallization 1:	AlCu				
Wafer Fab Process: 0.35 D	PQM						
Qualification: 🛛 Plan	☐ Test Results						
Reliability Test	Conditions	# Lots	SS/Lot	Fails			
Electrical Characterization	Full Temp & Voltage range		1	30	0		
ESD CDM	500V	1	3	0			
ESD HBM	2000V	1	3	0			
Wafer level Reliability	Per Site Specification		1	Pass	-		
Latch-up	( per JESD78 )		1	6	0		
Manufacturability (Assembly)	(per mfg. Site	(per mfg. Site specification)			-		
Manufacturability (Wafer Fab)	(per mfg. Site	(per mfg. Site specification)			-		
	<b>Qual Vehicle 5</b>	: PCM1782DBQR					
P	ackage / Die C	onstruction Details					
Wafer Fab Site: TSMC	FAB9	Metallization 1:	AlCu				
Wafer Fab Process: 0.35 D	PQM						
Qualification: 🛛 Plan	Test Results						
Reliability Test	Conditions				Fails		
Electrical Characterization	Full Temp & V	Full Temp & Voltage range			0		
Manufacturability (Wafer Fab)	(per mfg. Site	g. Site specification) 1 Pass -			-		

Qual Vehicle 6: PCM9211PTR							
Package / Die Construction Details							
Wafer Fab Site:	TSMC	AB9	Metallization 1: AlCu				
Wafer Fab Process: 0.35 DPQM							
Qualification: 🛛 Plan 🔲 Test Results							
Reliability Test		Conditions		# Lots	SS/Lot	Fails	
Electrical Characterizat	ion	Full Temp & Vo	-	1	30	0	
Manufacturability (Wafe	er Fab)	(per mfg. Site	specification)	1	Pass	-	
			n Data: (Approve				
This qualification has been validates that the propose						n data	
		Qual Vehicle	1: PCM1802DB				
	Pa	ackage / Die Co	nstruction Details				
Wafer Fab Site:	TSMC-F	AB9	Metallization:	: Al-Si-Cu			
Wafer Fab Process:	0.35ur	n DPTM Dual gate					
Qualification:   P	lan 🛭	Test Results	<u> </u>				
Reliability Test		Conditions		# Lots	SS/Lot	Fails	
**High Temp Operating	g Life	125C (1000 Hrs)		1	120	0	
**T/C -65C/150C		-65C/+150C (50	1	81	0		
**High Temp Storage I	_ife	170C (420 Hrs)	1	81	0		
**Thermal Shock		-65C/+150C (500 Cycles)			81	0	
**Biased HAST		130C/85%RH (96 Hrs)			80	0	
**Autoclave 121C		121C, 2Atm (96	1	80	0		
ESD HBM (3 units/voltage)		1500V	1	3	0		
ESD CDM (3 units/volta	age)	1000V	1	3	0		
Latch-up		(per JESD78)		1	6	0	
**- Preconditioning Sec	quence:	L1-260C					

Qual Vehicle 2 : PCM1807PW							
Package / Die Construction Details							
Wafer Fab Site:	TSMC-	FAB9	Metallization:	Al-Si-C	Al-Si-Cu		
Wafer Fab Process:	0.35u	m DPTM Dual gate	Passivation:	SiO2 /	SiN 1.5/10	kA	
Qualification:   P	lan						
Reliability Test		Conditions		# Lots	SS/Lot	Fails	
**High Temp Operating	g Life	125C (1000 Hrs)	2	120	0		
**T/C -65C/150C		-65C/+150C (500 (	2	84	0		
**High Temp Storage I	_ife	170C (420 Hrs)		2	80	0	
**Thermal Shock		-65C/+150C (500 Cycles)		2	80	0	
**Biased HAST		130C/85%RH (96 Hrs)		2	80	0	
**Autoclave 121C		121C, 2Atm (96 Hrs)		2	80	0	
ESD HBM (3 units/voltage)		2000V		2	3	0	
ESD CDM (3 units/voltage)		1000V		2	3	0	
Latch-up		(per JESD78)		2	6	0	
**- Preconditioning Sequence: L1-260C							

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com